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-19
DESCRITPION:
SAMPLE DATE: 05/31/91
SAMPLE TIME:
SAMPLED BY:

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

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910604117
DATE RECEIVED: 06/03/91
TIME RECEIVED: 04:30 PM
REPORT DATE: 06/05/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	257.
Hardness	.
PH	7.89
Solids, Dissolved, mg/l	171.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	128.
Bicarbonate	156.
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	<.001	.934
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.05	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	1.30

APPROVED BY: Thos M Payne

DATE: 06-05-91

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-19
DESCRITPION:
SAMPLE DATE: 05/31/91
SAMPLE TIME:
SAMPLED BY:

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

ACCOUNT NUMBER: W1000
LAB NUMBER: 19910604117
DATE RECEIVED: 06/03/91
TIME RECEIVED: 04:30 PM
REPORT DATE: 06/05/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	257.
Hardness	.
PH	7.89
Solids, Dissolved, mg/l	171.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	128.
Bicarbonate	156.
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	<.001	.934
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	3.05	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	1.30

APPROVED BY: Alan M Payne

DATE: 06-05-91

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-19
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: 19910821124
DATE RECEIVED: 08/20/91
TIME RECEIVED: 04:30 PM
REPORT DATE: 08/22/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	257.
Hardness	.
PH	7.55
Solids, Dissolved, mg/l	177.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	122.
Bicarbonate	149.
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	<10.0

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.012	.012
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.003	.003
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.61	.
Strontium	.	.
Vanadium	.	.
Zinc	.069	.069

APPROVED BY: Mary M. Pangal

DATE: 08-22-91

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-19
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: 19910821124
DATE RECEIVED: 08/20/91
TIME RECEIVED: 04:30 PM
REPORT DATE: 08/22/91

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	257.
Hardness	.
PH	7.55
Solids, Dissolved, mg/l	177.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	122.
Bicarbonate	149.
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	<10.0

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	<.001
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	.012	.012
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.003	.003
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.61	.
Strontium	.	.
Vanadium	.	.
Zinc	.069	.069

APPROVED BY: Mary M. Dougal

DATE: 08-22-91

SURFACE WATER SAMPLING FORM

FIELD MEASUREMENTS

Date 2 / 13 / 8 91

Time

Sampler mt
(Initials)

Sampling Station Number..... SW-19

Temperature (degrees C)..... 5

pH..... 8.5

Conductivity (umhos/cm)..... 380

Flow (gpm)..... 15 gpm

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

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

Number/Type Bottles..... MIN Diss NUT TOT.

Comments.....

occular Flow Rate due to Flow interf. from Rocks

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	5-7-91	METER USED:	Pygmy
SAMPLER:	mt	STREAM WIDTH:	2.5
STATION NO:	Sw-19	TOTAL FLOW:	172.788
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):	7	FILTERED METALS (Yes/No):	
pH:	8.5	NUMBER/TYPE BOTTLES:	
CONDUCTIVITY (umhos/cm):	316	FLOW (gpm):	172.788

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0-.5	.25	.5	.25	.125	.8	.1
.5-1	.75	.5	.25	.125	.8	.1
1-1.5	1.25	.5	.3	.15	.6	.09
1.5-2	1.75	.5	.35	.175	.4	.07
2-2.5	2.25	.5	.25	.125	.2	.025
						.385
					TOTAL	172.788

COMMENTS:

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	5-31-91	METER USED:	6/13/91 Pygmy
SAMPLER:	mt JC	STREAM WIDTH:	5'
STATION NO:	SW-19	TOTAL FLOW:	2.964
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	
TEMPERATURE (degrees C):	11	FILTERED METALS (Yes/No):	
pH:	8.4	NUMBER/TYPE BOTTLES:	
CONDUCTIVITY (umhos/cm):	180	FLOW (gpm):	1330.2432

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0-1	.5	1	.4	.4	1.6	.672
1-2	1.5	1	.5	.5	1.2	.6
2-3	2.5	1	.5	.5	1.8	.9
3-4	3.5	1	.6	.6	.9	.54
4-5	4.5	1	.42	.42	.6	.252
					TOTAL	2.964

1330.2432

COMMENTS: gauged 6/13/91

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE: 8-15-91

SAMPLER: MT - JC

STATION NO: SW-19

GAUGE HEIGHT:

TEMPERATURE (degrees C): 14°

pH: 8.6

CONDUCTIVITY (umhos/cm): 300

METER USED: pygmy

STREAM WIDTH: 2ft

TOTAL FLOW: .185

WATER SAMPLE (Yes/No): (Yes circled)

FILTERED METALS (Yes/No): (Yes circled)

NUMBER/TYPE BOTTLES: Nut, Diss Metal, Total Metals, Min

FLOW (gpm): 83

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0-1'	.5	1	0'.3	.3	.25	.075
1-2'	1.5	1	0'.5	.5	.22	.110
2-3'	2.5					

TOTAL: .185

COMMENTS:

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	5-21-92	METER USED:	
SAMPLER:	SM	STREAM WIDTH:	
STATION NO:	SW-19	TOTAL FLOW:	
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	yes
TEMPERATURE (degrees C):	6.6 1:48	FILTERED METALS (Yes/No):	yes
pH:	8.0	NUMBER/TYPE BOTTLES:	1 mw, 1 wet, 2 met
CONDUCTIVITY (umhos/cm):	310	FLOW (gpm):	[illegible]

Interval	Midpoint	Width	Depth	Area (sft)	Velocity (fps)	Qcfs
0		2.1	.1/.1	.21	.1	
			.15/.5			
1		1.9	.15/.2	.214	.1125	
			.2/.1			
2		1.9	.1/.15	.332	.175	
			.25/.2			
3		2.2	.2/.2	.357	.1625	
			.15/.1			
4		1.8	.25/.25	.315	.175	
			.1/.1			
				.2056		
					.477	
					1.6'/SEC	
					TOTAL	

COMMENTS: 2.73 2.14 2.68
2.15 3.02 2.6
2.02 2.41 2.39
2.48 2.48 2.12
2.46 2.38 2.42 / 36.48 4/2.4 SEC .6' 1.67'/SEC

SURFACE WATER STREAM GAUGING - FIELD FORM

DATE:	8-31-92	METER USED:	
SAMPLER:	SM	STREAM WIDTH:	
STATION NO:	SW-19	TOTAL FLOW:	
GAUGE HEIGHT:		WATER SAMPLE (Yes/No):	Yes
TEMPERATURE (degrees C):	10.	FILTERED METALS (Yes/No):	Yes
pH:	8.1	NUMBER/TYPE BOTTLES:	4
CONDUCTIVITY (umhos/cm):	320	FLOW (gpm):	est 60

12:45

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

COMMENTS: _____

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-19
DESCRITPION:
SAMPLE DATE: 01/21/92
SAMPLE TIME:
SAMPLED BY:

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

ACCOUNT NUMBER: W1000
LAB NUMBER: 19920124113
DATE RECEIVED: 01/23/92
TIME RECEIVED: 02:00 PM
REPORT DATE: 01/27/92

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	368.
Hardness	.
PH	8.15
Solids, Dissolved, mg/l	246.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	212.
Bicarbonate	259.
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	.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	<10.0

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	.002
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.007	.007
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.81	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: [signature]

DATE: 01-27-92

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-19
DESCRITPION:
SAMPLE DATE: 01/21/92
SAMPLE TIME:
SAMPLED BY:

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

ACCOUNT NUMBER: W1000
LAB NUMBER: 19920124113
DATE RECEIVED: 01/23/92
TIME RECEIVED: 02:00 PM
REPORT DATE: 01/27/92

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	368.
Hardness	.
PH	8.15
Solids, Dissolved, mg/l	246.
Solids, Suspended, mg/l	<10.0
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	212.
Bicarbonate	259.
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	.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	<10.0

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	.002
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.007	.007
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.81	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: [signature]

DATE: 01-27-92

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-19
DESCRITPION:
SAMPLE DATE: 01/21/92
SAMPLE TIME:
SAMPLED BY:

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

ACCOUNT NUMBER: W1000
LAB NUMBER: 19920124113
DATE RECEIVED: 01/23/92
TIME RECEIVED: 02:00 PM
REPORT DATE: 01/24/92

PHYSICAL PROPERTIES	VALUE
Conductivity, umhos/cm	368.
Hardness	.
PH	8.15
Solids, Dissolved, mg/l	246.
Solids, Suspended, mg/l	.
Turbidity, NTU	.

INORGANIC & NONMETALLIC	VALUE
Alkalinity	212.
Bicarbonate	259.
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	.050
Nitrogen, Nitrite, mg/l	.
Sulfate, mg/l	<10.0

METALS mg/l	DISSOLVED	TOTAL
Aluminum	.	.
Antimony	.	.
Arsenic	<.001	.002
Barium	.	.
Beryllium	.	.
Boron	.	.
Cadmium	<.001	.001
Calcium	.	.
Chromium	.	.
Cobalt	.	.
Copper	.007	.007
Gold	.	.
Iron	.	.
Lead	.	.
Lithium	.	.
Magnesium	.	.
Manganese	.	.
Mercury	.	.
Molybdenum	.	.
Nickel	.	.
Potassium	.	.
Selenium	<.005	<.005
Silicon	.	.
Silver	.	.
Sodium	2.81	.
Strontium	.	.
Vanadium	.	.
Zinc	<.050	<.050

APPROVED BY: R. McFadden

DATE: 1-24-92