MID-CONTINENT
TESTING LABORATORIES, INC.
HIGH TECHNOLOGY OIL ANALYSIS
AND ENVIRONMENTAL TESTING

2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-10
DESCRITPION:
SAMPLE DATE: 05/29/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910530208
DATE RECEIVED: 05/30/91
TIME RECEIVED: 01:00 PM
REPORT DATE: 06/03/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	163.
Hardness	.
PH	7.51
Solids, Dissolved, mg/l	108.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	62.0
Bicarbonate	75.6
Carbonate, mg/l	0.0
Chloride, mg/l	.
Cyanide, Total, mg/l	.
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	<.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	<10.

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	<.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.021	.021
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.60	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: Mary McDonald
DATE: 06-03-91

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Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	62.0
Bicarbonate	75.6
Carbonate, mg/l	0.0
Chloride, mg/l	.
Cyanide, Total, mg/l	.
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	<.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	<10.

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	<.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.021	.021
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.60	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: Mary M. Pangel

DATE: 06-03-91

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2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
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SAMPLE NAME: SW-10
DESCRITPION:
SAMPLE DATE: 08/19/91
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910821122
DATE RECEIVED: 08/20/91
TIME RECEIVED: 04:30 PM
REPORT DATE: 08/22/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	291.
Hardness	.
PH	8.09
Solids, Dissolved, mg/l	194.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	126.
Bicarbonate	154.
Carbonate, mg/l	0.0
Chloride, mg/l	.
Cyanide, Total, mg/l	.
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	<.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	16.7

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.005	.005
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.004	.004
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.20	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: Mary McDougall

DATE: 08-22-91

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PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	291.
Hardness	.
PH	8.09
Solids, Dissolved, mg/l	194.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	126.
Bicarbonate	154.
Carbonate, mg/l	0.0
Chloride, mg/l	.
Cyanide, Total, mg/l	.
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Flouride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	<.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	16.7

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.005	.005
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.004	.004
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.20	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: Mr. McDonald

DATE: 08-22-91

SURFACE WATER SAMPLING FORM

FIELD MEASUREMENTS

Date 1 / 17 / 1991

Time _____

Sampler mt
(Initials)

Sampling Station Number..... SW-10

Temperature (degrees C)..... 3.4

pH..... 8.8

Conductivity (umhos/cm)..... 272

Flow (gpm)..... _____

Water Sample (Yes/No)..... _____

Filtered Metals (Yes/No)..... _____

Number/Type Bottles..... _____

Comments..... _____

SURFACE WATER STREAM GAUGING - FIELD FORM

Date: 1-17-91

Sampler: MT MA

Station No.: SW-10

Gauge Height: _____

Meter Used: floating chip

Stream Width: 1.4 - 1.8

Total Flow: •

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)		Qcfs
0 - 1	.5	1.8	.15 .20 .15	.30	3.85	1.28	
1 - 2	1.5	1.5	.20 .24 .10	.28	3.10	1.03	
2 - 3	2.5	1.4	.28 .20 .1	.27	3.60	1.2	
			mean	.283	3.06	1.02	
					3.45	1.15	
					3.60	1.20	
					3.32	1.10	
					4.7	1.56	
					3.83	1.276	
					3.55	1.18	
					3.90	1.30	
					5.24	1.75	
					3.02	1.00	
				mean	3.709	16.04	1.234
			.283 X	1.234 =	.349 X 448.8 =		156.71 gpm
						TOTAL	

126

Comments: No Anchor Ice, 2" Ice Surface Cover
Strawberry Sz. Same flow

Temp 3.4
pH 8.8
Cond 272

SURFACE WATER STREAM GAUGING - FIELD FORM

Date: 4-22-91

Sampler: MT

Station No.. SW-10

Gauge Height: _____

Meter Used: Pygmy

Stream Width: 1'

Total Flow: _____

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0 - .25	.125	~~.125~~ .25	.25	.0625	1.4	.0875
.25 - .50	.350	~~.350~~ .25	.25	.0625	1.4	.0875
.5 - .75	.625	~~.625~~ .25	.25	.0625	1.4	.0875
.75 - 1	.875	~~.875~~ .25	.35	.0875	1.5	.131
						.3935
					TOTAL	176.60

Comments: _____

SURFACE WATER SAMPLING FORM

FIELD MEASUREMENTS

Date 11 / 23 /89

Time _____

Sampler mt
(Initials)

Sampling Station Number..... SW-10

Temperature (degrees C)..... 6

pH..... 8.6

Conductivity (umhos/cm)..... 160

Flow (gpm)..... _____

Water Sample (Yes/No)..... _____

Filtered Metals (Yes/No)..... _____

Number/Type Bottles..... _____

Comments..... _____

SURFACE WATERSTREAM GAUGING - FIELD FORM

DATE:	5/24/91	METER USED:	Pygmy
SAMPLER:	MT · JC	STREAM WIDTH:	5'
STATION NO:	SW-10	TOTAL FLOW:	1.24
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):	16	FILTERED METALS (Yes/No):	~~min D~~
pH:	8.5	NUMBER/TYPE BOTTLES:	Min Diss nut tot
CONDUCTIVITY (umhos/cm):	130	FLOW (gpm):	556,512

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0-1	.5	1	.4	.4	.2	.08
1-2	1.5	1	.5	.5	.4	.20
2-3	2.5	1	.5	.5	.6	.30
3-4	3.5	1	.6	.6	.8	.48
4-5	4.5	1	.6	.6	.3	.18
					TOTAL	1.24

COMMENTS:

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	8-19-91	METER USED:	[illegible]
SAMPLER:	MT JC	STREAM WIDTH:	3'
STATION NO:	SW-10	TOTAL FLOW:	
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):	17	FILTERED METALS (Yes/No):	
pH:	8.5	NUMBER/TYPE BOTTLES:	[illegible]
CONDUCTIVITY (umhos/cm):	200	FLOW (gpm):	113.99

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0-.5	.25	.5	.2	.2	.2	.04
.5-2	1.25	.5	.18	.18	.3	.054
2-3	2.5	.5	.4	.4	.4	.16
~~1.5-2~~	~~1.75~~	~~.5~~				
					TOTAL	.254

COMMENTS:

SURFACE [illegible] FIELD FORM

DATE:	4-14-92	METER USED:	NONE
SAMPLER:	SM	STREAM WIDTH:	—
STATION NO:	SW-10	TOTAL FLOW:	—
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	YES
TEMPERATURE (degrees C):	6.5	FILTERED METALS (Yes/No):	YES
pH:	9.1	NUMBER/TYPE BOTTLES:	1min, 1met, 1dismet, 1nt
CONDUCTIVITY (umhos/cm):	180	FLOW (gpm):	30

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
					TOTAL	

COMMENTS:

1:25

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	5-22-92	METER USED:	Floating Chip
SAMPLER:	SM	STREAM WIDTH:	
STATION NO:	SW-10	TOTAL FLOW:	
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):		FILTERED METALS (Yes/No):	
pH:		NUMBER/TYPE BOTTLES:	
CONDUCTIVITY (umhos/cm):		FLOW (gpm):	159

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0		1.0	.15/.15	.156	.156	
			.14			
1		.9	.2/.25	.165	.18	
			.1			
2		1.0	.1/.125	.141	.14	
			.15			
3		1.0	.2/.18	.16	.16	
			.1			
4		.91	.15/.18	.198	.18	
			.2			
				.18	2.2	~~.444~~
						.294
						.36
					TOTAL	

COMMENTS: 1.56 2.25 1.62
1.92 1.48 2.1
1.56 2.21 1.69
1.92 1.39 2.55 .45 5ft/1-
2.01 1.54 1.66 1.8/4 2.2'/sec
.9/2

SEASALT BASE STREAMGAGING - FIELD FORM

DATE:	3:35 5-26-92	METER USED:	
SAMPLER:	SM	STREAM WIDTH:	
STATION NO:	SW-10	TOTAL FLOW:	
GAUGE HEIGHT:	—	WATER SAMPLE (Yes/No):	YES
TEMPERATURE (degrees C):	7.9	FILTERED METALS (Yes/No):	yes
pH:	8.6	NUMBER/TYPE BOTTLES:	1qt, 1mtl, 2mbt
CONDUCTIVITY (umhos/cm):	200	FLOW (gpm):	

Interval	Midpoint	Width	Depth	Area (sf)	Velocity (fps)	Qcfs
					TOTAL	

COMMENTS: _____

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	8-31-92	METER USED:	Chip
SAMPLER:	Sm	STREAM WIDTH:	.8
STATION NO:	SW-10	TOTAL FLOW:	
GAUGE HEIGHT:	—	WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):	.7	FILTERED METALS (Yes/No):	
pH:	7.9	NUMBER/TYPE BOTTLES:	5
CONDUCTIVITY (umhos/cm):	>10	FLOW (gpm):	21

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0		.8	.1/.2/.2	.133		
1		.8	.05/.1/.12	.0787		
2		.8	.15/.1/.075	087		
3		.8	.15/.09/.15	.1		
				.1	.0463	
					TOTAL	

COMMENTS: 1.36 1.3 1.18
1.64 1.18 1.21
1.17 1.09 1.42
1.83 1.09 1.25
1.34 1.27 1.09 1.39/3' .463/SEC

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SAMPLE NAME: SW-10
DESCRITPION:
SAMPLE DATE: 01/24/92
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19920128106
DATE RECEIVED: 01/27/92
TIME RECEIVED: 02:30 PM
REPORT DATE: 01/28/92

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	246.
Hardness	.
PH	8.10
Solids, Dissolved, mg/l	162.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	120.
Bicarbonate	146.
Carbonate, mg/l	0.0
Chloride, mg/l	.
Cyanide, Total, mg/l	.
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Fluoride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.057
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	<10.0

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	<.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.004	.004
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.98	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	.050

APPROVED BY: Brenda McFadden

DATE: 1-28-92

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Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	120.
Bicarbonate	146.
Carbonate, mg/l	0.0
Chloride, mg/l	.
Cyanide, Total, mg/l	.
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Fluoride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.057
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	<10.0

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	<.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.004	.004
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.98	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	.050

APPROVED BY: Bonda M. McFadden

DATE: 1-28-92

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2100 S. 7th, Suite 211 • P.O. Box 3388 • Rapid City, SD 57709
(605) 348-0111

SAMPLE NAME: SW-10
DESCRITPION:
SAMPLE DATE: 04/14/92
SAMPLE TIME:
SAMPLED BY:

MYRON ANDERSEN
BROHM MINING CORP.
P.O. BOX 485
DEADWOOD, SD 57732

ACCOUNT NUMBER: W1000
LAB NUMBER: 19920415114
DATE RECEIVED: 04/14/92
TIME RECEIVED: 05:30 PM
REPORT DATE: 04/16/92

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	246.
Hardness	.
PH	8.04
Solids, Dissolved, mg/l	169.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	110.
Bicarbonate	134.
Carbonate, mg/l	0.0
Chloride, mg/l	.
Cyanide, Total, mg/l	.
Cyanide, WAD, mg/l	.
Cyanide, Free, mg/l	.
Fluoride, mg/l	.
Nitrogen, Ammonia, mg/l	.
Nitrogen, Nitrate, mg/l	.055
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	16.7

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	<.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.003	.005
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.07	.
Strontium	.	.
Vanadium	.	.
Zinc	.050	.075

APPROVED BY: Thos M. Largent

DATE: 04-16-92