APPENDIX D

LABORATORY DATA

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
* 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

QA/QC Summary Report

Client: MT DEQ
Report Date: 10/21/09
Project: McLaren Tailings Abandoned Mine Site
Work Order: H09090405

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2510 B									Analytical Run: COND_090930A	
Sample ID: CCV1_090930A	Continuing Calibration Verification Standard								09/30/09 14:55	
Conductivity		724	umhos/cm	1.0	101	90	110			
Sample ID: CCV2_090930A	Continuing Calibration Verification Standard								09/30/09 15:23	
Conductivity		724	umhos/cm	1.0	101	90	110			
Sample ID: CCV3_090930A	Continuing Calibration Verification Standard								09/30/09 15:47	
Conductivity		722	umhos/cm	1.0	101	90	110			
Method: A2510 B									Batch: 090930A-COND-PROBE-W	
Sample ID: LCS1_090930A	Laboratory Control Sample					Run: COND_090930A			09/30/09 14:32	
Conductivity		1400	umhos/cm	1.0	99	90	110			
Sample ID: H09090405-001ADUP	Sample Duplicate					Run: COND_090930A			09/30/09 15:11	
Conductivity		345	umhos/cm	1.0				1	10	
Sample ID: H09090405-012ADUP	Sample Duplicate					Run: COND_090930A			09/30/09 15:40	
Conductivity		326	umhos/cm	1.0				0.2	10	
Sample ID: H09090405-016ADUP	Sample Duplicate					Run: COND_090930A			09/30/09 15:54	
Conductivity		543	umhos/cm	1.0				0.8	10	
Method: A2510 B									Analytical Run: MAN-TECH_091002A	
Sample ID: ICV	Initial Calibration Verification Standard								10/02/09 15:17	
Conductivity		724	umhos/cm	1.0	101	90	110			
Method: A2510 B									Batch: R57276	
Sample ID: LCS	Laboratory Control Sample					Run: MAN-TECH_091002A			10/02/09 15:19	
Conductivity		1440	umhos/cm	1.0	102	90	110			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Client: MT DEQ
Report Date: 10/21/09
Project: McLaren Tailings Abandoned Mine Site
Work Order: H09090405

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2540 C									Batch: 090930A-SLDS-TDS-W	
Sample ID: MBLK1_090930A	Method Blank					Run: SOLIDS_090930B			09/30/09 16:44	
Solids, Total Dissolved TDS @ 180 C		ND	mg/L	1.0						
Sample ID: LCS1_090930A	Laboratory Control Sample					Run: SOLIDS_090930B			09/30/09 16:45	
Solids, Total Dissolved TDS @ 180 C		997	mg/L	10	100	90	110			
Sample ID: H09090386-001BDUP	Sample Duplicate					Run: SOLIDS_090930B			09/30/09 16:45	
Solids, Total Dissolved TDS @ 180 C		198	mg/L	10				2	20	
Sample ID: H09090405-004AMS	Sample Matrix Spike					Run: SOLIDS_090930B			09/30/09 16:47	
Solids, Total Dissolved TDS @ 180 C		2240	mg/L	10	100	80	120			
Sample ID: H09090405-004AMSD	Sample Matrix Spike Duplicate					Run: SOLIDS_090930B			09/30/09 16:48	
Solids, Total Dissolved TDS @ 180 C		2210	mg/L	10	98	80	120	1.4	10	
Sample ID: H09090405-011AMS	Sample Matrix Spike					Run: SOLIDS_090930B			09/30/09 16:50	
Solids, Total Dissolved TDS @ 180 C		2200	mg/L	10	99	80	120			
Sample ID: H09090405-011AMSD	Sample Matrix Spike Duplicate					Run: SOLIDS_090930B			09/30/09 16:50	
Solids, Total Dissolved TDS @ 180 C		2200	mg/L	10	99	80	120	0	10	
Method: A4500-H B									Analytical Run: PH2_090930A	
Sample ID: CCV1_090930A	Continuing Calibration Verification Standard								09/30/09 15:41	
pH		10.1	s.u.	0.10	101	99	101			
Method: A4500-H B									Batch: 090930A-PH-W	
Sample ID: LCS1_090930A	Laboratory Control Sample					Run: PH2_090930A			09/30/09 14:51	
pH		7.04	s.u.	0.10	101	99	101			
Sample ID: H09090405-001ADUP	Sample Duplicate					Run: PH2_090930A			09/30/09 15:22	
pH		8.22	s.u.	0.10				0.1	2	
Sample ID: H09090405-012ADUP	Sample Duplicate					Run: PH2_090930A			09/30/09 15:52	
pH		7.94	s.u.	0.10				0	2	

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QA/QC Summary Report

Client: MT DEQ
Report Date: 10/21/09
Project: McLaren Tailings Abandoned Mine Site
Work Order: H09090405

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: A2320 B										Batch: R57134
Sample ID: MBLK		Method Blank				Run: MAN-TECH_091005A				10/05/09 12:31
Alkalinity, Total as CaCO3		ND	mg/L	0.9						
Sample ID: LCS		Laboratory Control Sample				Run: MAN-TECH_091005A				10/05/09 12:39
Alkalinity, Total as CaCO3		560	mg/L	4.0	93	90	110			
Sample ID: H09090405-002AMS		Sample Matrix Spike				Run: MAN-TECH_091005A				10/05/09 13:28
Alkalinity, Total as CaCO3		720	mg/L	4.0	100	90	110			
Sample ID: H09090405-002AMSD		Sample Matrix Spike Duplicate				Run: MAN-TECH_091005A				10/05/09 13:35
Alkalinity, Total as CaCO3		710	mg/L	4.0	98	90	110	2.1	20	
Sample ID: H09090405-005ADUP		Sample Duplicate				Run: MAN-TECH_091005A				10/05/09 14:00
Alkalinity, Total as CaCO3		130	mg/L	4.0				0	20	
Sample ID: H09090405-009AMS		Sample Matrix Spike				Run: MAN-TECH_091005A				10/05/09 14:45
Alkalinity, Total as CaCO3		700	mg/L	4.0	91	90	110			
Sample ID: H09090405-009AMSD		Sample Matrix Spike Duplicate				Run: MAN-TECH_091005A				10/05/09 14:53
Alkalinity, Total as CaCO3		690	mg/L	4.0	90	90	110	0.7	20	
Sample ID: H09090405-014ADUP		Sample Duplicate				Run: MAN-TECH_091005A				10/05/09 15:30
Alkalinity, Total as CaCO3		170	mg/L	4.0				0.5	20	
Sample ID: H09100003-006AMS		Sample Matrix Spike				Run: MAN-TECH_091005A				10/05/09 16:53
Alkalinity, Total as CaCO3		710	mg/L	4.0	103	90	110			
Sample ID: H09100003-006AMSD		Sample Matrix Spike Duplicate				Run: MAN-TECH_091005A				10/05/09 17:00
Alkalinity, Total as CaCO3		700	mg/L	4.0	101	90	110	1.2	20	

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QA/QC Summary Report

Client: MT DEQ
Report Date: 10/21/09
Project: McLaren Tailings Abandoned Mine Site
Work Order: H09090405

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7										Batch: B_41811
Sample ID: MB-41811	4	Method Blank				Run: SUB-B136977				10/02/09 23:58
Aluminum		ND	mg/L	0.008						
Cadmium		ND	mg/L	0.0009						
Iron		0.006	mg/L	0.002						
Manganese		ND	mg/L	0.0003						
Sample ID: LCS5-41811	4	Laboratory Control Sample				Run: SUB-B136977				10/03/09 00:02
Aluminum		2.64	mg/L	0.10	106	85	115			
Cadmium		0.254	mg/L	0.0010	102	85	115			
Iron		2.56	mg/L	0.030	102	85	115			
Manganese		2.54	mg/L	0.010	102	85	115			
Sample ID: B09092922-003AMS5	4	Sample Matrix Spike				Run: SUB-B136977				10/03/09 00:27
Aluminum		2.62	mg/L	0.10	104	70	130			
Cadmium		0.254	mg/L	0.0010	102	70	130			
Iron		4.06	mg/L	0.030	110	70	130			
Manganese		2.54	mg/L	0.010	101	70	130			
Sample ID: B09092922-003AMSD5	4	Sample Matrix Spike Duplicate				Run: SUB-B136977				10/03/09 00:31
Aluminum		2.64	mg/L	0.10	105	70	130	1	20	
Cadmium		0.254	mg/L	0.0010	102	70	130	0	20	
Iron		4.14	mg/L	0.030	113	70	130	2.1	20	
Manganese		2.56	mg/L	0.010	102	70	130	0.9	20	

Qualifiers:

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QA/QC Summary Report

Client: MT DEQ
Report Date: 10/21/09
Project: McLaren Tailings Abandoned Mine Site
Work Order: H09090405

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.7									Analytical Run: SUB-B136977	
Sample ID: ICV	4	Continuing Calibration Verification Standard							10/02/09 11:11	
Aluminum		2.49	mg/L	0.10	100	95	105			
Cadmium		2.54	mg/L	0.010	102	95	105			
Iron		2.57	mg/L	0.030	103	95	105			
Manganese		2.54	mg/L	0.010	102	95	105			
Method: E200.7									Batch: B_R136977	
Sample ID: MB-SPDIS091002A	3	Method Blank				Run: SUB-B136977			10/02/09 12:00	
Aluminum		ND	mg/L	0.008						
Iron		ND	mg/L	0.002						
Manganese		0.0005	mg/L	0.0003						
Sample ID: LFB-SPDIS091002A	3	Laboratory Fortified Blank				Run: SUB-B136977			10/02/09 12:04	
Aluminum		5.04	mg/L	0.10	101	85	115			
Iron		5.06	mg/L	0.030	101	85	115			
Manganese		4.98	mg/L	0.010	100	85	115			
Sample ID: B09100118-002CMS2	3	Sample Matrix Spike				Run: SUB-B136977			10/02/09 15:51	
Aluminum		31.9	mg/L	0.10		70	130			A
Iron		531	mg/L	0.15		70	130			A
Manganese		19.5	mg/L	0.010	90	70	130			
Sample ID: B09100118-002CMSD	3	Sample Matrix Spike Duplicate				Run: SUB-B136977			10/02/09 15:55	
Aluminum		31.6	mg/L	0.10		70	130	0.9	20	A
Iron		535	mg/L	0.15		70	130	0.6	20	A
Manganese		19.7	mg/L	0.010	94	70	130	1	20	
Sample ID: B09100167-001BMS2	3	Sample Matrix Spike				Run: SUB-B136977			10/02/09 22:07	
Aluminum		4.69	mg/L	0.10	93	70	130			
Iron		4.66	mg/L	0.030	92	70	130			
Manganese		4.60	mg/L	0.010	92	70	130			
Sample ID: B09100167-001BMSD	3	Sample Matrix Spike Duplicate				Run: SUB-B136977			10/02/09 22:11	
Aluminum		4.77	mg/L	0.10	95	70	130	1.9	20	
Iron		4.76	mg/L	0.030	94	70	130	2.1	20	
Manganese		4.63	mg/L	0.010	92	70	130	0.7	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

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QA/QC Summary Report

Client: MT DEQ **Report Date:** 10/21/09

Project: McLaren Tailings Abandoned Mine Site **Work Order:** H09090405

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8										Batch: B_41811
Sample ID: MB-41811	4	Method Blank				Run: SUB-B136984				10/03/09 11:53
Aluminum		0.002	mg/L	0.0001						
Cadmium		ND	mg/L	1E-05						
Copper		0.0006	mg/L	8E-05						
Zinc		0.002	mg/L	0.0001						
Sample ID: LCS5-41811	4	Laboratory Control Sample				Run: SUB-B136984				10/03/09 11:57
Aluminum		2.34	mg/L	0.10	93	85	115			
Cadmium		0.253	mg/L	0.0010	101	85	115			
Copper		0.452	mg/L	0.010	90	85	115			
Zinc		0.483	mg/L	0.010	96	85	115			
Sample ID: B09092922-003AMS5	4	Sample Matrix Spike				Run: SUB-B136984				10/03/09 12:29
Aluminum		2.29	mg/L	0.10	91	70	130			
Cadmium		0.254	mg/L	0.0010	102	70	130			
Copper		0.477	mg/L	0.010	88	70	130			
Zinc		0.612	mg/L	0.010	96	70	130			
Sample ID: B09092922-003AMSD5	4	Sample Matrix Spike Duplicate				Run: SUB-B136984				10/03/09 12:32
Aluminum		2.31	mg/L	0.10	92	70	130	0.7	20	
Cadmium		0.257	mg/L	0.0010	103	70	130	0.9	20	
Copper		0.476	mg/L	0.010	88	70	130	0.3	20	
Zinc		0.613	mg/L	0.010	96	70	130	0.2	20	
Method: E200.8										Analytical Run: SUB-B136984
Sample ID: QCS - 090602A,09060	4	Initial Calibration Verification Standard								10/03/09 00:22
Aluminum		0.244	mg/L	0.10	98	90	110			
Cadmium		0.0257	mg/L	0.0010	103	90	110			
Copper		0.0505	mg/L	0.010	101	90	110			
Zinc		0.0494	mg/L	0.010	99	90	110			
Sample ID: QCS - 090602A,09060	4	Initial Calibration Verification Standard								10/03/09 08:13
Aluminum		0.248	mg/L	0.10	99	90	110			
Cadmium		0.0256	mg/L	0.0010	102	90	110			
Copper		0.0509	mg/L	0.010	102	90	110			
Zinc		0.0496	mg/L	0.010	99	90	110			
Sample ID: QCS - 090602A,09060	4	Initial Calibration Verification Standard								10/02/09 11:32
Aluminum		0.241	mg/L	0.10	96	90	110			
Cadmium		0.0251	mg/L	0.0010	100	90	110			
Copper		0.0490	mg/L	0.010	98	90	110			
Zinc		0.0487	mg/L	0.010	97	90	110			

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QA/QC Summary Report

Client: MT DEQ **Report Date:** 10/21/09

Project: McLaren Tailings Abandoned Mine Site **Work Order:** H09090405

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E200.8									Analytical Run: SUB-B137119	
Sample ID: QCS - 090602A,09060	3	Initial Calibration Verification Standard							10/06/09 23:17	
Cadmium		0.0257	mg/L	0.0010	103	90	110			
Copper		0.0512	mg/L	0.010	102	90	110			
Zinc		0.0500	mg/L	0.010	100	90	110			
Sample ID: QCS - 090602A,09060	3	Initial Calibration Verification Standard							10/06/09 13:54	
Cadmium		0.0258	mg/L	0.0010	103	90	110			
Copper		0.0522	mg/L	0.010	104	90	110			
Zinc		0.0517	mg/L	0.010	103	90	110			
Method: E200.8									Batch: B_R137119	
Sample ID: LRB	3	Method Blank				Run: SUB-B137119			10/06/09 14:20	
Cadmium		ND	mg/L	1E-05						
Copper		ND	mg/L	8E-05						
Zinc		ND	mg/L	0.0001						
Sample ID: LFB	3	Laboratory Fortified Blank				Run: SUB-B137119			10/06/09 14:24	
Cadmium		0.0515	mg/L	0.0010	103	85	115			
Copper		0.0536	mg/L	0.010	107	85	115			
Zinc		0.0533	mg/L	0.010	106	85	115			
Sample ID: H09090404-001B	3	Sample Matrix Spike				Run: SUB-B137119			10/07/09 00:01	
Cadmium		0.0517	mg/L	0.0010	103	70	130			
Copper		0.0501	mg/L	0.010	99	70	130			
Zinc		0.626	mg/L	0.010		70	130			A
Sample ID: H09090404-001B	3	Sample Matrix Spike Duplicate				Run: SUB-B137119			10/07/09 00:04	
Cadmium		0.0514	mg/L	0.0010	103	70	130	0.5	20	
Copper		0.0492	mg/L	0.010	97	70	130	1.8	20	
Zinc		0.621	mg/L	0.010		70	130	0.8	20	A
Sample ID: H09090400-001B	3	Sample Matrix Spike				Run: SUB-B137119			10/06/09 20:41	
Cadmium		0.0472	mg/L	0.0010	94	70	130			
Copper		0.0636	mg/L	0.010	95	70	130			
Zinc		0.0706	mg/L	0.010	89	70	130			
Sample ID: H09090400-001B	3	Sample Matrix Spike Duplicate				Run: SUB-B137119			10/06/09 20:45	
Cadmium		0.0469	mg/L	0.0010	94	70	130	0.7	20	
Copper		0.0633	mg/L	0.010	95	70	130	0.6	20	
Zinc		0.0697	mg/L	0.010	87	70	130	1.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-001
Client Sample ID: C1-4-20090922

Report Date: 10/21/09
Collection Date: 09/22/09 14:20
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.2	s.u.		0.1		A4500-H B	09/30/09 15:21 / JG
Conductivity	348	umhos/cm		1		A2510 B	09/30/09 15:12 / JG
Solids, Total Dissolved TDS @ 180 C	203	mg/L	H	10		A2540 C	09/30/09 16:46 / hm
INORGANICS							
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	10/05/09 13:14 / hm
METALS, TOTAL							
Aluminum	2.4	mg/L		0.1		E200.8	10/03/09 12:44 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 00:39 / eli-b
Copper	0.06	mg/L		0.01		E200.8	10/03/09 12:44 / eli-b
Iron	2.34	mg/L		0.03		E200.7	10/03/09 00:39 / eli-b
Manganese	0.06	mg/L		0.01		E200.7	10/03/09 00:39 / eli-b
Zinc	0.05	mg/L		0.01		E200.8	10/03/09 12:44 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-002
Client Sample ID: C1-3-20090923

Report Date: 10/21/09
Collection Date: 09/23/09 11:10
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.2	s.u.		0.1		A4500-H B	09/30/09 15:24 / JG
Conductivity	282	umhos/cm		1		A2510 B	09/30/09 15:14 / JG
Solids, Total Dissolved TDS @ 180 C	169	mg/L		10		A2540 C	09/30/09 16:47 / hm
INORGANICS							
Alkalinity, Total as CaCO3	120	mg/L		4		A2320 B	10/05/09 13:21 / hm
METALS, TOTAL							
Aluminum	5.0	mg/L		0.1		E200.7	10/03/09 00:43 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 00:43 / eli-b
Copper	0.06	mg/L		0.01		E200.8	10/03/09 12:48 / eli-b
Iron	4.62	mg/L		0.03		E200.7	10/03/09 00:43 / eli-b
Manganese	0.16	mg/L		0.01		E200.7	10/03/09 00:43 / eli-b
Zinc	0.03	mg/L		0.01		E200.8	10/03/09 12:48 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-003
Client Sample ID: C1-2-20090922

Report Date: 10/21/09
Collection Date: 09/22/09 18:40
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500-H B	09/30/09 15:29 / JG
Conductivity	314	umhos/cm		1		A2510 B	09/30/09 15:18 / JG
Solids, Total Dissolved TDS @ 180 C	180	mg/L	H	10		A2540 C	09/30/09 16:47 / hm
INORGANICS							
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	10/05/09 13:41 / hm
METALS, TOTAL							
Aluminum	0.3	mg/L		0.1		E200.7	10/03/09 00:47 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 00:47 / eli-b
Copper	0.06	mg/L		0.01		E200.8	10/03/09 12:52 / eli-b
Iron	0.30	mg/L		0.03		E200.7	10/03/09 00:47 / eli-b
Manganese	ND	mg/L		0.01		E200.7	10/03/09 00:47 / eli-b
Zinc	0.02	mg/L		0.01		E200.8	10/03/09 12:52 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-004
Client Sample ID: C1-1-20090923

Report Date: 10/21/09
Collection Date: 09/23/09 15:45
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	09/30/09 15:30 / JG
Conductivity	428	umhos/cm		1		A2510 B	09/30/09 15:22 / JG
Solids, Total Dissolved TDS @ 180 C	250	mg/L		10		A2540 C	09/30/09 16:47 / hm
INORGANICS							
Alkalinity, Total as CaCO3	200	mg/L		4		A2320 B	10/05/09 13:48 / hm
METALS, TOTAL							
Aluminum	0.6	mg/L		0.1		E200.8	10/03/09 12:56 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 00:51 / eli-b
Copper	0.02	mg/L		0.01		E200.8	10/03/09 12:56 / eli-b
Iron	0.58	mg/L		0.03		E200.7	10/03/09 00:51 / eli-b
Manganese	0.03	mg/L		0.01		E200.7	10/03/09 00:51 / eli-b
Zinc	ND	mg/L		0.01		E200.8	10/03/09 12:56 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-005
Client Sample ID: C3-8-20090923

Report Date: 10/21/09
Collection Date: 09/23/09 20:20
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500-H B	09/30/09 15:32 / JG
Conductivity	286	umhos/cm		1		A2510 B	09/30/09 15:26 / JG
Solids, Total Dissolved TDS @ 180 C	165	mg/L		10		A2540 C	09/30/09 16:48 / hm
INORGANICS							
Alkalinity, Total as CaCO3	130	mg/L		4		A2320 B	10/05/09 13:54 / hm
METALS, TOTAL							
Aluminum	0.1	mg/L		0.1		E200.8	10/03/09 13:00 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 00:55 / eli-b
Copper	ND	mg/L		0.01		E200.8	10/03/09 13:00 / eli-b
Iron	0.17	mg/L		0.03		E200.7	10/03/09 00:55 / eli-b
Manganese	0.01	mg/L		0.01		E200.7	10/03/09 00:55 / eli-b
Zinc	ND	mg/L		0.01		E200.8	10/03/09 13:00 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-006
Client Sample ID: C3-7-20090924

Report Date: 10/21/09
Collection Date: 09/24/09 20:50
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.8	s.u.		0.1		A4500-H B	09/30/09 15:35 / JG
Conductivity	287	umhos/cm		1		A2510 B	09/30/09 15:28 / JG
Solids, Total Dissolved TDS @ 180 C	168	mg/L		10		A2540 C	09/30/09 16:49 / hm
INORGANICS							
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	10/05/09 14:06 / hm
METALS, TOTAL							
Aluminum	11.6	mg/L		0.1		E200.7	10/03/09 00:59 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 00:59 / eli-b
Copper	0.09	mg/L		0.01		E200.8	10/03/09 13:04 / eli-b
Iron	14.5	mg/L		0.03		E200.7	10/03/09 00:59 / eli-b
Manganese	0.73	mg/L		0.01		E200.7	10/03/09 00:59 / eli-b
Zinc	0.06	mg/L		0.01		E200.8	10/03/09 13:04 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-007
Client Sample ID: C3-10-20090925

Report Date: 10/21/09
Collection Date: 09/25/09 09:50
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500-H B	09/30/09 15:37 / JG
Conductivity	265	umhos/cm		1		A2510 B	09/30/09 15:28 / JG
Solids, Total Dissolved TDS @ 180 C	150	mg/L		10		A2540 C	09/30/09 16:49 / hm
INORGANICS							
Alkalinity, Total as CaCO3	130	mg/L		4		A2320 B	10/05/09 14:26 / hm
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.7	10/02/09 15:35 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	10/06/09 23:49 / eli-b
Copper	ND	mg/L		0.01		E200.8	10/06/09 23:49 / eli-b
Iron	ND	mg/L		0.03		E200.7	10/02/09 15:35 / eli-b
Manganese	ND	mg/L		0.01		E200.7	10/02/09 15:35 / eli-b
Zinc	ND	mg/L		0.01		E200.8	10/06/09 23:49 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-008
Client Sample ID: C3-1-20090925

Report Date: 10/21/09
Collection Date: 09/25/09 13:40
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	8.0	s.u.		0.1		A4500-H B	09/30/09 15:39 / JG
Conductivity	376	umhos/cm		1		A2510 B	09/30/09 15:30 / JG
Solids, Total Dissolved TDS @ 180 C	242	mg/L		10		A2540 C	09/30/09 16:49 / hm
INORGANICS							
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	10/05/09 14:32 / hm
METALS, TOTAL							
Aluminum	0.1	mg/L		0.1		E200.8	10/03/09 13:24 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:11 / eli-b
Copper	ND	mg/L		0.01		E200.8	10/03/09 13:24 / eli-b
Iron	0.20	mg/L		0.03		E200.7	10/03/09 01:11 / eli-b
Manganese	0.01	mg/L		0.01		E200.7	10/03/09 01:11 / eli-b
Zinc	0.01	mg/L		0.01		E200.8	10/03/09 13:24 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-009
Client Sample ID: C3-5-20090925

Report Date: 10/21/09
Collection Date: 09/25/09 14:50
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	09/30/09 15:43 / JG
Conductivity	331	umhos/cm		1		A2510 B	09/30/09 15:32 / JG
Solids, Total Dissolved TDS @ 180 C	198	mg/L		10		A2540 C	09/30/09 16:49 / hm
INORGANICS							
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	10/05/09 14:38 / hm
METALS, TOTAL							
Aluminum	6.1	mg/L		0.1		E200.7	10/03/09 01:15 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:15 / eli-b
Copper	0.08	mg/L		0.01		E200.8	10/03/09 13:28 / eli-b
Iron	6.89	mg/L		0.03		E200.7	10/03/09 01:15 / eli-b
Manganese	0.32	mg/L		0.01		E200.7	10/03/09 01:15 / eli-b
Zinc	0.04	mg/L		0.01		E200.8	10/03/09 13:28 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-010
Client Sample ID: C3-6-20090925

Report Date: 10/21/09
Collection Date: 09/25/09 19:55
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	09/30/09 15:46 / JG
Conductivity	303	umhos/cm		1		A2510 B	09/30/09 15:33 / JG
Solids, Total Dissolved TDS @ 180 C	179	mg/L		10		A2540 C	09/30/09 16:50 / hm
INORGANICS							
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	10/05/09 14:59 / hm
METALS, TOTAL							
Aluminum	1.1	mg/L		0.1		E200.8	10/03/09 13:32 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:19 / eli-b
Copper	0.03	mg/L		0.01		E200.8	10/03/09 13:32 / eli-b
Iron	1.56	mg/L		0.03		E200.7	10/03/09 01:19 / eli-b
Manganese	0.10	mg/L		0.01		E200.7	10/03/09 01:19 / eli-b
Zinc	0.02	mg/L		0.01		E200.8	10/03/09 13:32 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-011
Client Sample ID: C3-3-20090925

Report Date: 10/21/09
Collection Date: 09/25/09 20:15
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	09/30/09 15:47 / JG
Conductivity	356	umhos/cm		1		A2510 B	09/30/09 15:35 / JG
Solids, Total Dissolved TDS @ 180 C	220	mg/L		10		A2540 C	09/30/09 16:50 / hm
INORGANICS							
Alkalinity, Total as CaCO3	150	mg/L		4		A2320 B	10/05/09 15:05 / hm
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.8	10/03/09 13:36 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:24 / eli-b
Copper	ND	mg/L		0.01		E200.8	10/03/09 13:36 / eli-b
Iron	0.13	mg/L		0.03		E200.7	10/03/09 01:24 / eli-b
Manganese	0.02	mg/L		0.01		E200.7	10/03/09 01:24 / eli-b
Zinc	0.02	mg/L		0.01		E200.8	10/03/09 13:36 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-012
Client Sample ID: C3-4-20090926

Report Date: 10/21/09
Collection Date: 09/26/09 11:30
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	09/30/09 15:50 / JG
Conductivity	327	umhos/cm		1		A2510 B	09/30/09 15:40 / JG
Solids, Total Dissolved TDS @ 180 C	190	mg/L		10		A2540 C	09/30/09 16:51 / hm
INORGANICS							
Alkalinity, Total as CaCO3	140	mg/L		4		A2320 B	10/05/09 15:11 / hm
METALS, TOTAL							
Aluminum	ND	mg/L		0.1		E200.7	10/02/09 15:39 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	10/06/09 23:53 / eli-b
Copper	0.02	mg/L		0.01		E200.8	10/06/09 23:53 / eli-b
Iron	ND	mg/L		0.03		E200.7	10/02/09 15:39 / eli-b
Manganese	ND	mg/L		0.01		E200.7	10/02/09 15:39 / eli-b
Zinc	ND	mg/L		0.01		E200.8	10/06/09 23:53 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-013
Client Sample ID: C3-9-20090926

Report Date: 10/21/09
Collection Date: 09/26/09 13:45
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.9	s.u.		0.1		A4500-H B	09/30/09 15:54 / JG
Conductivity	297	umhos/cm		1		A2510 B	09/30/09 15:43 / JG
Solids, Total Dissolved TDS @ 180 C	166	mg/L		10		A2540 C	09/30/09 16:51 / hm
INORGANICS							
Alkalinity, Total as CaCO3	130	mg/L		4		A2320 B	10/05/09 15:17 / hm
METALS, TOTAL							
Aluminum	0.1	mg/L		0.1		E200.8	10/03/09 13:40 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:28 / eli-b
Copper	ND	mg/L		0.01		E200.8	10/03/09 13:40 / eli-b
Iron	0.14	mg/L		0.03		E200.7	10/03/09 01:28 / eli-b
Manganese	ND	mg/L		0.01		E200.7	10/03/09 01:28 / eli-b
Zinc	0.01	mg/L		0.01		E200.8	10/03/09 13:40 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-014
Client Sample ID: C3-2-20090926

Report Date: 10/21/09
Collection Date: 09/26/09 16:15
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.8	s.u.		0.1		A4500-H B	09/30/09 15:57 / JG
Conductivity	542	umhos/cm		1		A2510 B	09/30/09 15:45 / JG
Solids, Total Dissolved TDS @ 180 C	342	mg/L		10		A2540 C	09/30/09 16:52 / hm
INORGANICS							
Alkalinity, Total as CaCO3	170	mg/L		4		A2320 B	10/05/09 15:24 / hm
METALS, TOTAL							
Aluminum	2.0	mg/L		0.1		E200.8	10/03/09 13:44 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:32 / eli-b
Copper	0.01	mg/L		0.01		E200.8	10/03/09 13:44 / eli-b
Iron	2.10	mg/L		0.03		E200.7	10/03/09 01:32 / eli-b
Manganese	0.13	mg/L		0.01		E200.7	10/03/09 01:32 / eli-b
Zinc	0.01	mg/L		0.01		E200.8	10/03/09 13:44 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-015
Client Sample ID: C2-2-20090926

Report Date: 10/21/09
Collection Date: 09/26/09 18:55
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	09/30/09 15:58 / JG
Conductivity	888	umhos/cm		1		A2510 B	10/02/09 15:20 / hm
Solids, Total Dissolved TDS @ 180 C	620	mg/L		10		A2540 C	09/30/09 16:52 / hm
INORGANICS							
Alkalinity, Total as CaCO3	180	mg/L		4		A2320 B	10/05/09 15:37 / hm
METALS, TOTAL							
Aluminum	0.2	mg/L		0.1		E200.8	10/03/09 13:48 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:36 / eli-b
Copper	0.01	mg/L		0.01		E200.8	10/03/09 13:48 / eli-b
Iron	1.83	mg/L		0.03		E200.7	10/03/09 01:36 / eli-b
Manganese	0.43	mg/L		0.01		E200.7	10/03/09 01:36 / eli-b
Zinc	0.02	mg/L		0.01		E200.8	10/03/09 13:48 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-016
Client Sample ID: C2-1-20090927

Report Date: 10/21/09
Collection Date: 09/27/09 09:45
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	7.6	s.u.		0.1		A4500-H B	09/30/09 16:00 / JG
Conductivity	548	umhos/cm		1		A2510 B	09/30/09 15:52 / JG
Solids, Total Dissolved TDS @ 180 C	352	mg/L		10		A2540 C	09/30/09 16:52 / hm
INORGANICS							
Alkalinity, Total as CaCO3	160	mg/L		4		A2320 B	10/05/09 15:43 / hm
METALS, TOTAL							
Aluminum	4.1	mg/L		0.1		E200.7	10/03/09 01:40 / eli-b
Cadmium	ND	mg/L		0.001		E200.7	10/03/09 01:40 / eli-b
Copper	0.41	mg/L		0.01		E200.8	10/03/09 13:52 / eli-b
Iron	29.4	mg/L		0.03		E200.7	10/03/09 01:40 / eli-b
Manganese	0.17	mg/L		0.01		E200.7	10/03/09 01:40 / eli-b
Zinc	0.07	mg/L		0.01		E200.8	10/03/09 13:52 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

ENERGY LABORATORIES, INC. * 3161 E Lyndale (59604) * PO Box 5688 * Helena, MT 59601
* 406.442.0711 * FAX 406.442.0712 * helena@energylab.com

LABORATORY ANALYTICAL REPORT

Client: MT DEQ
Project: McLaren Tailings Abandoned Mine Site
Lab ID: H09090405-017
Client Sample ID: C2-3-20090927

Report Date: 10/21/09
Collection Date: 09/27/09 13:10
DateReceived: 09/30/09
Matrix: Aqueous

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL PROPERTIES							
pH	6.3	s.u.		0.1		A4500-H B	09/30/09 16:02 / JG
Conductivity	1670	umhos/cm		1		A2510 B	09/30/09 15:56 / JG
Solids, Total Dissolved TDS @ 180 C	1570	mg/L		10		A2540 C	09/30/09 16:52 / hm
INORGANICS							
Alkalinity, Total as CaCO3	38	mg/L		4		A2320 B	10/05/09 16:02 / hm
METALS, TOTAL							
Aluminum	3.3	mg/L		0.1		E200.8	10/03/09 13:56 / eli-b
Cadmium	ND	mg/L		0.001		E200.8	10/03/09 13:56 / eli-b
Copper	0.02	mg/L		0.01		E200.8	10/03/09 13:56 / eli-b
Iron	163	mg/L		0.03		E200.7	10/03/09 01:44 / eli-b
Manganese	1.68	mg/L		0.01		E200.7	10/03/09 01:44 / eli-b
Zinc	0.03	mg/L		0.01		E200.8	10/03/09 13:56 / eli-b

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

APPENDIX E

AS-BUILT DRAWINGS

MCLAREN TAILINGS ABANDONED MINE SITE
PUMPING WELL INSTALLATION AS-BUILTS
COOKE CITY, MONTANA

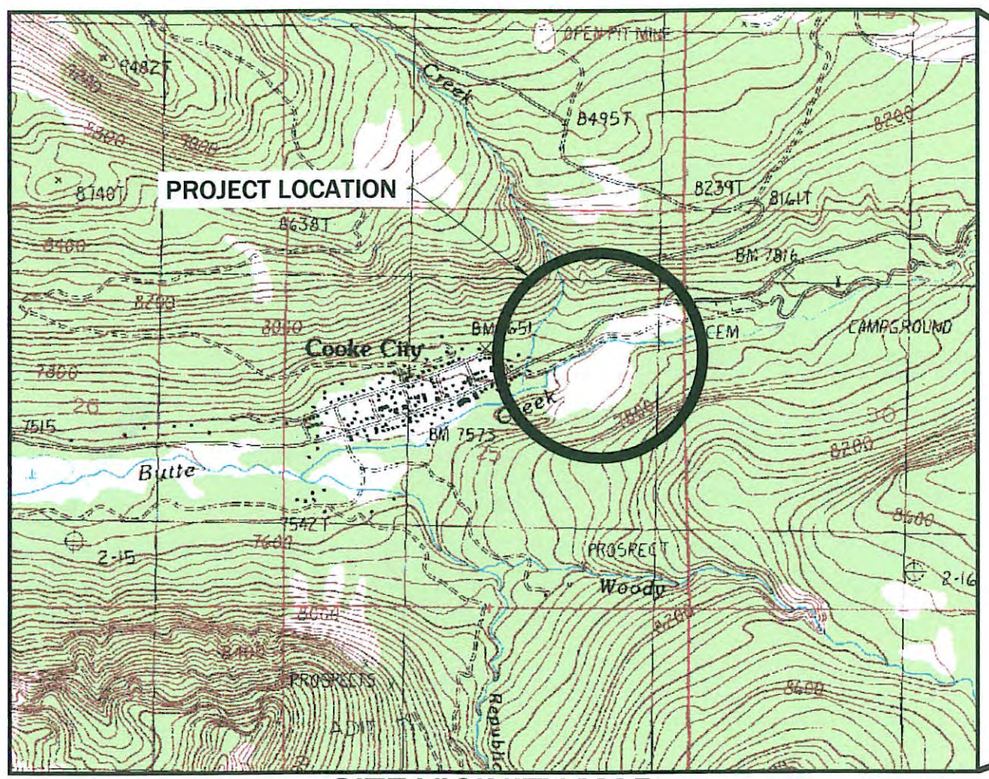
PREPARED FOR

MONTANA DEPARTMENT OF ENVIRONMENTAL QUALITY MINE WASTE CLEANUP

PREPARED BY

PIONEER TECHNICAL SERVICES, INC.

DECEMBER 2009



SITE VICINITY MAP

SOURCE:

SHEET
G-1

NOTES

1. CONTRACTOR SHALL NOTIFY IN WRITING ALL UTILITY COMPANIES AND UTILITY OWNERS AND DETERMINE EXACT LOCATION OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING WORK. NOTICE TO UTILITIES SHALL BE SUBMITTED TO OWNER; 48-HOUR NOTICE IS REQUIRED. CONTRACTOR IS RESPONSIBLE FOR PROTECTING AND REPAIRING ANY DAMAGED UTILITIES. CONTRACTOR SHALL NOTIFY ONE-CALL UTILITY LOCATE AT (800) 424-5555 AT LEAST 48-HOURS PRIOR TO CONSTRUCTION.
2. UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATED BASED ON RECORDS PROVIDED BY THE UTILITY OWNERS. ALL UTILITY LOCATIONS SHOWN ARE SUBJECT TO THE ACCURACY OF THE LOCATION METHODS AND RECORDS EMPLOYED BY THE UTILITY OWNERS. UTILITIES ARE ALSO SUBJECT TO RELOCATION SINCE THE DRAWINGS WERE PREPARED. NO EXCAVATION WAS PERFORMED IN LOCATING THESE UTILITIES. UTILITY LOCATIONS SHOWN SHOULD BE CONSIDERED APPROXIMATE AND ACTUAL DEPTHS MAY VARY.
3. CONTRACTOR IS TO PROVIDE HIS OWN WATER FOR DUST CONTROL AND DECONTAMINATION.

SHEET INDEX

LEGEND

EXISTING - PLAN VIEW

- INDEX CONTOURS
- INTERMEDIATE CONTOURS
- CULVERT
- EXISTING ROAD
- STREAM CHANNEL/SURFACE WATER
- PWR — PWR — ELECTRICAL LINE
- WTR — WTR — WATER LINE
- WET AREA

PROPOSED - PLAN VIEW

- C3-10 60 GPM — WELL IDENTIFICATION NUMBER
- W — WELL LOCATION
- W — ALTERNATE WELL LOCATION
- APPROVED GROUNDWATER DISCHARGE AREA AND DECONTAMINATION AREA

ABBREVIATIONS

GPM - GALLONS PER MINUTE
FT - LINEAL FEET

REVISION:
DATE: BY: DESC:

DRAWN BY: CLA
DESIGNED BY: JSA\MWB\MCB
CHECKED BY: JSA\MWB\MCB
APPROVED BY: MWB
PROJECT NO: 10140
DATE: 7/21/09

DISPLAYED AS:
COORD SYS/ZONE: NA
DATUM: NA
UNITS: NA
SOURCE: PIONEER

SCALE IN FEET
0

MDEQ/MWCB
MCLAREN TAILINGS ABANDONED MINE
SITE PUMPING WELL INSTALLATION

NOTES/
SHEET INDEX/
LEGEND

PIONEER
TECHNICAL SERVICES, INC.
63-1/2 WEST BROADWAY
BUTTE, MONTANA 59701
(406) 782-5177

SHEET
G-2

SITE ACCESS

MT HIGHWAY 212

TO COOKE CITY

SODA BUTTE CREEK CROSSING
(ONLY SITE ACCESS)

C3-1 30 GPM

C3-2 30 GPM

C3-3 30 GPM

C3-4 30 GPM

C3-5 30 GPM

C3-6 30 GPM

C3-7 30 GPM

C3-8 30 GPM

C3-9 150 GPM

C3-10 60 GPM

C2-1 100 GPM

C2-2 100 GPM

C2-3 100 GPM

C1-1 30 GPM

C1-2 30 GPM

C1-3 30 GPM

C1-4 30 GPM

C1-5 30 GPM

A1

A2

A3

ALTERNATE WELL LOCATIONS

ALTERNATE WELL LOCATIONS

LEGEND

APPROVED GROUNDWATER DISCHARGE AREA AND DECONTAMINATION AREA

WET AREA

REVISION:

DATE:	BY:	DESC:

DRAWN BY: CLA
DESIGNED BY: MWB
CHECKED BY: JSM
APPROVED BY: MWB
PROJECT NO: 1014.0
DATE: 7/21/09

DISPLAYED AS:
COORD SYS/ZONE: MSP
DATUM: NAD83
UNITS: FEET
SOURCE: PIONEER

N

SCALE IN FEET
0 50 100

MDEQ/MWCB
MCLAREN TAILINGS ABANDONED MINE
SITE PUMPING WELL INSTALLATION

LOCATIONS OF PUMPING WELLS

PIONEER
TECHNICAL SERVICES, INC.
63-1/2 WEST BROADWAY
BUTTE, MONTANA 59701
(406) 782-5177

SHEET
GW-1

SITE ACCESS

TO COOKE CITY

MT HIGHWAY 212

SODA BUTTE CREEK CROSSING
(ONLY SITE ACCESS)

C3-1
C3-2
C3-3
C3-4
C3-5
C3-6
C3-7
C3-8
C3-9 150 GPM
C3-10 60 GPM

C2-1
C2-2
C2-3

C1-1
C1-2
C1-3
C1-4

LEGEND

APPROVED GROUNDWATER DISCHARGE AREA AND DECONTAMINATION AREA

WET AREA

REVISION:

DATE:	BY:	DESC:

DRAWN BY: CLA
DESIGNED BY: MWB
CHECKED BY: JSM
APPROVED BY: MWB
PROJECT NO: 10140
DATE: 12/2/09

DISPLAYED AS:
COORD SYS/ZONE: MSP
DATUM: NAD83
UNITS: FEET
SOURCE: PIONEER

N

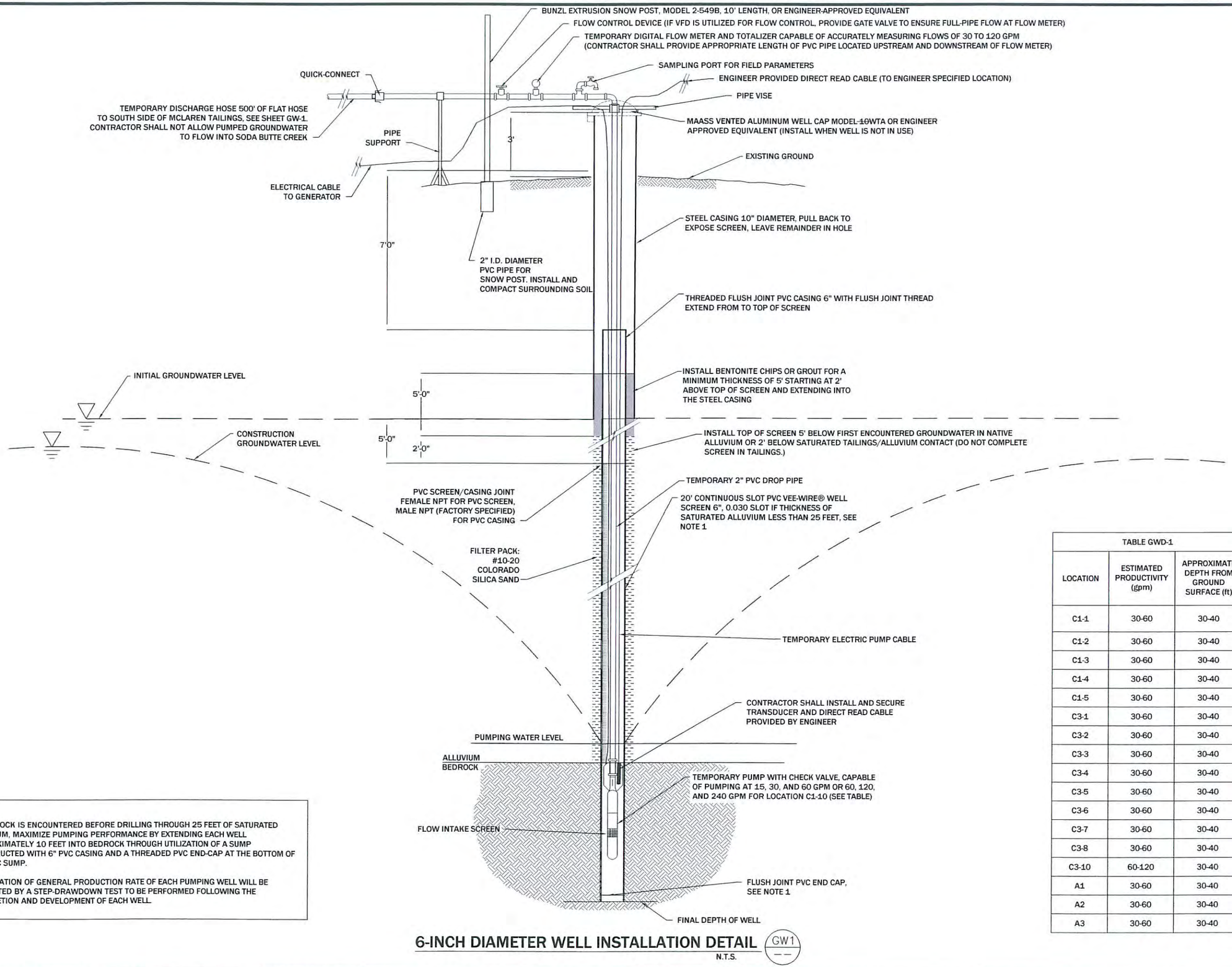
SCALE IN FEET
0 50 100

MDEQ/MWCB
MCLAREN TAILINGS ABANDONED MINE
SITE PUMPING WELL INSTALLATION

LOCATIONS OF PUMPING WELLS

PIONEER
TECHNICAL SERVICES, INC.
63-1/2 WEST BROADWAY
BUTTE, MONTANA 59701
(406) 782-5177

SHEET
GW-1 AB



NOTES:

1. IF BEDROCK IS ENCOUNTERED BEFORE DRILLING THROUGH 25 FEET OF SATURATED ALLUVIUM, MAXIMIZE PUMPING PERFORMANCE BY EXTENDING EACH WELL APPROXIMATELY 10 FEET INTO BEDROCK THROUGH UTILIZATION OF A SUMP CONSTRUCTED WITH 6" PVC CASING AND A THREADED PVC END-CAP AT THE BOTTOM OF THE PVC SUMP.
2. VERIFICATION OF GENERAL PRODUCTION RATE OF EACH PUMPING WELL WILL BE ESTIMATED BY A STEP-DRAWDOWN TEST TO BE PERFORMED FOLLOWING THE COMPLETION AND DEVELOPMENT OF EACH WELL.

TABLE GWD-1

LOCATION	ESTIMATED PRODUCTIVITY (gpm)	APPROXIMATE DEPTH FROM GROUND SURFACE (ft)
C1-1	30-60	30-40
C1-2	30-60	30-40
C1-3	30-60	30-40
C1-4	30-60	30-40
C1-5	30-60	30-40
C3-1	30-60	30-40
C3-2	30-60	30-40
C3-3	30-60	30-40
C3-4	30-60	30-40
C3-5	30-60	30-40
C3-6	30-60	30-40
C3-7	30-60	30-40
C3-8	30-60	30-40
C3-10	60-120	30-40
A1	30-60	30-40
A2	30-60	30-40
A3	30-60	30-40

6-INCH DIAMETER WELL INSTALLATION DETAIL

N.T.S.

GW1

REVISION:

DATE:	BY:	DESC.
1	MCB	MODS TO BID PACKAGE

DRAWN BY: SKL
DESIGNED BY: MWB
CHECKED BY: JSM
APPROVED BY: MWB
PROJECT NO: 10140
DATE: 7/21/09

DISPLAYED AS:
COORD SYS/ZONE: NA
DATUM: NA
UNITS: FEET
SOURCE: PIONEER

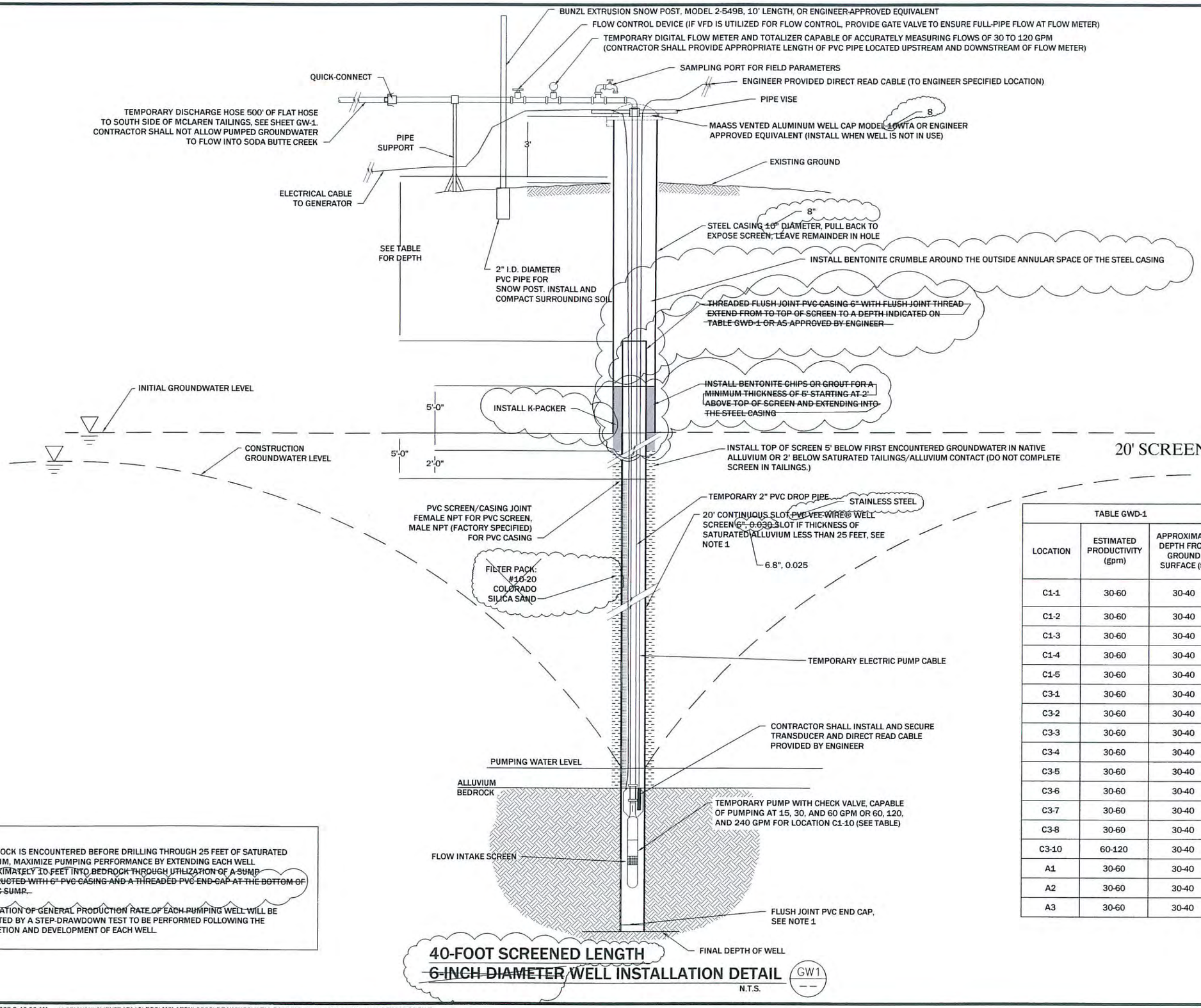
SCALE IN FEET
0 N.T.S.

MDEQ/MWCB
MCLAREN TAILINGS ABANDONED MINE
SITE PUMPING WELL INSTALLATION

TYPICAL
6-INCH DIAMETER
PUMPING WELL
DETAILS

PIONEER
TECHNICAL SERVICES, INC.
63-1/2 WEST BROADWAY
BUTTE, MONTANA 59701
(406) 782-5177

SHEET
GWD-1



40-FOOT SCREENED LENGTH 6-INCH DIAMETER WELL INSTALLATION DETAIL

N.T.S.

GW1

NOTES:

1. IF BEDROCK IS ENCOUNTERED BEFORE DRILLING THROUGH 25 FEET OF SATURATED ALLUVIUM, MAXIMIZE PUMPING PERFORMANCE BY EXTENDING EACH WELL APPROXIMATELY 10 FEET INTO BEDROCK THROUGH UTILIZATION OF A SUMP CONSTRUCTED WITH 6" PVC CASING AND A THREADED PVC END-CAP AT THE BOTTOM OF THE PVC SUMP.
2. VERIFICATION OF GENERAL PRODUCTION RATE OF EACH PUMPING WELL WILL BE ESTIMATED BY A STEP-DRAWDOWN TEST TO BE PERFORMED FOLLOWING THE COMPLETION AND DEVELOPMENT OF EACH WELL.

TABLE GWD-1			
LOCATION	ESTIMATED PRODUCTIVITY (gpm)	APPROXIMATE DEPTH FROM GROUND SURFACE (ft)	DEPTH FROM GROUND SURFACE TO TOP OF THREADED FLUSH JOINT PVC CASING (ft)
C1-1	30-60	30-40	10
C1-2	30-60	30-40	≥15
C1-3	30-60	30-40	10
C1-4	30-60	30-40	10
C1-5	30-60	30-40	10
C3-1	30-60	30-40	10
C3-2	30-60	30-40	10
C3-3	30-60	30-40	10
C3-4	30-60	30-40	≥10
C3-5	30-60	30-40	10
C3-6	30-60	30-40	10
C3-7	30-60	30-40	10
C3-8	30-60	30-40	10
C3-10	60-120	30-40	10
A1	30-60	30-40	10
A2	30-60	30-40	≥11
A3	30-60	30-40	≥11

REVISION:

DATE	BY	DESC.
1	MCB	MODS TO BID PACKAGE

DRAWN BY: SKL
DESIGNED BY: MWB
CHECKED BY: JSM
APPROVED BY: MWB
PROJECT NO: 10140
DATE: 9/3/09

DISPLAYED AS:
COORD SYS/ZONE: NA
DATUM: NA
UNITS: FEET
SOURCE: PIONEER

SCALE IN FEET
0 N.T.S.

MDEQ/MWCB
MCLAREN TAILINGS ABANDONED MINE
SITE PUMPING WELL INSTALLATION

TYPICAL 6-INCH DIAMETER PUMPING WELL DETAILS

PIONEER
TECHNICAL SERVICES, INC.
63-1/2 WEST BROADWAY
BUTTE, MONTANA 59701
(406) 782-5177

SHEET
GWD-1 AB

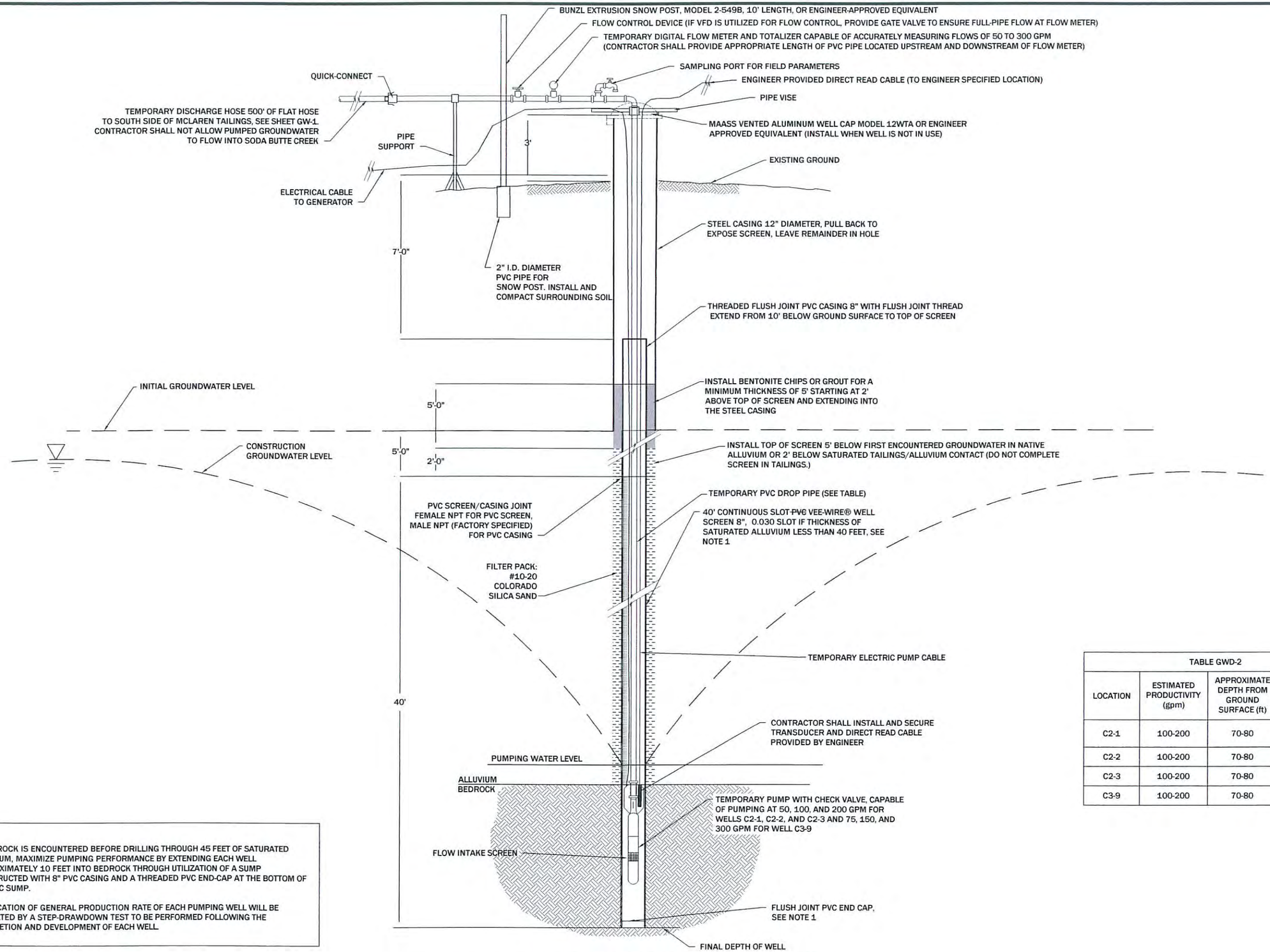


TABLE GWD-2			
LOCATION	ESTIMATED PRODUCTIVITY (gpm)	APPROXIMATE DEPTH FROM GROUND SURFACE (ft)	DROP PIPE DIA. (in)
C2-1	100-200	70-80	3
C2-2	100-200	70-80	3
C2-3	100-200	70-80	3
C3-9	100-200	70-80	3-4

NOTES:

1. IF BEDROCK IS ENCOUNTERED BEFORE DRILLING THROUGH 45 FEET OF SATURATED ALLUVIUM, MAXIMIZE PUMPING PERFORMANCE BY EXTENDING EACH WELL APPROXIMATELY 10 FEET INTO BEDROCK THROUGH UTILIZATION OF A SUMP CONSTRUCTED WITH 8" PVC CASING AND A THREADED PVC END-CAP AT THE BOTTOM OF THE PVC SUMP.
2. VERIFICATION OF GENERAL PRODUCTION RATE OF EACH PUMPING WELL WILL BE ESTIMATED BY A STEP-DRAWDOWN TEST TO BE PERFORMED FOLLOWING THE COMPLETION AND DEVELOPMENT OF EACH WELL.

8-INCH DIAMETER WELL INSTALLATION DETAIL

GW2

N.T.S.

REVISION:

DATE:	BY:	DESC:
9/2/09	MCB	MODS TO BID PACKAGE

DRAWN BY: SKL
DESIGNED BY: MWB
CHECKED BY: JSM
APPROVED BY: MWB
PROJECT NO: 10140
DATE: 7/21/09

DISPLAYED AS:
COORD SYS/ZONE: NA
DATUM: NA
UNITS: FEET
SOURCE: PIONEER

SCALE IN FEET
0 N.T.S.

MDEQ/MWCB
MCLAREN TAILINGS ABANDONED MINE
SITE PUMPING WELL INSTALLATION

TYPICAL
8-INCH DIAMETER
PUMPING WELL
DETAILS

PIONEER
TECHNICAL SERVICES, INC.
63-1/2 WEST BROADWAY
BUTTE, MONTANA 59702
(406) 782-5177

SHEET
GWD-2

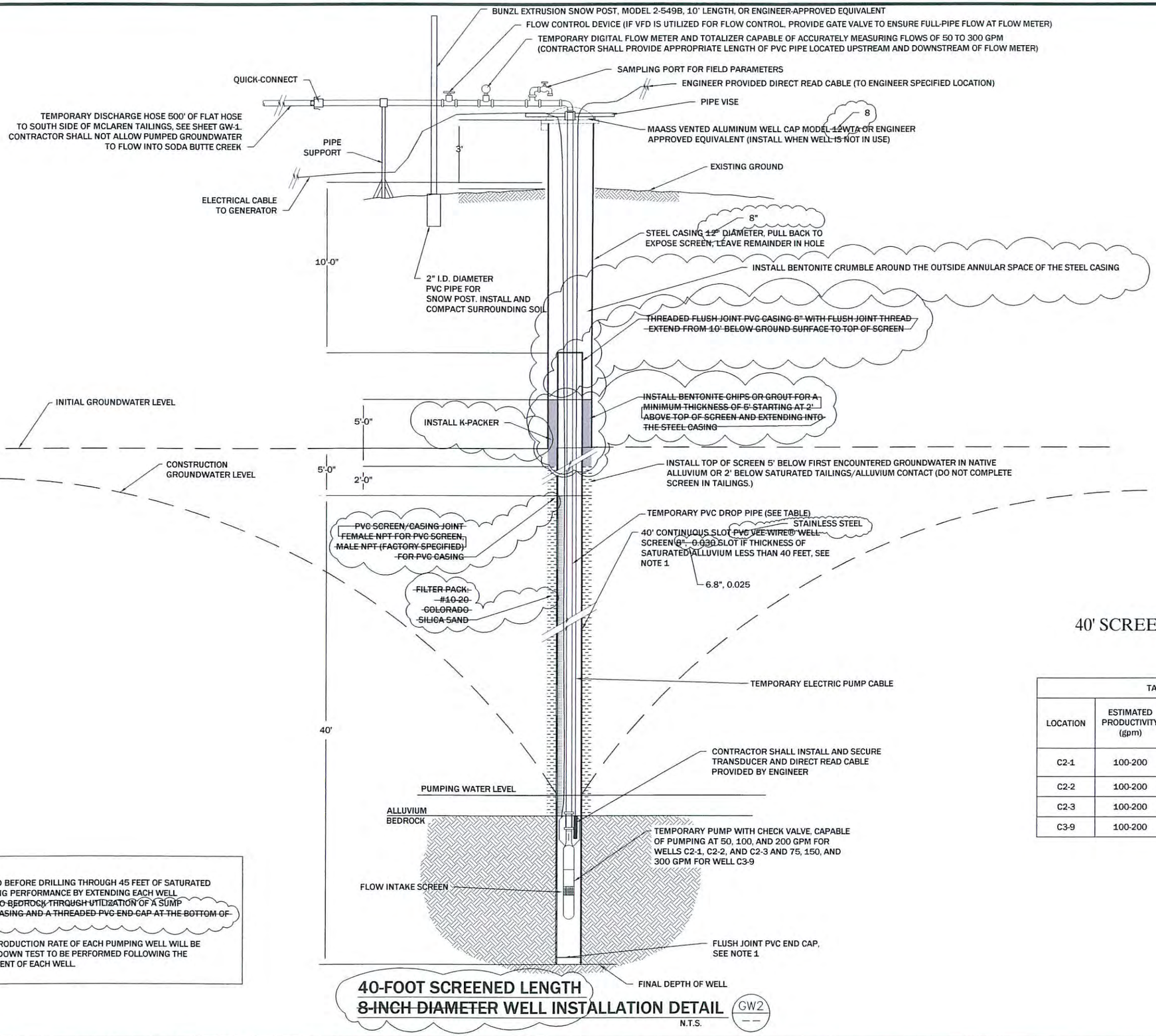


TABLE GWD-2			
LOCATION	ESTIMATED PRODUCTIVITY (gpm)	APPROXIMATE DEPTH FROM GROUND SURFACE (ft)	DROP PIPE DIA. (in)
C2-1	100-200	70-80	3
C2-2	100-200	70-80	3
C2-3	100-200	70-80	3
C3-9	100-200	70-80	3-4

NOTES:

1. IF BEDROCK IS ENCOUNTERED BEFORE DRILLING THROUGH 45 FEET OF SATURATED ALLUVIUM, MAXIMIZE PUMPING PERFORMANCE BY EXTENDING EACH WELL APPROXIMATELY 10 FEET INTO BEDROCK THROUGH UTILIZATION OF A SUMP CONSTRUCTED WITH 8" PVC CASING AND A THREADED PVC END CAP AT THE BOTTOM OF THE PVC SUMP.
2. VERIFICATION OF GENERAL PRODUCTION RATE OF EACH PUMPING WELL WILL BE ESTIMATED BY A STEP-DRAWDOWN TEST TO BE PERFORMED FOLLOWING THE COMPLETION AND DEVELOPMENT OF EACH WELL.

40-FOOT SCREENED LENGTH 8-INCH DIAMETER WELL INSTALLATION DETAIL

N.T.S.

GW2

REVISION

DATE:	BY:	DESC:
9/2/09	MCB	MODS TO BID PACKAGE

DRAWN BY: SKL
DESIGNED BY: MWB
CHECKED BY: JSM
APPROVED BY: MWB
PROJECT NO: 10140
DATE: ~~9/21/09~~ 9/03/09

DISPLAYED AS:
COORD SYS/ZONE: NA
DATUM: NA
UNITS: FEET
SOURCE: PIONEER

SCALE IN FEET
0 N.T.S.

MDEQ/MWCB
MCLAREN TAILINGS ABANDONED MINE
SITE PUMPING WELL INSTALLATION

TYPICAL 8-INCH DIAMETER PUMPING WELL DETAILS

PIONEER
TECHNICAL SERVICES, INC.
63-1/2 WEST BROADWAY
BUTTE, MONTANA 59702
(406) 782-5177

SHEET GWD-2 AB

APPENDIX F

WELL LOGS AND ABANDONED BOREHOLES LOGS

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C1-1
Location: — Date: 9/11 - 9/12 — Time Start/Finish: 1510/0900
Driller: Larry — Drilling Company: O'Keefe
Drilling Method: Air Rotary
Depth to Water: 11[B] bgs on 9/12/09 — Logged By: Will Goldberg

Soil Boring Log

0 — Silt, brown, damp — ML

5

10 — 12' Bottom Steel*

Silty sand with some gravel moist to wet

15

Dolomitic Limestone gray, dry

20

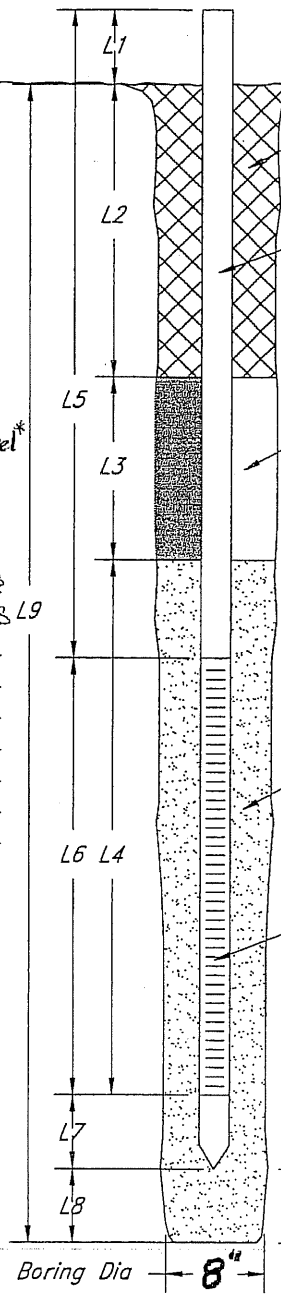
25

30 — 32' TD

PID READING (PPM)

Well Type:

L1 = 1.8' / 2' MSB
L2 = N/A ~~12'~~ MSB
L3 = N/A
L4 = N/A
L5* = 13.8'
L6 = 20.0'
L7 = 0.2'
L8 = 0.0'
L9 = 32.0'



Ground elev.=
TOC elev.=
Backfill/Grout Type: BENTONITE CRUMBLES
Casing Type/Size/Dia.: 8" I.D. 0.395 WALL STEEL
Seal elev.= N/A
Seal Type: N/A
Filter Pack elev.= N/A
Top of Screen elev.=
Filter Pack Type/Size: NATURALLY DEVELOPED FOR 4 HRS. OR 5 NTU
Screen Type/Size/Dia: 0.025 SLOT V-WIRE® W/ 6.8" I.D. STAINLESS
Bottom of Well elev.=
Bottom of Boring elev.=

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C1-2

Location: _____ Date: _____ Time Start/Finish: _____

Driller: Larry Drilling Company: O'Keefe

Drilling Method: Air Rotary

Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

0 — Silty Soil with wood Fragments moist

ML

5

10

15 — Sand and gravel

SP-GP ~~wet~~ moist

20 — Gray to dark gray dolomitic limestone

25

30

33' TD

PID READING (PPM)

Well Type:

Ground elev.= _____

TOC elev.= _____

Backfill/Grout Type _____
BENTONITE CRUMBLES

Casing Type/Size/Dia. _____
8" I.D. 0.395 WALL STEEL

Seal elev.= N/A

Seal Type N/A

Filter Pack elev.= N/A

Top of Screen elev.=

Filter Pack Type/Size _____
NATURALLY DEVELOPED FOR 4 HRS OR 5 NTU

Screen Type/Size/Dia _____
0.025 SLOT V-WIRE®
6.8" I.D. STAINLESS

Bottom of Well elev.=

Bottom of Boring elev.=

9.3 Top Screen Seal

12 Bottom Steel Casing

32' Bottom Screen

L1= 1.9'
L2= ~~12~~ 0.0 N/A
L3= N/A
L4= N/A
L5= 13.9'
L6= 20.0'
L7= 0.2'
L8= 1.0'
L9= 33.2'

L1 L2 L3 L4 L5 L6 L7 L8 L9

Boring Dia — 8"

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C1-3
Location: _____ Date: 9/12/09 Time Start/Finish: 0930
Driller: Larry Drilling Company: _____
Drilling Method: Air Rotary
Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

0 — Sand, silty dry SM

5 — Sand with some silt & gravel, moist SP

10

15

18' — Silt, moist, slightly cohesive ML

20

25

30 — Sand and gravel, wet SP-GP

Bedrock, Dolomitic Limestone, greenish gray, moist

PID READING (PPM)

Well Type: _____

L1 = 1.6' ~~2'~~ MSB
L2 = ~~N/A 18'~~ MSB
L3 = N/A
L4 = N/A
L5* = 19.6'
L6 = 20.0'
L7 = 0.2'
L8 = 0.0'
L9 = _____

15 Top Screen

Ground elev.= _____
TOC elev.= _____
Backfill/Grout Type BENTONITE CRUMBLES
Casing Type/Size/Dia. 8" ~~SCH~~ MWS I.D. 0.375 WALL STEEL
Seal elev.= N/A
Seal Type N/A
Filter Pack elev.= N/A
Top of Screen elev.= _____
Filter Pack Type/Size NATURALLY DEVELOPED FOR 4 HRS. OR 5 NTU.
Screen Type/Size/Dia 0.025 SLOT V-WIRE 6.8" I.D. STAINLESS
Bottom of Well elev.= _____
Bottom of Boring elev.= _____

TD 38'
Boring Dia 8"

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: Mclaren — Soil Boring/Well Number: CI-4 1

Location: — Date: 9/11/09 — Time Start/Finish: 7:30 / 11:30

Driller: Larry — Drilling Company: O'Keefe

Drilling Method: Air Rotary

9.05 bgs @ 1200 9/11/09

Depth to Water: 9.62 Top Casing on 9/12/09 — Logged By: Will Goldberg

Soil Boring Log

PID READING (PPM)

0
Sand and gravel
brown, damp
SP-GP
5
Silty sand, moist
slightly cohesive
SM
10
15
Sand & fine gravel
SP-GP wet
SP-GP
20
Bedrock, Dolomitic
Limestone dark gray
to bluish gray
25
30
Bottom of Screen
33 TD

Well Type:

9.3 Top Screen

11' Bottom of steel casing

L1 = 1.9
L2 = N/A MSB
L3 = N/A
L4 = N/A
L5 = 12.3 MSB
L6 = 20.0
L7 = 0.2
L8 = 1.8
L9 = 33.0

31.2'

Ground elev. =
TOC elev. =

Backfill/Grout Type
BENTONITE CRUMBLES

Casing Type/Size/Dia.
8" I.D. 0.375 WALL STEEL

Seal elev. = N/A

Seal Type N/A

Filter Pack elev. = N/A

Top of Screen elev. =

Filter Pack Type/Size
NATURALLY DEVELOPED FOR
4 HRS. OR 5 N.T.U.

Screen Type/Size/Dia
0.025 WALL V-WIRE®
6.8" I.D. STAINLESS

Bottom of Well elev. =

Bottom of Boring elev. =

Boring Dia 8"

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C2-1
Location: Cooke City Date: 9/16/2009 Time Start/Finish: 0950/1505
Driller: Larry Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary
Depth to Water: Logged By: Mike Bonham

Soil Boring Log

Depth	Soil Boring Log	PID-MW-3 READING (PPM)
0	SANDY SILT W/ MINOR ORGANICS	
	SANDY SILT, LT. BROWN, 20% GRAVEL, 20% SAND, 60% SILT	
5	SANDY SILT, MINOR BIOTITE (2%), SAND (30%), SILT (<70%)	
	SANDY SILT, LT. BROWN. SAND (20%) SILT (80%)	
10	SANDY SILT W/ MINOR MICA (2%), SAND (20%) SILT (80%)	
	SILTY SAND W/ MINOR GRAVEL (5%), SAND (50%), SILT (45%)	
	SILTY SAND W/ MINOR GRAVEL (10%), SILT (40%) SAND (50%)	
15	GRAVELLY SILTY SAND W/ MINOR TAILINGS (5%) W/ PYRITE GRAVEL (20%), SAND (50%), SILT (30%)	
	SANDY GRAVEL, BROWN,	
20	SILTY SAND W/ MINOR GRAVEL (10%), MINOR CLAY (2%), SILT (35%), SAND (<60%), DAMP	
	SILTY SAND W/ MINOR GRAVEL (5%, SEMI-ROUNDED), MINOR CLAY (<2%) DAMP	
25	SILTY, SANDY GRAVEL W/ MINOR ORGANICS (2%), DK. BROWN, SILT (30%) SAND (20%) GRAVEL (<50%) DAMP	
	SILTY SAND AND GRAVEL, DK. BROWN, DAMP GRAVEL (30%, SEMI-ROUNDED) SILT (30%) SAND (40%)	
	SILTY SAND W/ MINOR GRAVEL, LT. BROWN, DAMP	
30	SILTY SAND W/ MINOR GRAVEL, DK. BROWN. WATER	30.0'
	ANGULAR GRAVEL W/ MINOR FINES DK. GRAY, WET. LIKELY BASE OF DIKE	32.5'
	~~ROUNDED GRAVEL, W/ MINOR, WET~~	MW3

Well Type:

L1 = 1.9'
L2 = N/A
L3 = N/A
L4 = N/A
L5 = 34.4'
L6 = 40.0'*
L7 = 0.2'
L8 = 0.0'
L9 = 73.0'

Ground elev.=
TOC elev.=
Backfill/Grout Type BENTONITE CRUMBLES
Casing Type/Size/Dia. 8" 0.375 WALL STEEL
Seal elev.= N/A
Seal Type N/A
Filter Pack elev.= N/A
Top of Screen elev.=
Filter Pack Type/Size NATURALLY DEVELOPED
Screen Type/Size/Dia 6.5" 0.025 SLOT STAINLESS U-WIRE
Bottom of Well elev.=
Bottom of Boring elev.=
Boring Dia 0.7

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C2-1

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

PID READING (PPM)

35 — 34-36' SEMI-ANGULAR/SEMI-ROUNDED GRAVEL, WET LIKELY BASE OF DIKE

ROUNDED GRAVEL, 1" MINUS, WET. LIKELY BASE OF DIKE

SANDY GRAVEL, SEMI-ROUNDED, NATIVE, WET

40 —

ANGULAR TO SEMI-ROUNDED SAND AND GRAVEL WITH MINOR SILT (2%), SIGNIFICANT WATER.

45 —

50 —

55 —

60 —

BEDROCK, DARK BLUISH GRAY.

65 — HCL (0.01)

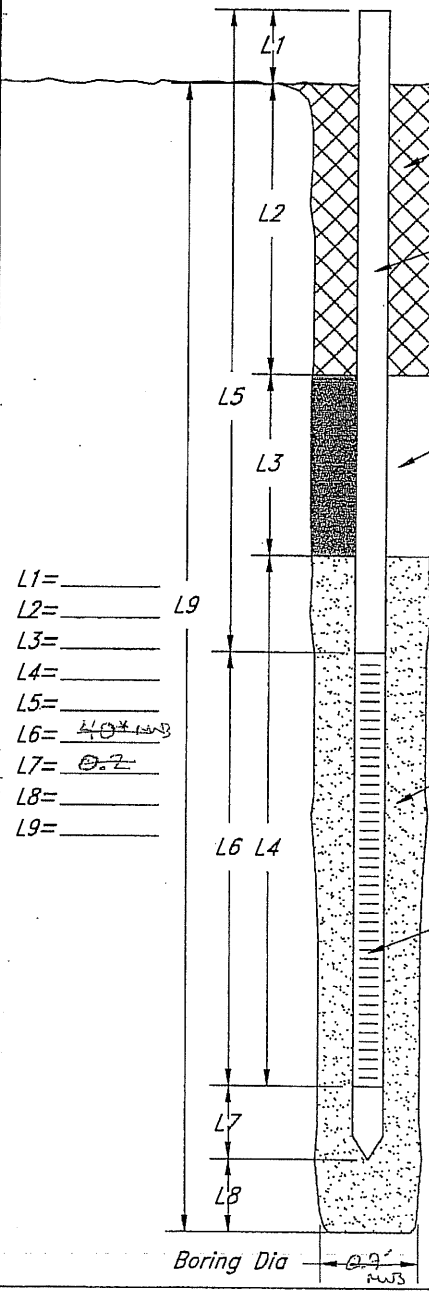
LARGER PIECES: NO FIZZ

SMALLER " : MED FIZZ

VERY SIMILAR TO BEDROCK AT OTHER LOCATIONS.

Well Type: _____

L1 = _____
L2 = _____
L3 = _____
L4 = _____
L5 = _____
L6 = ~~40*~~ MW3
L7 = ~~0.7~~
L8 = _____
L9 = _____



Ground elev.= _____
TOC elev.= _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev.= _____
Seal Type _____
Filter Pack elev.= _____
Top of Screen elev.= _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev.= _____
Bottom of Boring elev.= _____

Remarks: LARRY INDICATED PRODUCTIVITY AT APPROXIMATELY 75 GPM.

* ZERO WRAP SECTION ON THIS PORTION OF SCREEN (TOP) WAS MORE LIKE 0.012 SLOT, EFFECTIVELY ADDING ANOTHER 2' OF SCREEN

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C2-1

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

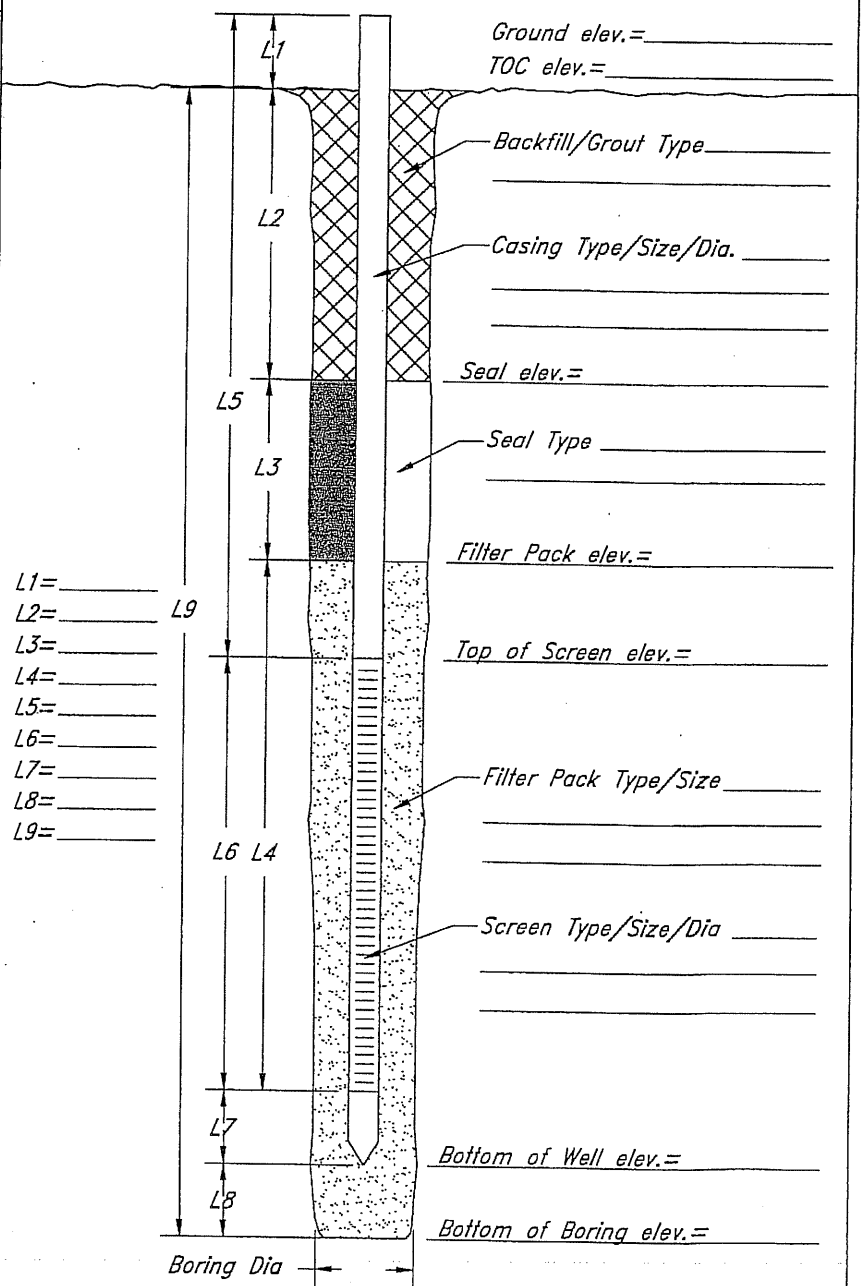
70

TD=72.5

75

BIP READING (PPM)

Well Type: _____



Ground elev.= _____

TOC elev.= _____

Backfill/Grout Type _____

Casing Type/Size/Dia. _____

Seal elev.= _____

Seal Type _____

Filter Pack elev.= _____

L1= _____
L2= _____
L3= _____
L4= _____
L5= _____
L6= _____
L7= _____
L8= _____
L9= _____

Top of Screen elev.= _____

Filter Pack Type/Size _____

Screen Type/Size/Dia _____

Bottom of Well elev.= _____

Bottom of Boring elev.= _____

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: CZ-2
Location: Cooke City Date: 9/17/2009 Time Start/Finish: 0635/1400
Driller: Larry Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary (724 HP)
Depth to Water: Logged By: Mike Bardwin

Soil Boring Log

0 — COVER SOIL SILTY SAND, LT. BROWN, USED SIMILAR TO OTHER SAND ON SITE. SAND (65%) SILT (35%)

TAILINGS, DARK GREY. HIGH CLAY CONTENT, ROLLS TO 1/8" TO 1/16", VERY STICKY

5

10

15

20

25

30

GRAVEL, ROUNDED TO SEMI-ROUNDED, 2" MINUS. NO WATER, GRAVELS ARE

PID READING (PPM)

Well Type: Downhole

L1= 1.9'
L2= N/A
L3= N/A
L4= N/A
L5= 32.2'
L6= 40.0'
L7= 0.2'
L8= 0.0'
L9= 70.3'

27.8'

30.3'

Boring Dia 0.9'

Ground elev.=
TOC elev.=
Backfill/Grout Type BENTONITE CRUMBLES
Casing Type/Size/Dia. 8" I.D. ~~0.0375~~ 0.375 WALL MWB STEEL
Seal elev.= N/A
Seal Type N/A
Filter Pack elev.= N/A
Top of Screen elev.=
Filter Pack Type/Size NATURAL FILTER PACK
Screen Type/Size/Dia 6.8" I.D. 0.025 SLOT STAINLESS U-WIRE®
Bottom of Well elev.=
Bottom of Boring elev.=

Remarks: SCREEN COMPLETED FROM 30.3' TO 70.3', TOP OF K-PACKER AT 27.8', AND BOTTOM OF STEEL CASING AT 30.3'

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C2-2

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

35 — COVERED IN TAILINGS, IN-SITU OR FROM CYCLONE?

40 — ROUNDED TO SEMI-ANGULAR SANDS AND GRAVELS (2"-), SIGNIFICANT WATER

45

50

55

60

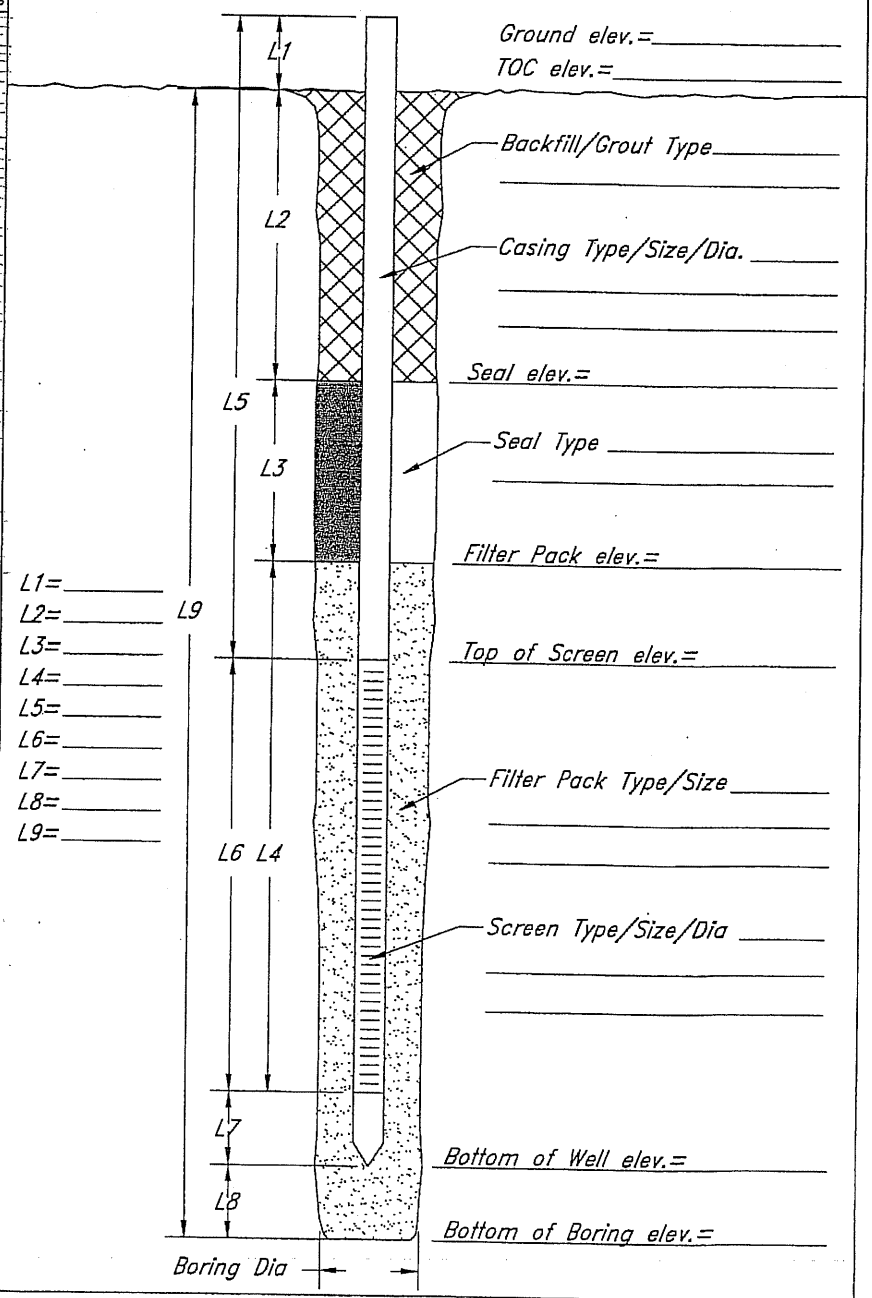
65 — BEDROCK, BLUISH GRAY METAMORPHOSED DOLOMITE, AS WITH OTHER BEDROCK WELLS. SOME WATER

70 — TD 70'4" (70.3')

PID READING (PPM)

Well Type: _____

L1 = _____
L2 = _____
L3 = _____
L4 = _____
L5 = _____
L6 = _____
L7 = _____
L8 = _____
L9 = _____



Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C2-3
Location: Cooke City — Date: 9/17/2009 — Time Start/Finish:
Driller: Larry — Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary (24 HD)
Depth to Water: — Logged By: Mike Bordeaux

Soil Boring Log

0 — COVER SOIL 0-2 SILTY SAND, LT. BROWN, U. UNIFORM W/ MINOR GRAVEL (15%)

DARK GREY TAILINGS W/ PYRITE FLAKES, STICKY

5

10

15

20

SILTY GRAVEL W/ MINOR CLAY (2%) FINES ROLL TO 1/16". GRAVEL IS SEMI-ANGULAR TO ANGULAR, SILT IS MED. BROWN, BOTTOM 5' (35-40') OF 2ND CASING IS WET, W/ MINOR WATER AT TOP OF CASING & NONE AT CYCLONE.

25

30

PID SCREENING (PPM)

Well Type: Dewatering

L1	1.9'
L2	N/A
L3	N/A
L4	N/A
L5	20.4'
L6	40.0'
L7	0.2
L8	21.5'
L9	80.0'
	16' K-PACKER
	18.5' +

Ground elev.=
TOC elev.=
Backfill/Grout Type BENTONITE CRUMBLES
Casing Type/Size/Dia. 8" ID 0.375 MWB 0.375 WALL STEEL
Seal elev.= N/A
Seal Type N/A
Filter Pack elev.= N/A
Top of Screen elev.=
Filter Pack Type/Size NATURAL FILTER PACK
Screen Type/Size/Dia 6.8" I.D. 0.025 SLOT STAINLESS J-WIRE®
Bottom of Well elev.=
Bottom of Boring elev.=
Boring Dia

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C2-3

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

35
40
45
50
55
60
65

CLEAN SANDY GRAVEL, SEMI-ROUNDED W/ MINOR SILT (2%), SAND (25%), GRAVEL (<75%), SOME WATER

HNU READING (PPM)

40' BOTTOM OF STEEL CASING.

L1=
L2=
L3=
L4=
L5=
L6=
L7=
L8=
L9=
58.5'+

Well Type: _____

L1 L2 L3 L4 L5 L6 L7 L8 L9

Ground elev.= _____

TOC elev.= _____

Backfill/Grout Type _____

Casing Type/Size/Dia. _____

Seal elev.= _____

Seal Type _____

Filter Pack elev.= _____

Top of Screen elev.= _____

Filter Pack Type/Size _____

Screen Type/Size/Dia _____

Bottom of Well elev.= _____

Bottom of Boring elev.= _____

Boring Dia

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C2-3

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

PID SCREENING (PPM) MW3

70

SEE ABOVE

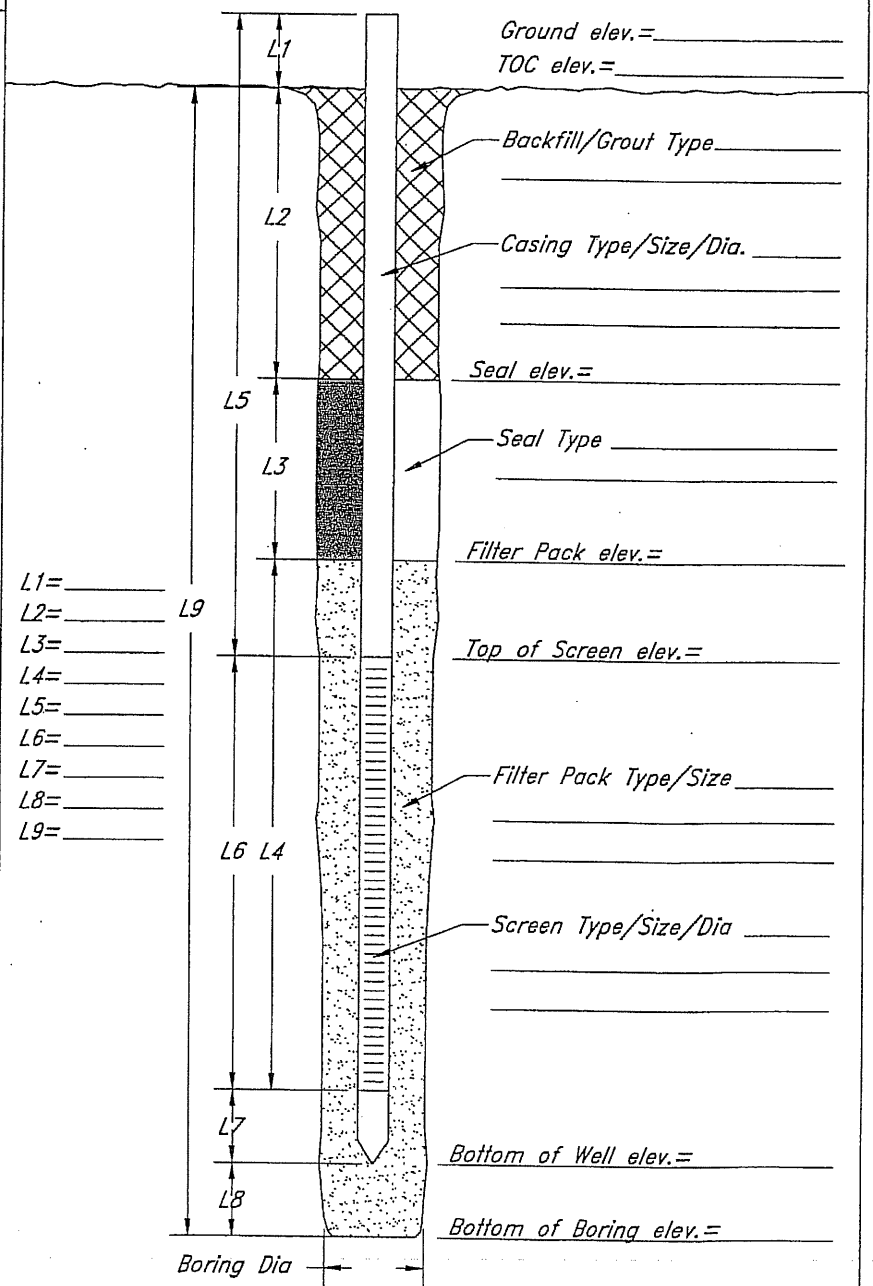
75

80

BEDROCK*

TD = 80'

Well Type: _____



Ground elev.= _____

TOC elev.= _____

Backfill/Grout Type _____

Casing Type/Size/Dia. _____

Seal elev.= _____

Seal Type _____

Filter Pack elev.= _____

L1= _____
L2= _____
L3= _____
L4= _____
L5= _____
L6= _____
L7= _____
L8= _____
L9= _____

Top of Screen elev.= _____

Filter Pack Type/Size _____

Screen Type/Size/Dia _____

Bottom of Well elev.= _____

Bottom of Boring elev.= _____

Remarks: * NO BEDROCK CHIPS WERE OBSERVED AS MINIMAL DRILLING INTO BEDROCK WAS CONDUCTED.

† SCREEN ORIGINALLY SET AT 80' (40-80'), HEAVING SANDS PUSHED SCREEN TO 58.5

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C3-1
Location: Cooke City — Date: — Time Start/Finish: 0710 TO 0930
Driller: Larry — Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary
Depth to Water: — Logged By: Mike Bordwin

Soil Boring Log

	P.I.D. Reading (ppm)
LARGE BOULDER	0.3
DK. GRAY TAILINGS, NO VISIBLE PYRITE FLAKES	
SILTY SAND TO SILTY GRAVEL WASTE ROCK, REDDISH TO GRAYISH BROWN	
SANDY GRAVEL, ONE BOULDER @ 1.5' DIA.	
SILTY, SANDY GRAVEL	
SILTY SAND AND GRAVEL, WASTE ROCK	
CLEAN GRAVEL, MINOR WATER	
SILTY GRAVEL, LT. BROWN, DAMP W/ NO WATER	

0 5 10 15 20 25 30

3.4 3

Well Type: Downhole

L1= 2.2'
L2= N/A
L3= N/A
L4= N/A
L5= 39.2'
L6= 20.0
L7= 0.2
L8=
L9= 57.6'

Ground elev.=
TOC elev.=
Backfill/Grout Type: BENTONITE CRUMBLES
Casing Type/Size/Dia.: 8", 0.375 WALL
Seal elev.= N/A
Seal Type
Filter Pack elev.=
Top of Screen elev.=
Filter Pack Type/Size
Screen Type/Size/Dia
Bottom of Well elev.=
Bottom of Boring elev.=
Boring Dia

Remarks:

Signature:

4/2

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: CB-1

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

PID READING (PPM)

35 — SEE ABOVE

40 — ANGULAR GRAVEL W/ MINOR SAND AND SILT, WATER

45 — SAND AND GRAVEL, WATER

ROUNDED GRAVELS, MINOR SILT, EASY DRILLING, MORE WATER

50

SEMI-ROUNDED SAND AND GRAVEL, CLEAN, LOTS OF WATER

55

TD = 57'

60

Well Type: _____

37°

L1 = _____
L2 = _____
L3 = _____
L4 = _____
L5 = _____
L6 = ~~20.0~~ MW3
L7 = ~~0.2~~ MW3
L8 = _____
L9 = ~~57'~~ MW3

Ground elev. = _____
TOC elev. = _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev. = _____
Seal Type _____
Filter Pack elev. = _____
Top of Screen elev. = _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev. = _____
Bottom of Boring elev. = _____

Boring Dia

Remarks: EARLY ESTIMATED ~100 GPM WITH AIR ON OPEN HOLE AT 55 TO 57' BGS.

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C3-2
Location: Cooke City — Date: 9/15/2009 — Time Start/Finish: 1410/1700
Driller: Larry — Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary
Depth to Water: — Logged By: Mike Bordua

Soil Boring Log

PID Reading (ppm):

0 — SILTY SAND WITH PYRITE, MED GRAY (WASTE ROCK)

SILTY SAND, REDDISH BROWN W/ PYRITE (WASTE ROCK)

5

10

15

SILTY SAND, LT. TAN W/ MICA FLAKES OR PYRITE, MINOR WASTE ROCK

SILTY SAND, REDDISH TAN W/ MICA OR PYRITE (WASTE ROCK) DAMP @ 20', LIKELY CREEK INFLUENCE

20

SILTY SAND, LT. BROWN

25

SILTY GRAVEL ~ 60% GRAVEL, 1/2"-3/4" WITH W/ FINE SILT MATRIX, 20% SAND.

30

34'

Well Type:

L1 = Ground elev. =
TOC elev. =
L2 = Backfill/Grout Type
Casing Type/Size/Dia.
L5 = Seal elev. =
L3 = Seal Type
Filter Pack elev. =
L1 =
L2 =
L9 =
L3 = Top of Screen elev. =
L4 =
L5 =
L6 =
L7 =
L8 =
L9 =
Filter Pack Type/Size
L6 L4 = Screen Type/Size/Dia
L7 = Bottom of Well elev. =
L8 = Bottom of Boring elev. =
Boring Dia

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

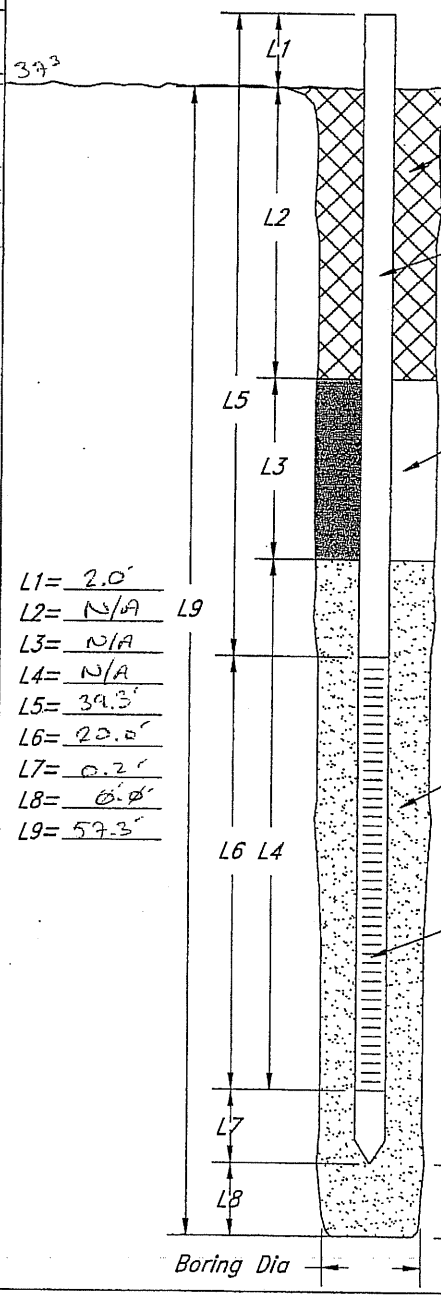
Project: _____ Soil Boring/Well Number: CB-2
Location: _____ Date: _____ Time Start/Finish: _____
Driller: _____ Drilling Company: _____
Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

	PID READING (PPM)
35 — SEE ABOVE	
40 — SILTY GRAVELS, LT. BROWN, ANGULAR TO SEMI-ROUNDED WATER AT 43'	
45 — SILTY GRAVEL, ANGULAR	
50 — SILTY GRAVEL, SMALLER (¼" - ½") GRAVEL, ANGULAR TO SUB-ANGULAR.	
55 — NW3	
TD = 57'4" (57.3')	
60	

Well Type:



Ground elev.= _____
TOC elev.= _____
Backfill/Grout Type 3 BAGS BENTONITE CRUMBLES
Casing Type/Size/Dia. 8" 0.375 WALL
Seal elev.= N/A
Seal Type N/A
Filter Pack elev.= N/A
Top of Screen elev.= _____
Filter Pack Type/Size NATURALLY COMPLETED
Screen Type/Size/Dia 6.8" O.D. 0.025 SLOT
Bottom of Well elev.= _____
Bottom of Boring elev.= _____

L1= 2.0'
L2= N/A
L3= N/A
L4= N/A
L5= 39.3'
L6= 20.0'
L7= 0.2'
L8= 0.0'
L9= 57.3'

Remarks: SCREEN SEATED RIGHT ON THE BOTTOM OF THE HOLE, NO HEAVAGE SANDS.

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C3-3
Location: Cooke City — Date: 9/15/09 — Time Start/Finish: ____
Driller: Larry — Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary
Depth to Water: ____ — Logged By: Mike Bordwin

Soil Boring Log

		PID READING (PPM)
0	SILTY SAND, SOME WOOD DEBRIS	
5	SANDY SILT	
	RED-STAINED SILTY GRAVEL W/ U. MINOR CLAY (WASTE ROCK)	
10	SILTY SAND W/ 20% GRAVEL	
	GRAVEL, LT. PURPLE, ANGULAR - BOULDER?	
15	SILTY SAND, LT. TAN, MINOR RED STAINING	
20		
	SILTY GRAVEL W/ MINOR CLAY, REDDISH BROWN, DAMP.	
25		
30		
	33.9	

Well Type: Dewatering

L1= 1.9'
L2= N/A
L3= N/A
L4= N/A
L5= ~~35.8~~ 38.2'
L6= 20.0'
L7= 0.2'
L8= 0.7'
L9= 57.0'

Ground elev.= ____
TOC elev.= ____
Backfill/Grout Type ____
Casing Type/Size/Dia. ____
Seal elev.= ____
Seal Type ____
Filter Pack elev.= ____
Top of Screen elev.= ____
Filter Pack Type/Size ____
Screen Type/Size/Dia ____
Bottom of Well elev.= ____
Bottom of Boring elev.= ____
Boring Dia

Remarks: ____

Signature: ____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C3-3
Location: _____ Date: _____ Time Start/Finish: _____
Driller: _____ Drilling Company: _____
Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

35 — ~SEE ABOVE~

40 — CLEAN GRAVELS, WATER, MINOR SILT

45 — LARGER GRAVELS w/ SAND, WATER.

50

55 — TD = 57'

PID READING (PPM)

36.3'

56.3'

Well Type: _____

L1 = _____
L2 = _____
L3 = _____
L4 = _____
L5 = _____
L6 = ~~20.0'~~ MB
L7 = ~~0.2'~~ MB
L8 = ~~0.7'~~ MB
L9 = ~~57.0'~~ MB

L1 L2 L3 L4 L5 L6 L7 L8 L9

Ground elev. = _____
TOC elev. = _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev. = _____
Seal Type _____
Filter Pack elev. = _____
Top of Screen elev. = _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev. = _____
Bottom of Boring elev. = _____
Boring Dia

Remarks: 5 BAGS OF BENTONITE UTILIZED IN ANNULAR SPACE BETWEEN 8" STEEL CASING AND SURROUNDING SOIL.

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

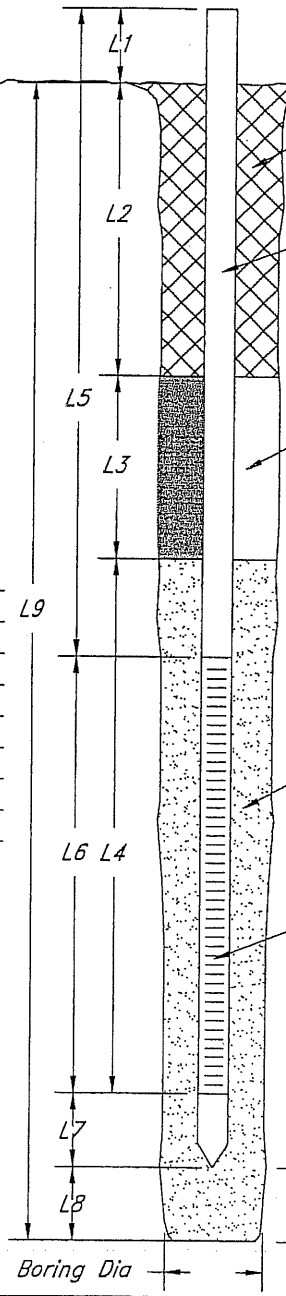
SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C3-4
Location: McLaren Tailings Abandoned Date: 9-15-2009 Time Start/Finish: 1400-1700
Driller: Harry Drilling Company: O'Keefe
Drilling Method: Dual air rotary
Depth to Water: Logged By: Mike Bordwin

Soil Boring Log	PID READING (PPM)
0 — Topsoil,	
DARK GREY SILTY MATERIAL W/ MICA &/OR PYRITE - TAILINGS?	
5	
SANDY SILT, LIGHT BROWN	
10	
SANDY GRAVEL	
15	
SANDY GRAVEL W/ SILT	
20	
25	
SANDY GRAVEL W/ SILT & CLAY	28.3
30	
SANDY GRAVEL, CLEAN	31

Well Type: Dewatering

L1 = 1.9'
L2 = N/A
L3 = N/A
L4 = N/A
L5 = 32.9'
L6 = 20.0'
L7 = 0.2'
L8 = 4.0'
L9 = 55.0'



Ground elev.=
TOC elev.=
Backfill/Grout Type Bentonite Crumbles
Casing Type/Size/Dia. 8" 0.375 wall
Seal elev.= N/A
Seal Type N/A
Filter Pack elev.= N/A
Top of Screen elev.=
Filter Pack Type/Size N/A
Screen Type/Size/Dia V-WIRE 0.025 STAINLESS
Bottom of Well elev.=
Bottom of Boring elev.=

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: Mehaffey Soil Boring/Well Number: CB-4
Location: Cooke City Date: Time Start/Finish:
Driller: Drilling Company:
Drilling Method:

Depth to Water: Logged By:

Soil Boring Log

PID READING (PPM)

35
SILTY GRAVEL, WET
40
VERY EASY DRILLING
45
GRAVEL w/ FINES
50
MORE FINES & WATER
VERY EASY DRILLING
~15GPM, HEAVED 6 FT.
55
TD

Well Type:

Ground elev.=
TOC elev.=
Backfill/Grout Type
Casing Type/Size/Dia.
Seal elev.=
Seal Type
Filter Pack elev.=
Top of Screen elev.=
Filter Pack Type/Size
Screen Type/Size/Dia
Bottom of Well elev.=
Bottom of Boring elev.=

L1=
L2=
L3=
L4=
L5=
L6=
L7=
L8=
L9=

Boring Dia

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C3-5
Location: — Date: 9/14/09 — Time Start/Finish: 1025/1300
Driller: Larry — Drilling Company: O'Keefe
Drilling Method: Dual air rotary
Depth to Water: — Logged By: Will Goldberg

Soil Boring Log

0 — Fill, gravel & cobbles

5 — Silt, dry, brown ML

Silt, moist, some ? pyrite tailings ML

10 — Sand and gravel damp SP-GP

15 — Large Boulder

Sand, well graded, damp, brown SP

20 — Sand, fine grained damp, brown SP

25 — Sand, gravelly, damp brown SP-GP

Gravel, sandy, damp, brown GP

30

PID READING (PPM)

Well Type:

L1= 1.7'
L2= N/A
L3= N/A
L4= N/A
L5= 31.7'
L6= 20.0'
L7= 0.2'
L8= 0.0'
L9= 50.0'

29.6 BOTTOM STEEL

30.0' TOP SCREEN

Ground elev.=
TOC elev.=
Backfill/Grout Type
Casing Type/Size/Dia.
Seal elev.=
Seal Type
Filter Pack elev.=
Top of Screen elev.=
Filter Pack Type/Size
Screen Type/Size/Dia
Bottom of Well elev.=
Bottom of Boring elev.=
Boring Dia

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C3-5
Location: Date: Time Start/Finish:
Driller: Drilling Company:
Drilling Method:

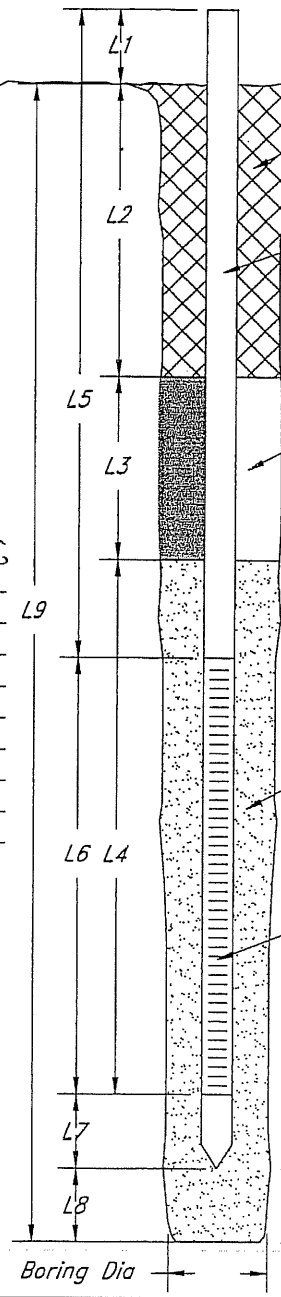
Depth to Water: Logged By:

Soil Boring Log

PID READING (PPM)

35
Gravel, sandy, some silt, moist GP
40
Gravel, subangular wet GP
Gravel, coarse, well to sub rounded, wet GP
45
Gravel, fine, wet subangular to subrounded GP
50

Well Type:



L1=
L2=
L3=
L4=
L5=
L6=
L7=
L8=
L9=

Ground elev.=
TOC elev.=
Backfill/Grout Type
Casing Type/Size/Dia.
Seal elev.=
Seal Type
Filter Pack elev.=
Top of Screen elev.=
Filter Pack Type/Size
Screen Type/Size/Dia
Bottom of Well elev.=
Bottom of Boring elev.=

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C3-6
Location: — Date: 9/13/09 - 9/14/09 — Time Start/Finish: 1410 / 0810
Driller: Larry — Drilling Company:
Drilling Method: Dual air rotary
Depth to Water: — Logged By: Will Goldberg

Soil Boring Log

PID READING (PPM)

0 — Fill for Drill Pad

5 — Gravel & Cobbles GP

Silt, wet, dark gray ML

10 — Sand with some gravel, primarily fine to medium sand, damp, light brown SW

15

20 — Gravel, sandy subrounded to subangular, damp GP

25 — Gravel, sandy subangular with some sand produce some water at 27' GP

30

Well Type:

L1 = ~~1.6'~~ 1.6' MB
L2 = N/A
L3 = N/A
L5 = 23.6'
L6 = 20'
L7 = 0.2'
L8 = ~~23.6'~~ 0.0' MB
L9 = 47.0'

Ground elev. =
TOC elev. =
Backfill/Grout Type
Casing Type/Size/Dia.
Seal elev. =
Seal Type N/A
Filter Pack elev. =
Top of Screen elev. =
Filter Pack Type/Size N/A
Screen Type/Size/Dia 0.025 VeeWire® Stainless
Bottom of Well elev. =
Bottom of Boring elev. =
Boring Dia

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C3-6

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

35

Gravel, wet

GP

40

TD 43

45

PID READING (PPM)

Well Type: _____

Ground elev. = _____

TOC elev. = _____

Backfill/Grout Type _____

Casing Type/Size/Dia. _____

42' Bottom Screen

Seal elev. = _____

Seal Type _____

Filter Pack elev. = _____

L1 = _____
L2 = _____
L3 = _____
L4 = _____
L5 = _____
L6 = _____
L7 = _____
L8 = _____
L9 = _____

Top of Screen elev. = _____

Filter Pack Type/Size _____

Screen Type/Size/Dia _____

Bottom of Well elev. = _____

Bottom of Boring elev. = _____

Boring Dia

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren — Soil Boring/Well Number: C3-7
Location: — Date: 9/13/09 — Time Start/Finish: 1010/1300
Driller: Larry — Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary
Depth to Water: — Logged By: Will Goldberg

Soil Boring Log

PID READING (PPM)

0
Sand and Gravel dry SP-GP
5
10
Sand and gravel with some cobbles, damp SP-GP
15
20
Sand, silty SM
Gravel & Cobbles GP
25
Silt, sandy with some clay ML
30

Well Type:

L1 = 2.0'
L2 = N/A
L3 = N/A
L4 = N/A
L5 = 29.0'
L6 = 20.0'
L7 = 0.2'
L8 = 0.0'
L9 = 49.0'

24.3 Top Screen Seal
27 Top Screen Bottom casing

Ground elev. =
TOC elev. =
Backfill/Grout Type
Casing Type/Size/Dia.
Seal elev. =
Seal Type
Filter Pack elev. =
Top of Screen elev. =
Filter Pack Type/Size
Screen Type/Size/Dia
Bottom of Well elev. =
Bottom of Boring elev. =
Boring Dia

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

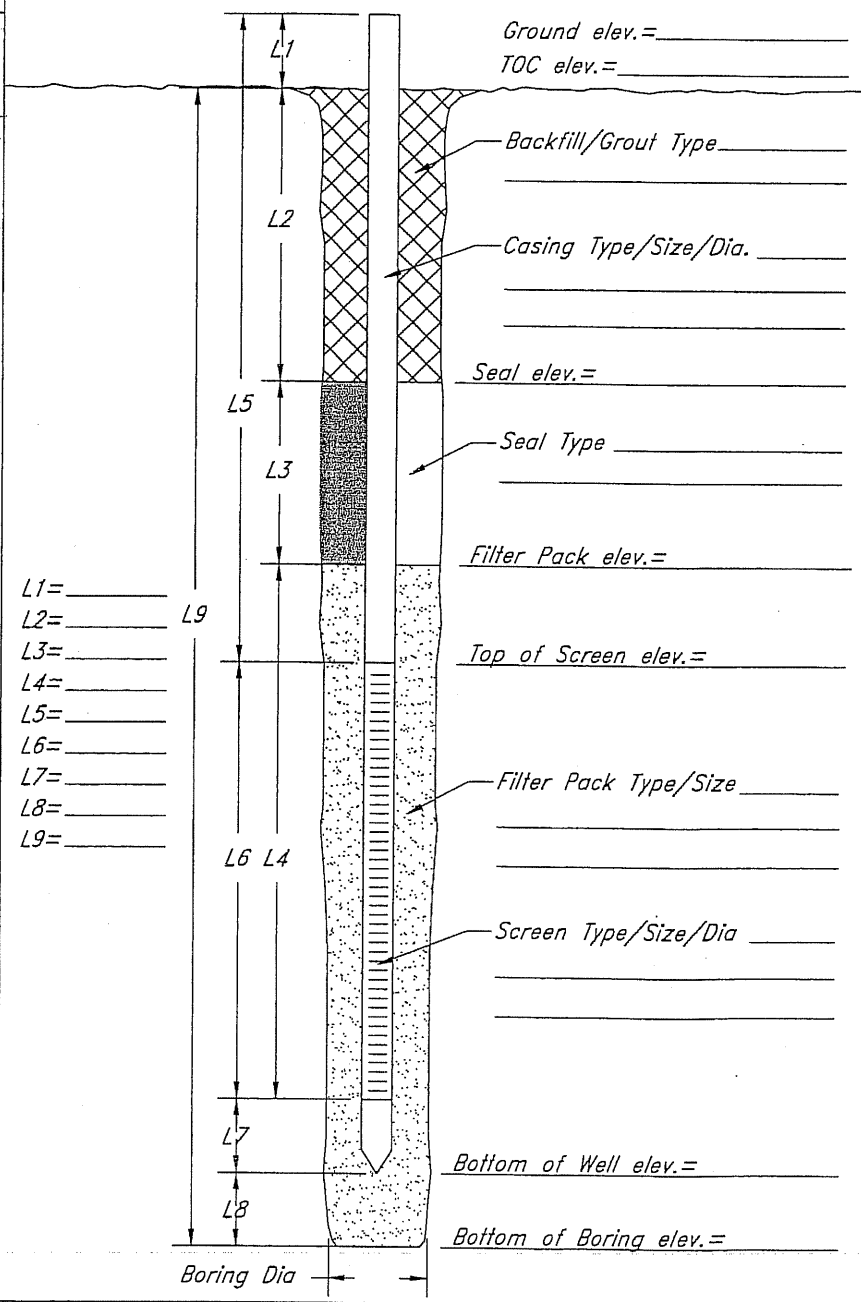
SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C3-7
Location: Date: 9/13/09 Time Start/Finish:
Driller: Larry Drilling Company: O'Keefe
Drilling Method:

Depth to Water: Logged By:

Soil Boring Log	PID READING (PPM)
35 ML clay, wet, cohesive light tan to gray no pyrite CL-ML	
40 Silt and sand ML – SM	
45 TD 47' SP-GP	

Well Type:



L1=
L2=
L3=
L4=
L5=
L6=
L7=
L8=
L9=

Remarks:

Signature:

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: Mc Laren — Soil Boring/Well Number: C3-B
Location: _____ — Date: 12/12/09 - 12/13 — Time Start/Finish: 1650/0900
Driller: Larry — Drilling Company: OKeefe
Drilling Method: Dual air rotary
Depth to Water: _____ — Logged By: Will Goldberg

Soil Boring Log

PID READING (PPM)

0 — Silty, Sand, brown dry ML

5 — Sand, silty, damp brown SM

10 — Sand, silty, damp brown SM

15 — Gravel & cobbles with sand, moist gray GP

20 — Sand, silty with gravel SM

25 — Sand and gravel with silt moist at 25', wet from 30-39 SP - GP

30

Well Type:

148 Top
L1= Screen Seal 1.7'
L2= N/A
L3= N/A
L4= N/A
L5= 18.9'
L6= 20.0'
L7= 0.2'
L8= 1.5'
L9= 39.0'
147.2' TOP SCREEN

L1 L2 L3 L4 L5 L6 L7 L8 L9

Ground elev.= _____
TOC elev.= _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev.= _____
Seal Type _____
Filter Pack elev.= _____
Top of Screen elev.= _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev.= _____
Bottom of Boring elev.= _____
Boring Dia

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C3-8
Location: _____ Date: _____ Time Start/Finish: _____
Driller: _____ Drilling Company: _____
Drilling Method: _____
Depth to Water: _____ Logged By: _____

Soil Boring Log

35

TD 39'

PID READING (PPM)

Well Type: _____

37 ± Bottom Screen

L1
L2
L3
L4
L5
L6
L7
L8
L9

L1= _____
L2= _____
L3= _____
L4= _____
L5= _____
L6= _____
L7= _____
L8= _____
L9= _____

Ground elev.= _____
TOC elev.= _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev.= _____
Seal Type _____
Filter Pack elev.= _____
Top of Screen elev.= _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev.= _____
Bottom of Boring elev.= _____
Boring Dia

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: C3-9
Location: Cooke City Date: 9/14/09-9/15 Time Start/Finish: _____
Driller: ~~O'Keefe~~ Larry Drilling Company: O'Keefe
Drilling Method: Dual Air Rotary
Depth to Water: _____ Logged By: Mike Bordua

Soil Boring Log

0 — SILTY GRAVEL
5
10 — WOOD DEBRIS
SILTY SAND w/ MINOR CLAY
15
SANDY GRAVEL
20
SILTY GRAVEL w/ CLAY, ROCKS TO 1/8"
25
30

AIR REACHING WB (APPX)

Well Type: Dewatering

Ground elev.= _____
TOC elev.= _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev.= _____
Seal Type _____
Filter Pack elev.= _____
Top of Screen elev.= _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev.= _____
Bottom of Boring elev.= _____
Boring Dia

L1= 2.0'
L2= N/A
L3= N/A
L4= N/A
L5= 20.0'
L6= ~~20.0'~~ 40.0'
L7= 0.2'
L8= 0.0'
L9= 59.0'

L1, L2, L3, L4, L5, L6, L7, L8, L9

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: _____ Soil Boring/Well Number: C3-9

Location: _____ Date: _____ Time Start/Finish: _____

Driller: _____ Drilling Company: _____

Drilling Method: _____

Depth to Water: _____ Logged By: _____

Soil Boring Log

35

SEE ABOVE

40

GRAVEL W/ MINOR SILT, ROUNDED UP TO 1½", WET (FIRST WATER)

45

50

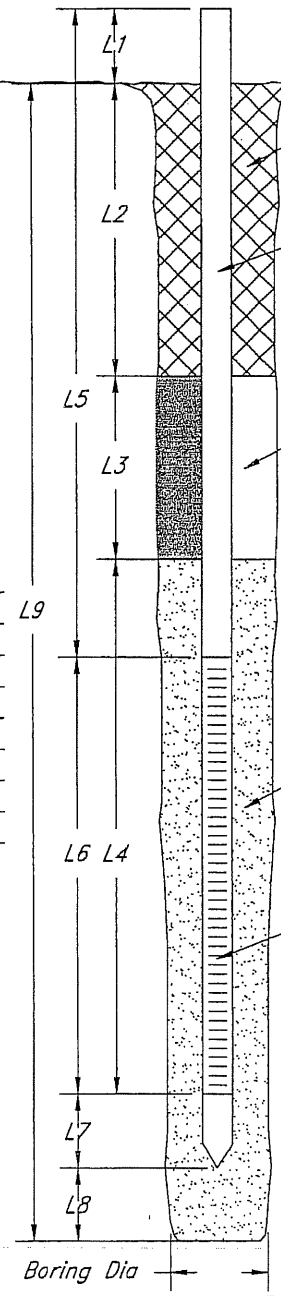
BEDROCK - SIMILAR AS WELLS ALONG SOUTH SIDE - METAMOR PHOSED DOLOMITE? FIZZES MODERATELY WITH ACID. FRACTURE AT 55' WITH SIGNIFICANT WATER AND SEMI-ROUNDED GRAVELS

55

60

Well Type: _____

L1 = _____
L2 = _____
L3 = _____
L4 = _____
L5 = _____
L6 = _____
L7 = _____
L8 = _____
L9 = _____



Ground elev. = _____
TOC elev. = _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev. = _____
Seal Type _____
Filter Pack elev. = _____
Top of Screen elev. = _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev. = _____
Bottom of Boring elev. = _____

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Soil Boring/Well Number: MW-10

Location: _____ Date: 9/11/09 Time Start/Finish: 1200/1450

Driller: Larry Drilling Company: O'Keefe

Drilling Method: Air Rotary

Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

0 — Sand, gravelly, damp SP

5

10 — Sand, gravelly becoming moist at 17' SP-GP

15

20 — Gravelly sand moist SP-GP

25 — Dolomitic Limestone

30 — TD 32'

PID READING (PPM)

Well Type: _____

Ground elev.= _____

TOC elev.= _____

Backfill/Grout Type _____

Casing Type/Size/Dia. _____

Seal elev.= _____

Seal Type _____

Filter Pack elev.= _____

Top of Screen elev.= _____

Filter Pack Type/Size _____

Screen Type/Size/Dia _____

Bottom of Well elev.= _____

Bottom of Boring elev.= _____

93' Top Screen

Bottom Steel

32' Bottom Screen

L1 = 19
L2 = 11.1
L3 = N/A
L4 = N/A
L5 = 13.9'
L6 = 20.0'
L7 = 0.2'
L8 = 0.0'
L9 = 32.0'

Boring Dia — 8"

Remarks: _____

Signature: _____

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Tailings Soil Boring/Well Number: A-1
Location: Cooke City, Montana Date: 9/10/2009 Time Start/Finish: 1335/1430
Driller: Larry Gagnon Drilling Company: O'Keefe Drilling
Drilling Method: Dual air rotary

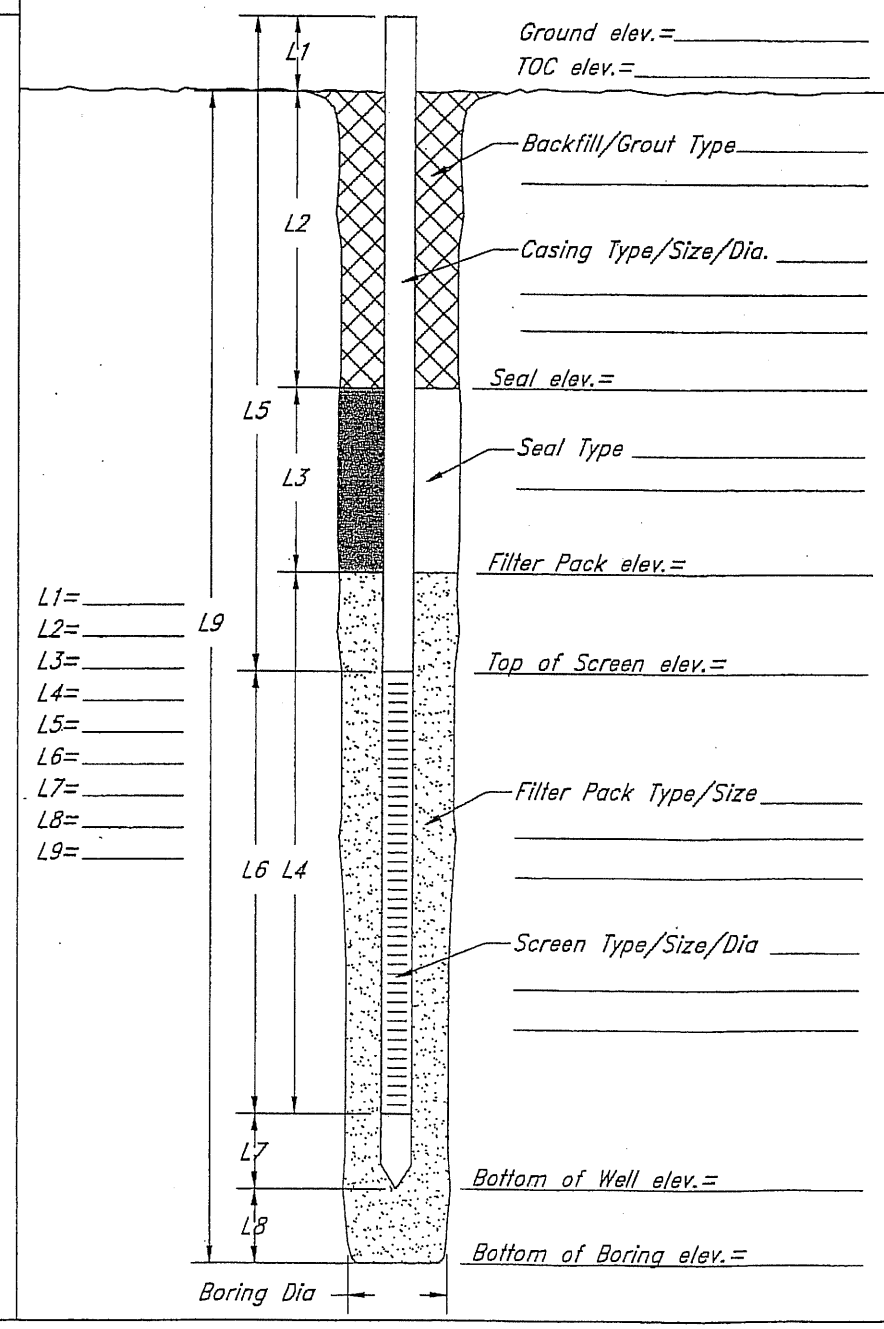
Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

0	Well graded sand, dry. SW
5	Poorly graded sand and gravel, damp SP-GP
10	Gravel with sand, damp GP
15	Bedrock Dolomite/ dolomitic limestone. Color varies from tan to gray to blue gray dry
20	TD 21'
25	
30	

PID READING (PPM)

Well Type: Plugged & Abandoned



Remarks: _____

Signature: Will Goldberg

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Tailings Soil Boring/Well Number: A-2
Location: Cooke City, Montana Date: 9/10/2009 Time Start/Finish: 1505/1634
Driller: Larry Gagnon Drilling Company: O'Keefe Drilling
Drilling Method: Dual air rotary

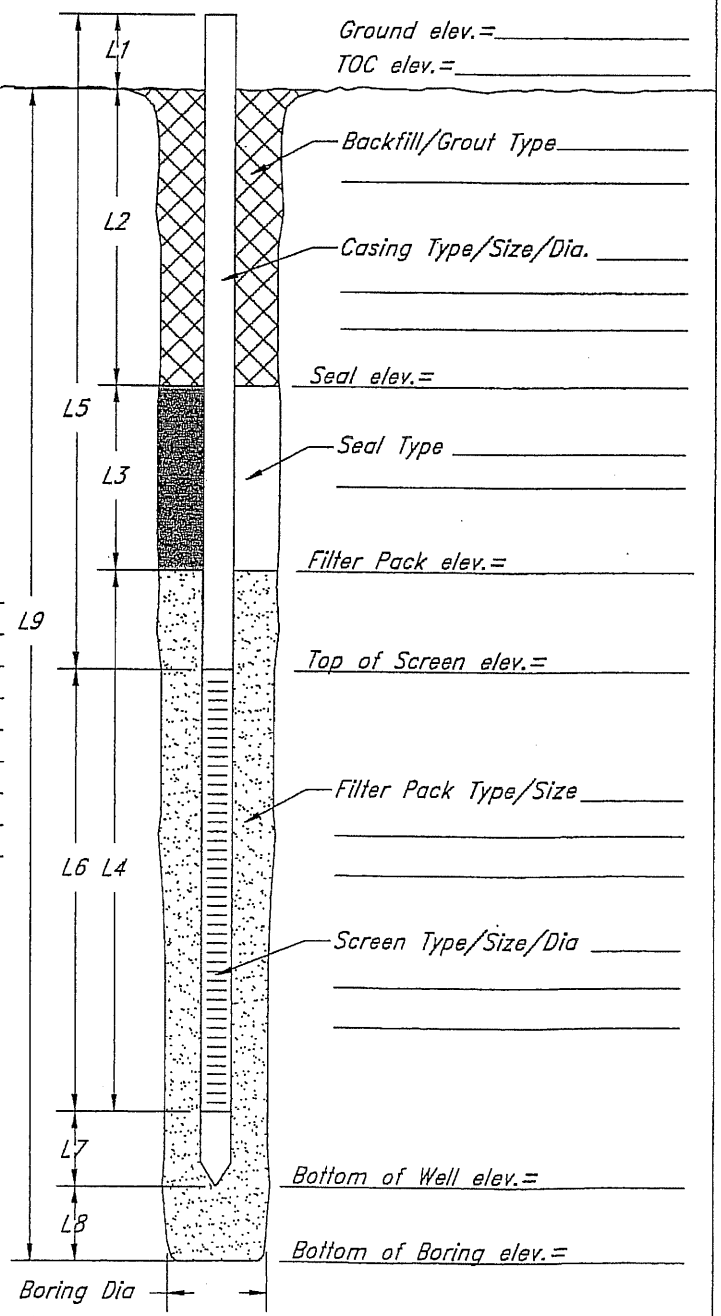
Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

PID READING (PPM)

- 0–15: Coarse sand and gravel, damp SP-GP
- 15: Silt, damp, ML
- 15–20: Sand and gravel, wet GP-SP
- 20–25: Sand and gravel, wet SP-GP
- 25: Bedrock, dry
- TD 25'

Well Type: Plugged & Abandoned



Remarks: Drilled bedrock open hole - no water produced. Driller estimated alluvium would produce 1-2 gpm

Signature: Will Goldberg

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Tailings Soil Boring/Well Number: A-3
Location: Cooke City, Montana Date: 9/10/2009 Time Start/Finish: 1145/1220
Driller: Larry Gagnon Drilling Company: O'Keefe Drilling
Drilling Method: Dual air rotary

Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

Silty Sand, damp
SM

Sand with silt and gravel, damp
SP

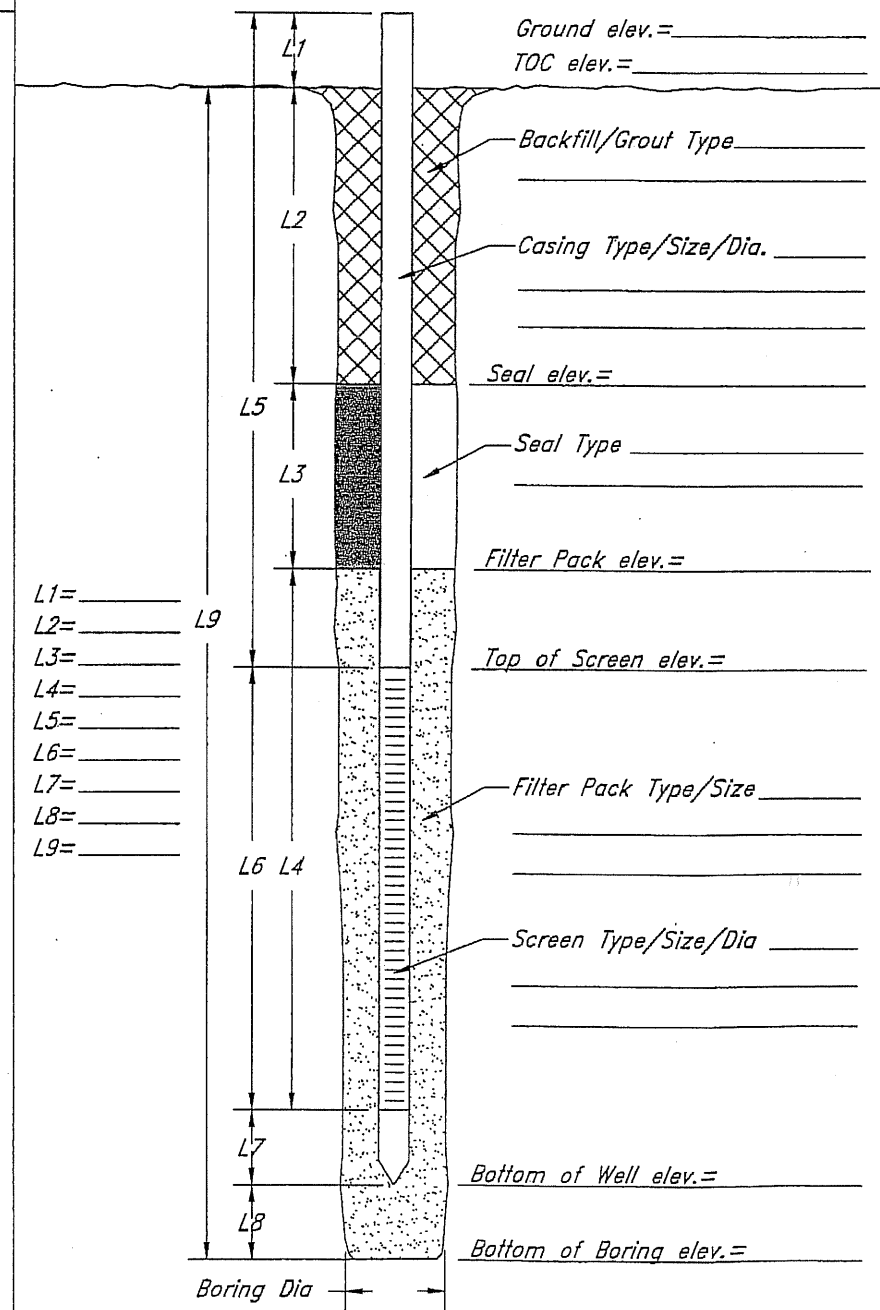
Cobbles

Bedrock, angular chips cuttings damp. No water

TD 19' bgs

PID READING (PPM)

Well Type: Plugged & Abandoned



L1= _____
L2= _____
L3= _____
L4= _____
L5= _____
L6= _____
L7= _____
L8= _____
L9= _____

Ground elev.= _____
TOC elev.= _____
Backfill/Grout Type _____
Casing Type/Size/Dia. _____
Seal elev.= _____
Seal Type _____
Filter Pack elev.= _____
Top of Screen elev.= _____
Filter Pack Type/Size _____
Screen Type/Size/Dia _____
Bottom of Well elev.= _____
Bottom of Boring elev.= _____

Remarks: At 19 feet bgs turned off air and waited 15 minutes, then ran bit to bottom with air on – no water produced. Bottom 8 feet casing were wet when pulled

Signature: Will Goldberg

PIONEER TECHNICAL SERVICES, INC.
BUTTE, MONTANA

SOIL BORING LOG & WELL CONSTRUCTION DETAILS

Project: McLaren Tailings Soil Boring/Well Number: A-4
Location: Cooke City, Montana Date: 9/10/2009 Time Start/Finish: 0940/1050
Driller: Larry Gagnon Drilling Company: O'Keefe Drilling
Drilling Method: Dual air rotary
Depth to Water: _____ Logged By: Will Goldberg

Soil Boring Log

Silty sand, damp brown.
SP

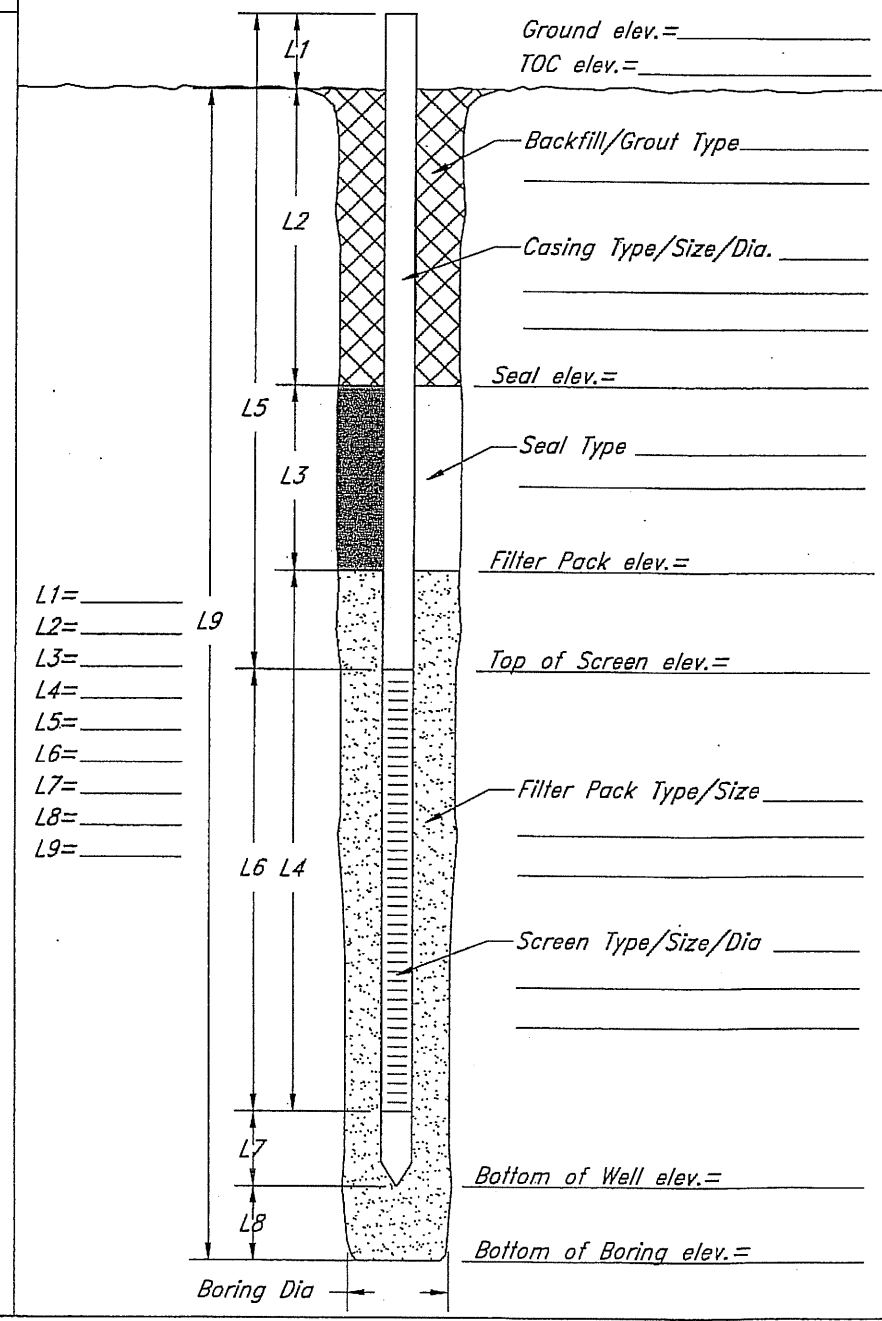
Poorly graded sand and gravel, damp brown
SP-GP

Bedrock, fine grained crystalline rock. Color varies from light to dark gray, dry. Strong reaction of fine grained cuttings to HCL
Dolomitic Limestone

TD 26.5' bgs Dry

PID READING (PPM)

Well Type: Plugged & Abandoned



Remarks: Pulled steel casing & plugged bottom with 4 bags bentonite & drill cuttings. Add bentonite to top of hole, last 1 foot filled with cuttings

Signature: Will Goldberg

APPENDIX G

PUMPING TEST RESULTS

(THIS DATA IS INCLUDED WITH THE HARD COPY OF THE *FINAL MCLAREN TAILINGS ABANDONED MINE SITE PUMPING WELL INSTALLATION PROJECT CCR,* OR AVAILABLE UPON REQUEST)

APPENDIX H

PHOTO LOG

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/10/2009
Description:	Rig set on C1-5 (abandoned)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/10/2009
Description:	Casing shoe
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/10/2009
Description:	Drill bit & reamer (length 4.2')
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/10/2009
Description:	Cuttings from C1-5 (later abandoned)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/10/2009
Description:	Drilling bedrock C1-4 (later abandoned)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/10/2009
Description:	Cuttings from C1-4 (later abandoned)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #: Photos 9-10 thru 9-14.doc

Date: 9/10/2009

Description: Photo O'Keefe setup at C1-1 (later abandoned)

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #: Photos 9-10 thru 9-14.doc

Date: 9/10/2009

Description: Sample C1-1 (later abandoned)

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/10/2009
Description:	Cuttings from C1-3 (later abandoned)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/11/2009
Description:	Screen going into hole. Kpacker gaskets hang up on casing at surface. Will push screen down with drill rods and hold on bottom while casing is pulled back.
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/11/2009
Description:	Screen going into hole. Kpacker gaskets hang up on casing at surface. Will push screen down with drill rods and hold on bottom while casing is pulled back.
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/11/2009
Description:	A-1 Cuttings (A-1 later re-named to C1-4)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #: Photos 9-10 thru 9-14.doc

Date: 9/11/2009

Description: A-1 Cuttings (A-1 later re-named to C1-4)

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #: Photos 9-10 thru 9-14.doc

Date: 9/11/2009

Description: Cuttings from C3-10

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/11/2009
Description:	Surge blocking A-1 (A-1 later re-named to C1-4)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/12/2009
Description:	Cuttings from C1-2 (C1-2 later re-named to C1-1)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/12/2009
Description:	Cuttings from A-2 (A-2 later re-named C1-3)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/13/2009
Description:	Cuttings from A-2 (A-2 later re-named C1-3)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/13/2009
Description:	Cuttings from A-3 (A-3 later re-named C1-2)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/13/2009
Description:	Rig developing A-3 (A-3 re-named to C1-2). Lots of water
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/13/2009
Description:	Cuttings from C3-8 (0'-14')
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/13/2009
Description:	Cuttings from C3-8 (14'-39')
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/13/2009
Description:	Excavator with thumb controlling discharge hose
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/13/2009
Description:	Excavator with thumb controlling discharge hose
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/14/2009
Description:	Cuttings C3-5 coarse gravel 42-25'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/14/2009
Description:	Tailings from C3-5 (6'-8')
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	Photos 9-10 thru 9-14.doc
Date:	9/14/2009
Description:	Mud pit at C3-5 (TD=50') with gravel and mud
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9562.jpg
Date:	9/14/2009
Description:	Surge block equipment
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9563.jpg
Date: 9/14/2009

Description: Bear Claw Construction transporting section of screen

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

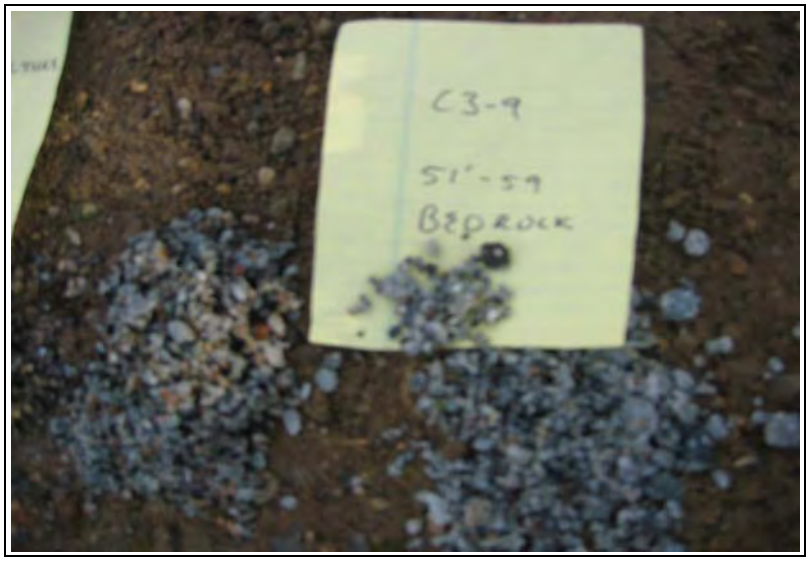
PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9564.jpg
Date: 9/14/2009

Description: Front end loader, Komatsu WA 450

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

Picture #:	IMG_9566.jpg
Date:	9/14/2009
Description:	Cutting shoe on end of drill steel
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	



Picture #:	IMG_9567.jpg
Date:	9/15/2009
Description:	Cuttings from C3-9, 51' to 59' Bedrock
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9568.jpg
Date: 9/15/2009

Description: Cuttings from C3-9, 55' Fracture

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9570.jpg
Date: 9/15/2009

Description: O'Keefe hooking discharge hose to cyclone

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9571.jpg

Date: 9/15/2009

Description: O'Keefe hooking discharge hose to cyclone

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9572.jpg

Date: 9/15/2009

Description: Bear Claw Construction clearing drill pad for C3-1

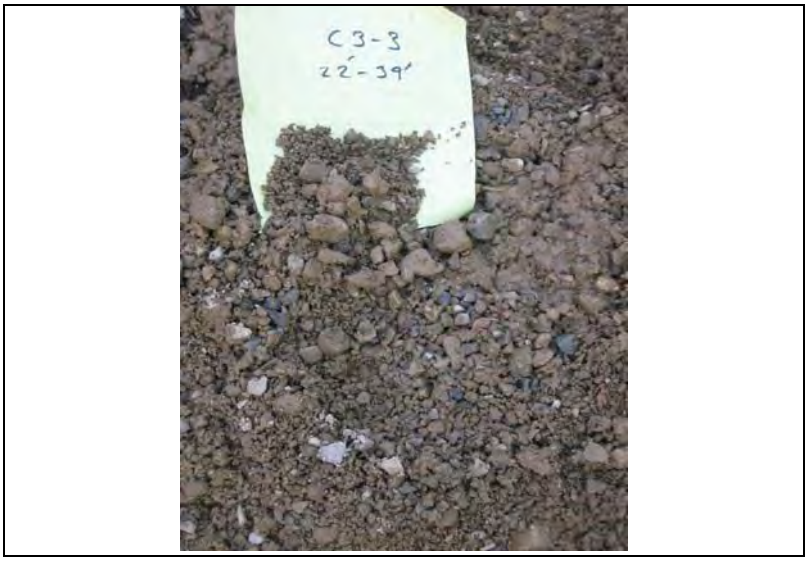
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9573.jpg
Date:	9/15/2009
Description:	Cuttings from C3-3, 47'-57'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9574.jpg
Date:	9/15/2009
Description:	Cuttings from C3-3, 39'-47'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

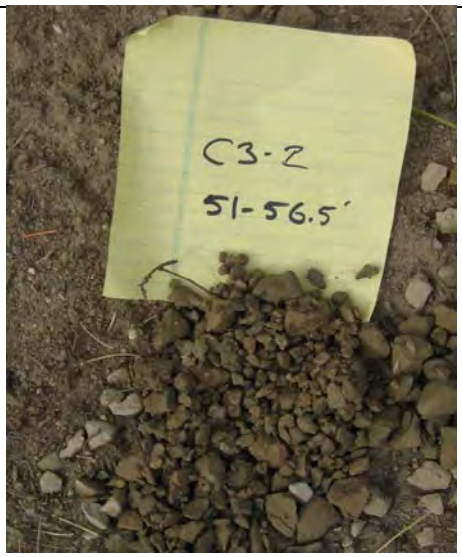


PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9575.jpg
Date:	9/15/2009
Description:	Cuttings from C3-3, 22'-39'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9577.jpg
Date:	9/15/2009
Description:	Cuttings from C3-2, 45'-51'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	



PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9578.jpg
Date:	9/15/2009
Description:	Cuttings from C3-2, 51'-56.5'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9579.jpg
Date:	9/15/2009
Description:	Cuttings from 0' to 57', C3-2
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9580.jpg
Date:	9/15/2009
Description:	Cuttings from C3-3, one row per casing flight, 1st flight is on top of photo, progressing in depth from left to right
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9581.jpg
Date:	9/15/2009
Description:	approximately 2'. Added rock and re=set. Did not blow on this hole because water would likely get into this instability
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9583.jpg

Date: 9/16/2009

Description: Cuttings from C3-1, 44'-47'

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9584.jpg
Date:	9/16/2009
Description:	Cuttings from C3-1, 47'-54'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9585.jpg
Date:	9/16/2009
Description:	Cuttings from C3-1, 54'-57'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9586.jpg
Date:	9/16/2009
Description:	Cuttings from C3-1, flights progress from left to right, top to bottom
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9587.jpg
Date:	9/16/2009
Description:	Installation of silt fence by Bear Claw Construction
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9588.jpg
Date:	9/16/2009
Description:	O'Keefe Drilling set up on McLaren tailings dike
Project:	McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9590.jpg
Date:	9/16/2009
Description:	Installed silt fence near northwestern corner of site
Project:	McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9591.jpg
Date:	9/16/2009
Description:	Cuttings from C2-1, 30'-32'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9592.jpg
Date:	9/16/2009
Description:	Cuttings from C2-1, 32'-34', 34 -36', and 36'-38'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9593.jpg
Date:	9/16/2009
Description:	First drill stem cuttings from C2-1.
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9594.jpg
Date:	9/16/2009
Description:	All cuttings from C2-1. 2nd drill stem is in the middle, third stem is on the left, fourth stem is on the right
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9595.jpg
Date:	9/16/2009
Description:	Bedrock cuttings from C2-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9596.jpg
Date:	9/16/2009
Description:	O'Keefe drill rig, de-mobing from C2-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9597.jpg
Date:	9/16/2009
Description:	Cuttings from C2-1, 63'-73', Bedrock
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9598.jpg
Date:	9/16/2009
Description:	Welding clamp on casing or C2-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9599.jpg
Date:	9/16/2009
Description:	Installing screen on well C2-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9600.jpg
Date:	9/16/2009
Description:	Installing screen on well C2-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9602.jpg
Date:	9/18/2009
Description:	Cuttings from C2-2
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9603.jpg
Date:	9/18/2009
Description:	Welding on casing for C2-2 (after break)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9604.jpg
Date:	9/18/2009
Description:	Welding on casing for C2-2 (after break)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

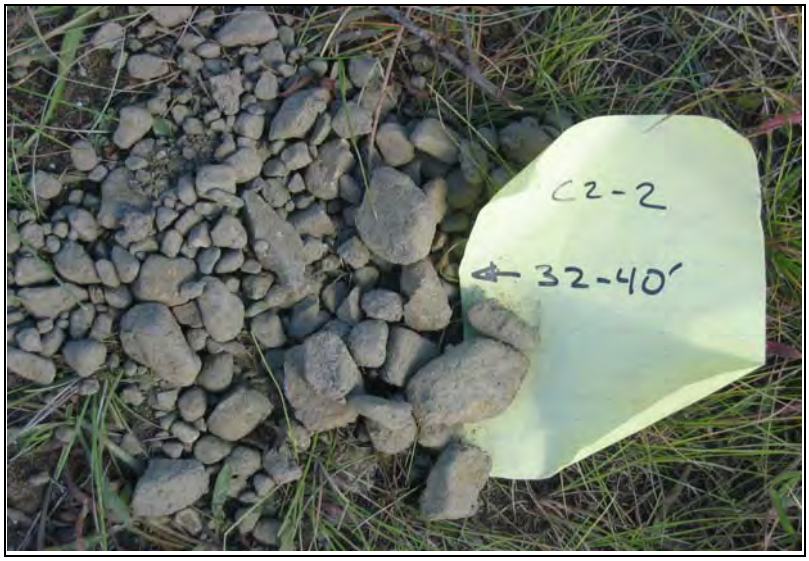
Picture #:	IMG_9605.jpg
Date:	9/18/2009
Description:	Clamp marks from dual auger rig table, C2-2
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9606.jpg
Date:	9/18/2009
Description:	Weld, C2-2
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9607.jpg
Date:	9/18/2009
Description:	Blowing on C2-2
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	



PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9608.jpg
Date:	9/18/2009
Description:	Cuttings from C2-2, 32'-40'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9609.jpg
Date:	9/18/2009
Description:	Cuttings from C2-2, 40'-60'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9610.jpg
Date:	9/18/2009
Description:	C2-2 Bedrock
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9611.jpg
Date:	9/18/2009
Description:	All cuttings from C2-2. From left to right, casing sequence is 4, 1, 2, 3. Depth increases from top to bottom.
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9612.jpg
Date:	9/18/2009
Description:	Cuttings from C2-3, 50'-60'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9613.jpg
Date:	9/18/2009
Description:	Cuttings from C2-3, 60'-70'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9614.jpg
Date:	9/18/2009
Description:	Cuttings from C2-3, 70'-79'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9615.jpg
Date:	9/18/2009
Description:	Alll cuttings from C2-3. From left to right, casing sequence is 5, 4, 3, 2, 1. Depth increases from top to bottom.
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9616.jpg
Date: 9/18/2009
Description: Cuttings from C2-3, 40'-48'
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9618.jpg
Date: 9/22/2009
Description: Chamberlain Pump rig set up on C1-3
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9619.jpg
Date:	9/22/2009
Description:	Development truck set up on C2-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9620.jpg
Date:	9/23/2009
Description:	Chamberlain small Pump rig set up on C3-8
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9621.jpg
Date:	9/24/2009
Description:	Chamberlain large Pump rig set up on C3-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9622.jpg
Date:	9/24/2009
Description:	Pumping setup on C3-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9623.jpg
Date:	9/24/2009
Description:	Development on C2-2, Steve Malkovicyh (no vest as per driller's safety)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9626.jpg
Date:	9/25/2009
Description:	Chamberlain (sub to O'Keefe) setup on C3-5 and C3-3
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9627.jpg

Date: 9/25/2009

Description: Chamberlain (sub to O'Keefe) setup on C3-5 and C3-3

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

PIONEER TECHNICAL SERVICES, INC.

Picture #: IMG_9628.jpg

Date: 9/25/2009

Description: Re-installation of upper staff gage

Project: McLaren Tailings Pumping Well Installation, Development, and Pumping

Picture #:	IMG_9629.jpg
Date:	9/25/2009
Description:	Chamberlain (sub to O'Keefe) setup on C3-7
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9630.jpg
Date:	9/26/2009
Description:	Lower staff gage (at main seep) after scraping off ferricrete
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9631.jpg
Date:	9/27/2009
Description:	Retaining structure located just upstream of the culvert (culvert is located on southwest corner of site). Structure water level is still mostly full after sitting for the night.
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

Picture #:	IMG_9632.jpg
Date:	9/27/2009
Description:	Main seep staff gage at 0820, 9/27/2009
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9633.jpg
Date:	9/27/2009
Description:	Chamberlain (sub to O'Keefe) setup on C2-1
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9634.jpg
Date:	9/27/2009
Description:	Chamberlain (sub to O'Keefe) setup on C2-3
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9635.jpg
Date:	9/27/2009
Description:	Sediment from C2-3 settling out fairly quickly
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9636.jpg
Date:	9/27/2009
Description:	Water accumulating just above the culvert located on the southwest corner of the site (photo looking to the east)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9637.jpg
Date:	9/27/2009
Description:	Water accumulating just above the culvert located on the southwest corner of the site (photo looking to the east)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	

PIONEER TECHNICAL SERVICES, INC.

Picture #:	IMG_9638.jpg
Date:	9/27/2009
Description:	Water from C2-3 with iron oxide color (1545 on 9/27/2009)
Project: McLaren Tailings Pumping Well Installation, Development, and Pumping	