SOLDIER CREEK COAL CO.

SOLDIER CANYON MINE
ACT/007/018

ANNUAL REPORT 1985

Mine file
Sue Sumer

RECEIVED
MAR 14 1986
DIVISION OF
OIL, GAS & MINING

SUNEDCO COAL CO.
7401 W Mansfield Ave
Suite 418
Post Office Box 35B
Lakewood CO 80235
303 987 8720

Mr. Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program
Utah Division of Oil, Gas & Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180

March 12, 1986

Re: Permit No. ACT/007/009; UT-0041
1985 Annual Report

Dear Mr. Braxton:

Enclosed is Sunoco Energy Development Co.'s 1985 Annual Report. We are in the process of updating the legal identity portion of the permit and will submit the necessary documents to you in the near future.

If you have questions concerning the annual report or the permit update, please contact me.

Very truly yours,

C. W. Durrett, Manager
Environmental Affairs

cc: M. D. Ross
Soldier Creek Coal Company

(December 1985)

COAL MINING AND RECLAMATION OPERATIONS FOR 1985
(Authority UMC 784)

(Must be submitted to the Division by March 31, 1986)

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, Utah 84180-1203
(801) 538-5340

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DIVISION OF
OIL, GAS & MINING

Operator: SOLDIER CREEK COAL COMPANY
Mine Name: SAGEPOINT-DUGOUT CANYON
Mailing Address: P.O. BOX 1, PRICE, UTAH 84501
Company Representative: M.D. ROSS
Permit No.: UT-0041: ACT/007/009
Date of Permanent Program Permit: June 5, 1984
Quantity of Coal Mined (tonnage) 1985: None

Attach Most Recent Certificate of Insurance.

Attach Updated Mine Sequence Map. No coal has been mined under Permanent Program Permit, therefore, there has been no up-dating of the Mine Sequence Map.

All monitoring activities during the report period must be submitted with this report: (including, but not limited to)

A. Water Monitoring Data

B. Precipitation Data

C. Subsidence Monitoring

D. Vegetation Data (test plots) or Revegetation Success Monitoring (includes interim and final)

E. Permit Stipulation Status

Items A, B, C, & D: No monitoring activities need to be inaugurated until six months prior to opening of mine. No opening date has been established.

0488R ITEM E: All stipulations are currently being held in abeyance, awaiting decisions related to mine opening.

SET TAB STOPS AT ARROWS

Certificate of Insurance

ord

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES LISTED BELOW.

NAME AND ADDRESS OF AGENCY

[illegible]

NAME AND ADDRESS OF INSURED

[illegible] Including Sunoco Energy Development Co.

[illegible]

COMPANIES AFFORDING COVERAGES

COMPANY LETTER A	
COMPANY LETTER B	
COMPANY LETTER C	
COMPANY LETTER D	
COMPANY LETTER E	

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This is to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition of any contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the terms, exclusions and conditions of such policies.

LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)	EACH OCCURRENCE	AGGREGATE
	GENERAL LIABILITY			BODILY INJURY	$	$
	☐ COMPREHENSIVE FORM					
	☐ PREMISES—OPERATIONS			PROPERTY DAMAGE	$	$
	☐ EXPLOSION AND COLLAPSE HAZARD					
	☐ UNDERGROUND HAZARD					
	☐ PRODUCTS/COMPLETED OPERATIONS HAZARD			BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 2,500	$
	☐ CONTRACTUAL INSURANCE					
	☒ BROAD FORM PROPERTY DAMAGE					
	☐ INDEPENDENT CONTRACTORS					
	☐ PERSONAL INJURY			PERSONAL INJURY		$
	AUTOMOBILE LIABILITY			BODILY INJURY (EACH PERSON)	$	
	☐ COMPREHENSIVE FORM			BODILY INJURY (EACH ACCIDENT)	$	
	☒ OWNED			PROPERTY DAMAGE	$	
	☐ HIRED			BODILY INJURY AND PROPERTY DAMAGE COMBINED	$2,500	
	☐ NON-OWNED					
	EXCESS LIABILITY			BODILY INJURY AND PROPERTY DAMAGE COMBINED	$	$
	☐ UMBRELLA FORM					
	☐ OTHER THAN UMBRELLA FORM					
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY			STATUTORY		
					$ 500	(EACH ACCIDENT)
	OTHER					

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

Sage Point/Dugout Canyon Project

Cancellation: Should any of the above described policies be cancelled or substantially changed before the expiration date thereof, the issuing company will endeavor to mail 30 days written notice to the below named certificate holder. ~~but failure to mail such notice shall impose no obligation or liability of any kind upon the company.~~

NAME AND ADDRESS OF CERTIFICATE HOLDER

U. S. Department of Interior
Office of Surface Mining
Brooks Towers
1020 Fifteenth St.
Denver, Colorato 20202

DATE ISSUED May 27, 1982

AUTHORIZED REPRESENTATIVE

ACORD 25 (1-79)

Certificate of Insurance

ord

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES LISTED BELOW.

AND ADDRESS OF AGENCY

[illegible] & CO.
[illegible]
[illegible], Pa. [illegible]

AND ADDRESS OF INSURED

[illegible] Company Inc. [illegible]
[illegible] Including Sunoco Energy
[illegible] Development Co.
[illegible], Pa. [illegible]

COMPANIES AFFORDING COVERAGES

COMPANY LETTER A	[illegible]
COMPANY LETTER B	
COMPANY LETTER C	
COMPANY LETTER D	
COMPANY LETTER E	

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DIVISION OF
OIL, GAS & MINING

[illegible] to certify that policies of insurance listed below have been issued to the insured named above and are in force at this time. Notwithstanding any requirement, term or condition [illegible] contract or other document with respect to which this certificate may be issued or may pertain, the insurance afforded by the policies described herein is subject to all the [illegible] exclusions and conditions of such policies.

COMPANY LETTER	TYPE OF INSURANCE	POLICY NUMBER	POLICY EXPIRATION DATE	Limits of Liability in Thousands (000)	EACH OCCURRENCE	AGGREGATE
	GENERAL LIABILITY ☐ COMPREHENSIVE FORM ☐ PREMISES—OPERATIONS ☐ EXPLOSION AND COLLAPSE HAZARD ☐ UNDERGROUND HAZARD ☐ PRODUCTS/COMPLETED OPERATIONS HAZARD ☐ CONTRACTUAL INSURANCE ☒ BROAD FORM PROPERTY DAMAGE ☐ INDEPENDENT CONTRACTORS ☐ PERSONAL INJURY	[illegible] 2.4	[illegible] Until Cancelled	BODILY INJURY PROPERTY DAMAGE	$ $	$ $
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 2,500	$
				PERSONAL INJURY		$
	AUTOMOBILE LIABILITY ☐ COMPREHENSIVE FORM ☒ OWNED ☐ HIRED ☐ NON-OWNED	[illegible]	[illegible] Until Cancelled	BODILY INJURY (EACH PERSON) BODILY INJURY (EACH ACCIDENT) PROPERTY DAMAGE	$ $ $	
				BODILY INJURY AND PROPERTY DAMAGE COMBINED	$ 2,500	
	EXCESS LIABILITY ☐ UMBRELLA FORM ☐ OTHER THAN UMBRELLA FORM			BODILY INJURY AND PROPERTY DAMAGE COMBINED	$	$
	WORKERS' COMPENSATION and EMPLOYERS' LIABILITY	[illegible]	[illegible] Until Cancelled	STATUTORY		
	OTHER				$ 500 (EACH ACCIDENT)	

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES

Sage Point/Dugout Canyon Project

Cancellation: Should any of the above described policies be cancelled or substantially changed before the expiration date thereof, the issuing company will endeavor to mail 30 days written notice to the below named certificate holder, but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.

NAME AND ADDRESS OF CERTIFICATE HOLDER

Utah Division of Oil, Gas and Mining
1588 West North Temple
Salt Lake City, Utah 84116

DATE ISSUED May 27, 1982

[illegible]
AUTHORIZED REPRESENTATIVE

[illegible] 25 (1-79)

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

RECEIVED
MAR 31 1986
DIVISION OF
OIL, GAS & MINING

March 28, 1986

Mr. Lowell P. Braxton, Administrator
Mineral Resource Development and
Reclamation Program
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Submittal of Soldier Creek Coal Company's
Annual Report for 1985

Dear Mr. Braxton:

The enclosed report is being submitted as per your request letter dated December 23, 1985. Preparation of and data contained in this report was based on the information UDOGM requested.

If you have any questions or require further information, please contact me.

Sincerely,

SOLDIER CREEK COAL COMPANY

Christopher P. Allen
Mine Engineer

CPA:pp
Enclosures

Soldier Creek Coal Company
Soldier Canyon Mine

Annual Report 1985

March 1985

Submitted to: Utah Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center - Suite 350
Salt Lake City, UT 84180-1203

Prepared and submitted by: Engineering staff of
Soldier Creek Coal Company

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Introduction

This 1985 Annual Report is submitted in accordance with the Utah Division of Oil, Gas & Mining's (UDOGM) request for a comprehensive report covering all pertinent data associated with the operation of Soldier Canyon Mine (SCM) by Soldier Creek Coal Company (SCCC). The information submitted is as per the letter from UDOGM to SCCC dated December 23, 1985 and included in Appendix 1.

This report was compiled from information collected by the staff of SCCC during 1985. Additional information was gathered from various federal, state and private agencies. All information presented in this report is the most accurate and up-to-date that is available at this time.

Company Data

Operator:	Soldier Creek Coal Company
Mine Name:	Soldier Canyon Mine
Mailing Address:	Post Office Box I Price, UT 84501
Company Representative:	Mr. M.D. Ross
Permit Numbers:	State; ACT/007/018, Federal; UT-0023
Date of Mining Permit:	May 29, 1985
Total Mined Tonnage 1985:	675,982

SCCC was owned by California Portland Cement Company a wholly owned subsidiary of CalMat Company for the first nine months of 1985. On September 5, 1985, SCCC was sold by CalMat Company, a Delaware corporation, and California Portland Cement Company, a California corporation, to Sunedco Coal Company, a Delaware corporation. The sale of SCCC to Sunedco Coal Company initiated a transfer of mining permits to Sunedco and a need to include Sunedco's other property in the present mine permit boundary. These needs started the process to obtain a new mining permit that would include various properties now owned by Sunedco.

The permit process was started after the sale of the mine and has continued to the present date. A new permit application package is tentatively planned for submittal around the first of April. This package will combine properties into one permit area operated by SCCC. The most recent changes will be included in this package but the latest certificate of insurance is included in Appendix 1.

The progress of SCM as of December 31, 1985 is shown on Map #1 included in Appendix 1. SCCC has mined coal in leases SL-051279-063188 and U-50722. The amount of coal mined from lease SL-051279-063188 is 672,021 tons and from lease U-50722 is 3,961 tons. The company ended the year with an employment staff of 122 people.

Permit Status

SCCC was issued a 5-year permit, on May 29, 1985, to mine coal at SCM. Prior to the date of issuance, the mine was operated under an interim mining permit. The permit, UT-0023 and/or ACT/007/018, was issued by the Office of Surface Mining and UDOGM. Approval letters from both regulatory agencies are included in Appendix 2. Bonding for the new permit was set at $1,090,800.00 but was reduced to $522,592.00 at SCCC's request. This bond does not cover any disturbance at the waste rock disposal site.

SCCC is actively pursing a new permit for an expanded permit boundary at SCM. This process has been ongoing from September 1985 and will continue until a new permit is granted. Until that time, the mine is proceeding within the guidelines of the present permit, UT-0023 and ACT/007/018.

There was one violation issued to SCCC by UDOGM on May 2, 1985. The violation was written for failure to construct and maintain the sediment pond embankment and side slopes. Abatement of this violation has yet to be completed, but approval of abatement plans was given on March 20, 1985. Copies of the violation and the ongoing abatement process are included in Appendix 2.

The finalized assessments for state violations N84-6-10-1 and N83-6-11-1 were received on February 27, 1985 and January 16, 1985. Copies of both assessments are included in Appendix 2 along with copies of the payments for the civil penalties associated with each violations. The abatement of the one violation and these two assessments were the only actions required from inspections of SCM. Copies of all inspections for 1985 are included in Appendix 2.

Suspension of the monitoring activities for the spring with water right 535 (called spring 535) is cover in the water monitoring section. SCCC received approval to drop a fourth field trial study area and information on this can be found within the vegetation information. Subsidence monitoring activities for 1985 are described in the subsidence section. All water monitoring information, which includes the NPDES data, is included in the water data section.

SCCC has two earthen structures, a sedimentation pond and two sewage lagoon cells, which require quarter inspections. The inspections of these structures are available in Appendix 2. There was a violation written on the sedimentation pond and this is included in Appendix 2. Other than the embankment and side slope problem, the pond is in good shape and revegetation has been successful. The sewage lagoons are in good shape with just minor amounts of settling between cells. Revegetation of the disturbed areas in and around the sewage lagoon is in fair shape with all areas responding favorably to the seeding.

Deer crossing signs were placed along county road 53 following permit approval in May. These signs along with the showing of a wildlife film, "Coal Mining and Wildlife", during annual retraining of all employees fulfilled most of the wildlife awareness spelled out in the permit. At strategic times during the year all employees were reminded of the heavy influx of wintering animals and the need to slow driving speeds and pay more attention to driving. These actions completed the wildlife section needs for 1985.

Water Monitoring Data

Water data for 1985 was collected from surface springs, Soldier Creek, underground water sources and mine water discharges. A compilation of the results for each separate site is given in the following tables and copies of the laboratory reports are provided in Appendix 3.

SCCC's monitoring activities followed their interim plan from January to May. Following permit approval, effective May 29, 1985, SCM began a new water monitoring program. This program is detailed within the permit application and locations of each site are depicted on Drawings D186 and D198 included in Appendix 3.

SCCC discharges water from SCM into Soldier Creek under NPDES permit UT-0023680. The mine applied for and received an additional discharge point, 003, from the U.S. Environmental Protection Agency. A copy of this approval is included in Appendix 3. All discharges were in compliance except the December discharge for point 003. Notification of this noncompliance was made on January 24, 1986 to all governing regulatory agencies and a copy is included in Appendix 3.

The process to renew the NPDES permit UT-0023817 for Banning Siding was completed and issued January 29, 1986. There have been no discharges at Banning Siding for 1985. The expiration date of the renewed permit is June 30, 1990. A copy of the approval letter is included in Appendix 3.

The total groundwater consumption due to mining at SCM is a combination of the following:

1. water added to coal - 4,863,000 gallons,
2. water evaporation - 7,124,000 gallons,
3. water pump from mine - 39,123,000 gallons.

Total consumption is 51,110,000 gallon or 156.9 acre-ft. The amount of water added to the coal is based on the amount of coal mined, 675,982 tons, the inherent moisture, 4%, and the run-of-mine moisture, 7%. The annual loss of water due to evaporation is based on the amount of air entering the mine, 2.5×10^{11} ft3, the relative humidity of the air entering the mine, average November to March - 45% and average April to October 40%, and the relative humidity of the air leaving the mine, average throughout year 93%.

SCCC's request to drop all monitoring activities for spring 535 was conditionally approved on November 18, 1985 and final approval was granted January 18, 1986. The spring was dropped because there was no water associated with it during the entire year. Approvals are provided in Appendix 3. Two additional underground monitoring sites were added to the ground water list, UG-3N8E and UG-3N Belt. These sites have flowed for more than a month at greater than one gallon per minute.

Soldier Creek Water Monitoring Tables

Site ID: 18-2 Comments: Soldier Creek Stream, below mine property.

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date	01/25/85	02/26/85	03/15/85	04/30/85	06/04/85	06/27/85
Time	15:15	13:00	14:40	14:20	13:20	14:05
Sampler	DGS	DGS	DGS	DGS	DGS	CPA
Field Measurements						
Flow (gpm)			1975			2056
pH (units)	8.10	8.20	8.30	8.52	8.0	8.84
Dissolved Oxygen (ppm)						9.30
Conductivity (us/cm)				576		870
Temperature:						
Water (°F)	34	35	32	54		63
Air (°F)	24	28	48	68		66
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids	34	168	416	226	42	46
Total Dissolved Solids	620	640	445	386	390	468
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						0
Bicarbonate (HCO_3^-)						338
Cadmium (Cd)						
Calcium (Ca)						34
Chloride (Cl^-)						11
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)	0.42	1.20	7.70	2.79	0.23	0.20
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						44
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						5
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						83
Sulfate (SO_4^{-2})						68
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease	-1	-1	-1	-1	1	-1
Acidity (as $CaCO_3$)	437	0	0	0	0	-
Alkalinity (as $CaCO_3$)	434	453	316	562	302	-
Cations (meq/liter)						9.09
Anions (meq/liter)						8.50
Cation/Anion Balance (%)						3.38

Site ID: 18-2 Comments: Soldier Creek Stream, below mine property.

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/24/85	08/29/85		10/31/85		12/30/85
Time	14:30	11:30		17:29		14:45
Sampler	CPA	CPA		CPA		CPA
Field Measurements						
Flow (gpm)	666	600		542		377
pH (units)	8.85	8.83		8.83		8.59
Dissolved Oxygen (ppm)	7.50	8.20		10.60		8.90
Conductivity (us/cm)	822	853		739		1026
Temperature:						
Water (°F)	67	59		42		38
Air (°F)	69	75		44		36
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids	-4			2		16
Total Dissolved Solids	462	440		476		610
Total Hardness (as $CaCO_3$)		276		321		294
Aluminum (Al)		-0.05				
Arsenic (As)		-0.001				
Barium (Ba)		0.16				
Boron (B)		0.07				
Carbonate (CO_3^{-2})	0	0		0		0
Bicarbonate (HCO_3^-)	290	318		332		454
Cadmium (Cd)		-0.005				
Calcium (Ca)	39	33		40		39
Chloride (Cl^-)	23	13		19		25
Chromium (Cr)		-0.01				
Copper (Cu)		-0.02				
Fluoride (F^-)		0.46				
Iron:						
Total (Fe)	1.31	0.06		0.06		0.23
Dissolved (Fe)		-0.02				
Lead (Pb)		-0.02				
Magnesium (Mg)	50	47		54		48
Manganese (Mn)		0.03				
Mercury (Hg)		-0.0002				
Molybdenum (Mo)		-0.05				
Nickel (Ni)		-0.02				
Nitrogen:						
Ammonia (NH_3)		0.04				
Nitrate (NO_3)-		-0.02				
Nitrite (NO_2)		-0.02				
Potassium (K)	3	2		2		9
Phosphate:						
Total (PO_4^{-3})		?				
Dissolved						
Selenium (Se)		0.006				
Sodium (Na)	71	82		95		168
Sulfate (SO_4^{-2})	103	86		128		124
Sulfide (S^-)		-0.2				
Zinc (Zn)		-0.01				
Oil & Grease	-1	1		-1		-1
Acidity (as $CaCO_3$)		0		0		0
Alkalinity (as $CaCO_3$)		318		332		454
Cations (meq/liter)	9.25	9.16		10.66		13.51
Anions (meq/liter)	8.61	8.53		9.86		12.38
Cation/Anion Balance (%)	3.61	3.58		3.90		4.36

Site ID: E-22 Comments: Soldier Creek Stream, above mine property.

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date	01/25/85	02/26/85	03/15/85	04/30/85	06/03/85	06/27/85
Time	14:50	12:40	13:50	14:40	14:30	13:35
Sampler	DGS	DGS	DGS	DGS	DGS	CPA
Field Measurements						
Flow (gpm)			2693			1759
pH (units)	8.10	8.30	8.30	8.44	7.90	8.79
Dissolved Oxygen (ppm)						9.10
Conductivity (us/cm)				594		733
Temperature:						
Water (°F)	28	28	30	54		62
Air (°F)	24	20	48	64		69
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids	44	112	1470	298	66	52
Total Dissolved Solids	485	495	450	364	338	408
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						0
Bicarbonate (HCO_3^-)						297
Cadmium (Cd)						
Calcium (Ca)						44
Chloride (Cl^-)						8
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)	0.98	1.31	20.1	3.31	0.50	0.14
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						43
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						2
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						49
Sulfate (SO_4^{-2})						58
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease	-1	-1	-1	-1	-	-1
Acidity (as $CaCO_3$)	372	0	0	0	0	-
Alkalinity (as $CaCO_3$)	372	389	333	266	274	-
Cations (meq/liter)						7.93
Anions (meq/liter)						7.38
Cation/Anion Balance (%)						3.60

Site ID: E-22 Comments: Soldier Creek Stream, above mine property.

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/24/85	08/29/85		10/31/85		12/30/85
Time	13:40	9:00		17:15		13:45
Sampler	CPA	CPA		CPA		CPA
Field Measurements						
Flow (gpm)	580	617		595		758
pH (units)	8.81	8.77		8.79		8.97
Dissolved Oxygen (ppm)	7.50	8.90		10.70		9.6
Conductivity (us/cm)	736	832		864		796
Temperature:				43		37
Water (°F)	68	48		43		40
Air (°F)	71	56				
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids	106			-2		32
Total Dissolved Solids	386	422		440		502
Total Hardness (as $CaCO_3$)		297		311		270
Aluminum (Al)		0.10				
Arsenic (As)		-0.001				
Barium (Ba)		0.17				
Boron (B)		0.07				
Carbonate (CO_3^{-2})	0	0		0		0
Bicarbonate (HCO_3^-)	300	335		352		372
Cadmium (Cd)		-0.005				
Calcium (Ca)	35	38		39		31
Chloride (Cl^-)	12	13		16		17
Chromium (Cr)		-0.01				
Copper (Cu)		-0.02				
Fluoride (F^-)		0.42				
Iron:						
Total (Fe)	1.21	0.09		0.04		0.69
Dissolved (Fe)		-0.02				
Lead (Pb)		-0.02				
Magnesium (Mg)	41	49		52		47
Manganese (Mn)		0.02				
Mercury (Hg)		0.0007				
Molybdenum (Mo)		-0.05				
Nickel (Ni)		-0.002				
Nitrogen:						
Ammonia (NH_3)		0.05				
Nitrate (NO_3)-		-0.02				
Nitrite (NO_2)		-0.02				
Potassium (K)	2	2		1		1
Phosphate:						
Total (PO_4^{-3})		?				
Dissolved						
Selenium (Se)		-0.002				
Sodium (Na)	58	37		94		94
Sulfate (SO_4^{-2})	66	60		97		99
Sulfide (S^-)		0.2				
Zinc (Zn)		-0.01				
Oil & Grease	-1	-1		-1		-1
Acidity (as $CaCO_3$)		0		0		0
Alkalinity (as $CaCO_3$)		335		352		372
Cations (meq/liter)	7.72	7.60		10.38		9.57
Anions (meq/liter)	7.72	8.32		9.52		10.00
Cation/Anion Balance (%)	0.04	-4.56		4.32		-2.20

NPDES Discharge Water Monitoring Tables

Site ID: 18-1(belt) 001 Comments: Mine Water Discharge Point

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date	01/28/85	02/26/85	03/14/85	04/26/85	05/28/85	06/28/85
Time	12:30	13:30	14:00	11:00	13:45	8:35
Sampler	DGS	DGS	DGS	DGS	DGS	CPA
Field Measurements						
Flow (gpm)	620	500	200	400	460	400
pH (units)	8.10	8.20	8.30	8.00	7.90	7.92
Dissolved Oxygen (ppm)						
Conductivity (us/cm)				1464		1487
Temperature:						
Water (°F)	55	52	53	55	56	60
Air (°F)						61
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids	8	-4	8	-4	4	-4
Total Dissolved Solids	810	860	795	948	800	856
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						
Bicarbonate (HCO_3^-)						
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)	0.36	0.34	0.41	0.18	0.11	0.27
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						
Manganese (Mn)		0.02	-0.02	0.03	0.01	0.01
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						
Sulfate (SO_4^{-2})						
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease	-1	-1	-1	1	-1	-1
Acidity (as $CaCO_3$)	629	0	0	0	0	0
Alkalinity (as $CaCO_3$)	630	624	630	581	620	673
Cations (meq/liter)						
Anions (meq/liter)						
Cation/Anion Balance (%)						

Site ID: 18-1(belt) 001 Comments: Mine Water Discharge Point

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Ave.
Date	07/19/85	08/29/85	09/27/85	10/31/85	11/21/85	12/10/85	
Time	11:43	13:40	14:49	16:51	13:50	14:40	
Sampler	CPA	CPA	CPA	CPA	CPA	CPA	
Field Measurements							
Flow (gpm)	410	419	402	409	410	396	
pH (units)	7.99	7.86	8.35	8.26	8.54	7.76	
Dissolved Oxygen (ppm)							
Conductivity (us/cm)	1433	1436	1442	1429	1316	1436	
Temperature:							
Water (°F)	60	61	52	51	51	58	
Air (°F)	62	66	53	54	52	57	
Laboratory Analyses (milligrams/liter)							
Total Suspended Solids	4	6	-2	2	6	2	
Total Dissolved Solids	832	800	802	800	876	766	
Total Hardness (as $CaCO_3$)							
Aluminum (Al)							
Arsenic (As)							
Barium (Ba)							
Boron (B)							
Carbonate (CO_3^{-2})			0	0	0	0	
Bicarbonate (HCO_3^-)			644	630	558	650	
Cadmium (Cd)							
Calcium (Ca)							
Chloride (Cl^-)							
Chromium (Cr)							
Copper (Cu)							
Fluoride (F^-)							
Iron:							
Total (Fe)	0.17	0.49	0.43	0.39	0.02	0.73	
Dissolved (Fe)							
Lead (Pb)							
Magnesium (Mg)							
Manganese (Mn)	0.01	0.02	0.02	0.02	-0.01	0.03	
Mercury (Hg)							
Molybdenum (Mo)							
Nickel (Ni)							
Nitrogen:							
Ammonia (NH_3)							
Nitrate (NO_3)-							
Nitrite (NO_2)							
Potassium (K)							
Phosphate:							
Total (PO_4^{-3})							
Dissolved							
Selenium (Se)							
Sodium (Na)							
Sulfate (SO_4^{-2})							
Sulfide (S^-)							
Zinc (Zn)							
Oil & Grease	-1	-1	---	1	1	-1	
Acidity (as $CaCO_3$)	0	0	0	0	0	0	
Alkalinity (as $CaCO_3$)	667	642	644	630	558	650	
Cations (meq/liter)							
Anions (meq/liter)							
Cation/Anion Balance (%)							

Site ID: 18-1(shaft) 003 Comments: Mine Water Discharge Point

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date		08/29/85	09/27/85	10/31/85	11/21/85	12/10/85
Time		14:40	13:05	16:38	12:30	13:30
Sampler		CPA	CPA	CPA	CPA	CPA
Field Measurements						
Flow (gpm)		359	362	376	370	326
pH (units)		8.14	7.87	7.74	8.14	7.98
Dissolved Oxygen (ppm)						
Conductivity (us/cm)		1156	1149	1206	1365	2960
Temperature:						
Water (°F)		58	53	50	47	46
Air (°F)		59	57	51	38	36
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		2	-2	-2	8	8
Total Dissolved Solids		806	944	898	888	1730
Total Hardness (as $CaCO_3$)				311		
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})			0	0	0	0
Bicarbonate (HCO_3^-)			366	366	370	392
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)		0.49	0.97	1.72	1.10	0.09
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						
Manganese (Mn)		0.02	0.02	0.03	0.02	0.01
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						
Sulfate (SO_4^{-2})						
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease		-1	---	-1	1	-1
Acidity (as $CaCO_3$)		0	0	0	0	0
Alkalinity (as $CaCO_3$)		636	366	366	370	392
Cations (meq/liter)						
Anions (meq/liter)						
Cation/Anion Balance (%)						

Spring Water Monitoring Tables

Site ID: G-88 (#8) Comments: Spring, location R.12E., T.13S., Section 4

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						07/01/85
Time						14:00
Sampler						CPA
Field Measurements						
Flow (gpm)						12.5
pH (units)						8.68
Dissolved Oxygen (ppm)						6.2
Conductivity (us/cm)						623
Temperature:						
Water (°F)						64
Air (°F)						72
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						292
Total Hardness (as $CaCO_3$)						247
Aluminum (Al)						0.06
Arsenic (As)						0.001
Barium (Ba)						0.10
Boron (B)						0.07
Carbonate (CO_3^{-2})						0
Bicarbonate (HCO_3^-)						274
Cadmium (Cd)						-0.005
Calcium (Ca)						36
Chloride (Cl^-)						-1
Chromium (Cr)						-0.01
Copper (Cu)						-0.02
Fluoride (F^-)						0.48
Iron:						
Total (Fe)						0.14
Dissolved (Fe)						-0.02
Lead (Pb)						0.05
Magnesium (Mg)						38
Manganese (Mn)						-0.01
Mercury (Hg)						-0.0002
Molybdenum (Mo)						-0.05
Nickel (Ni)						-0.02
Nitrogen:						
Ammonia (NH_3)						-0.02
Nitrate (NO_3)-						-0.02
Nitrite (NO_2)						-0.02
Potassium (K)						1
Phosphate:						
Total (PO_4^{-3})						-0.1
Dissolved						
Selenium (Se)						0.004
Sodium (Na)						34
Sulfate (SO_4^{-2})						23
Sulfide (S^-)						2
Zinc (Zn)						2.07
Oil & Grease						-1
Acidity (as $CaCO_3$)						0
Alkalinity (as $CaCO_3$)						274
Cations (meq/liter)						6.44
Anions (meq/liter)						5.96
Cation/Anion Balance (%)						3.83

Site ID: G-88 Comments: Spring, location R.12E., T.13S., Section 4

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/30/85	08/28/85			11/22/85	
Time	10:50	11:50			9:15	
Sampler	CPA	CPA			CPA	
Field Measurements						
Flow (gpm)	6.5	4.8			4.1	
pH (units)	8.67	8.78			8.65	
Dissolved Oxygen (ppm)	7.60	6.80			6.80	
Conductivity (us/cm)	612	610			593	
Temperature:						
Water (°F)	56	66			32	
Air (°F)	74	78			26	
Laboratory Analyses						
(milligrams/liter)		2				
Total Suspended Solids		270				
Total Dissolved Solids					314	
Total Hardness (as $CaCO_3$)					262	
Aluminum (Al)					0.32	
Arsenic (As)					-0.001	
Barium (Ba)					0.1	
Boron (B)					0.04	
Carbonate (CO_3^{-2})		0			0	
Bicarbonate (HCO_3^-)		259			300	
Cadmium (Cd)					0.009	
Calcium (Ca)		32			39	
Chloride (Cl^-)		1			5	
Chromium (Cr)					-0.01	
Copper (Cu)					-0.02	
Fluoride (F^-)					0.43	
Iron:						
Total (Fe)		0.14			0.33	
Dissolved (Fe)					0.16	
Lead (Pb)					-0.02	
Magnesium (Mg)		36			40	
Manganese (Mn)					0.01	
Mercury (Hg)					-0.0002	
Molybdenum (Mo)					-0.05	
Nickel (Ni)					-0.02	
Nitrogen:						
Ammonia (NH_3)					0.09	
Nitrate (NO_3)-					0.01	
Nitrite (NO_2)					0.01	
Potassium (K)		1			1	
Phosphate:						
Total (PO_4^{-3})					-0.1	
Dissolved						
Selenium (Se)					0.004	
Sodium (Na)		35			46	
Sulfate (SO_4^{-2})		27			33	
Sulfide (S^-)					-0.2	
Zinc (Zn)		-0.01			0.03	
Oil & Grease		-1			1	
Acidity (as $CaCO_3$)					0	
Alkalinity (as $CaCO_3$)					300	
Cations (meq/liter)		6.12			7.28	
Anions (meq/liter)		5.78			6.83	
Cation/Anion Balance (%)		2.88			3.19	

Site ID: G-89 (#10) Comments: Spring, location R.12E., T.13S., Section 5

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/27/85
Time						12:35
Sampler						CPA
Field Measurements						
Flow (gpm)						3.2
pH (units)						8.82
Dissolved Oxygen (ppm)						4.3
Conductivity (us/cm)						1098
Temperature:						
Water (°F)						56
Air (°F)						66
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						600
Total Hardness (as $CaCO_3$)						184
Aluminum (Al)						0.05
Arsenic (As)						-0.001
Barium (Ba)						0.36
Boron (B)						0.14
Carbonate (CO_3^{-2})						0
Bicarbonate (HCO_3^-)						458
Cadmium (Cd)						-0.005
Calcium (Ca)						21
Chloride (Cl^-)						7
Chromium (Cr)						-0.01
Copper (Cu)						-0.02
Fluoride (F^-)						0.30
Iron:						
Total (Fe)						-0.02
Dissolved (Fe)						-0.02
Lead (Pb)						0.05
Magnesium (Mg)						32
Manganese (Mn)						0.01
Mercury (Hg)						0.0024
Molybdenum (Mo)						-0.05
Nickel (Ni)						-0.02
Nitrogen:						
Ammonia (NH_3)						0.34
Nitrate (NO_3)-						-0.02
Nitrite (NO_2)						-0.02
Potassium (K)						3
Phosphate:						
Total (PO_4^{-3})						-0.1
Dissolved						
Selenium (Se)						-0.002
Sodium (Na)						179
Sulfate (SO_4^{-2})						72
Sulfide (S^-)						13
Zinc (Zn)						1.04
Oil & Grease						11
Acidity (as $CaCO_3$)						0
Alkalinity (as $CaCO_3$)						458
Cations (meq/liter)						11.6
Anions (meq/liter)						10.9
Cation/Anion Balance (%)						3.38

Site ID: G-89 Comments: Spring, location R.12E., T.13S., Section 5

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/24/85	08/28/85			11/22/85	
Time	13:15	11:50			7:55	
Sampler	CPA	CPA			CPA	
Field Measurements						
Flow (gpm)	2.9	4.8			4.9	
pH (units)	8.72	8.78			7.64	
Dissolved Oxygen (ppm)	5.20	6.80			3.60	
Conductivity (us/cm)	1100	610			1039	
Temperature:						
Water (°F)	63	66			47	
Air (°F)	72	78			28	
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		-2				
Total Dissolved Solids		608			604	
Total Hardness (as $CaCO_3$)					195	
Aluminum (Al)					0.08	
Arsenic (As)					-0.001	
Barium (Ba)					0.41	
Boron (B)					0.10	
Carbonate (CO_3^{-2})		0			0	
Bicarbonate (HCO_3^-)		484			482	
Cadmium (Cd)					-0.005	
Calcium (Ca)		15			24	
Chloride (Cl^-)		40			19	
Chromium (Cr)					-0.01	
Copper (Cu)					-0.02	
Fluoride (F^-)					0.28	
Iron:						
Total (Fe)		0.02			0.09	
Dissolved (Fe)					0.07	
Lead (Pb)					-0.02	
Magnesium (Mg)		31			33	
Manganese (Mn)					0.02	
Mercury (Hg)					0.0008	
Molybdenum (Mo)					-0.05	
Nickel (Ni)					-0.02	
Nitrogen:						
Ammonia (NH_3)					0.32	
Nitrate (NO_3)-					0.01	
Nitrite (NO_2)					0.01	
Potassium (K)		3			3	
Phosphate:						
Total (PO_4^{-3})					-0.1	
Dissolved						
Selenium (Se)					0.003	
Sodium (Na)		187			208	
Sulfate (SO_4^{-2})		6			130	
Sulfide (S^-)					-0.2	
Zinc (Zn)		-0.01			0.02	
Oil & Grease		-1			4	
Acidity (as $CaCO_3$)					0	
Alkalinity (as $CaCO_3$)					482	
Cations (meq/liter)		11.6			13.14	
Anions (meq/liter)		10.9			12.90	
Cation/Anion Balance (%)		2.98			0.92	

Site ID: G-90 (S8-1) (#127) Comments: Spring, location R.12E., T.13S., Section 8

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/28/85
Time						15:00
Sampler						CPA
Field Measurements						
Flow (gpm)						14.3
pH (units)						8.54
Dissolved Oxygen (ppm)						7.70
Conductivity (us/cm)						676
Temperature:						
Water (°F)						56
Air (°F)						83
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						312
Total Hardness (as $CaCO_3$)						292
Aluminum (Al)						0.22
Arsenic (As)						0.001
Barium (Ba)						0.12
Boron (B)						0.05
Carbonate (CO_3^{-2})						0
Bicarbonate (HCO_3^-)						303
Cadmium (Cd)						-0.005
Calcium (Ca)						59
Chloride (Cl^-)						-1
Chromium (Cr)						-0.01
Copper (Cu)						-0.02
Fluoride (F^-)						0.31
Iron:						
Total (Fe)						0.40
Dissolved (Fe)						-0.02
Lead (Pb)						0.05
Magnesium (Mg)						35
Manganese (Mn)						0.01
Mercury (Hg)						-0.0002
Molybdenum (Mo)						-0.05
Nickel (Ni)						-0.02
Nitrogen:						
Ammonia (NH_3)						0.15
Nitrate (NO_3)-						-0.02
Nitrite (NO_2)						-0.02
Potassium (K)						1
Phosphate:						
Total (PO_4^{-3})						-0.1
Dissolved						
Selenium (Se)						-0.002
Sodium (Na)						12
Sulfate (SO_4^{-2})						14
Sulfide (S^-)						-0.2
Zinc (Zn)						0.307
Oil & Grease						-1
Acidity (as $CaCO_3$)						0
Alkalinity (as $CaCO_3$)						303
Cations (meq/liter)						6.37
Anions (meq/liter)						6.35
Cation/Anion Balance (%)						0.16

Site ID: G-90 (S8-1) Comments: Spring, location R.12E., T.13S., Section 8

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/30/85	08/28/85				
Time	11:45	12:55				
Sampler	CPA	CPA				
Field Measurements						
Flow (gpm)	7.6	3.0				
pH (units)	8.48	8.54				
Dissolved Oxygen (ppm)	7.90	7.50				
Conductivity (us/cm)	651	659				
Temperature:						
Water (°F)	53	54				
Air (°F)	62	68				
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		104				
Total Dissolved Solids		330				
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})		0				
Bicarbonate (HCO_3^-)		324				
Cadmium (Cd)						
Calcium (Ca)		68				
Chloride (Cl^-)		-1				
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)		2.59				
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)		38				
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)		4				
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)		12				
Sulfate (SO_4^{-2})		21				
Sulfide (S^-)						
Zinc (Zn)		0.02				
Oil & Grease		-1				
Acidity (as $CaCO_3$)						
Alkalinity (as $CaCO_3$)						
Cations (meq/liter)		7.15				
Anions (meq/liter)		6.92				
Cation/Anion Balance (%)		1.61				

Site ID: S 31-1 Comments: Spring, location R. 12E., T. 12S., Section 31

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/28/85
Time						11:20
Sampler						CPA
Field Measurements						
Flow (gpm)						60
pH (units)						8.53
Dissolved Oxygen (ppm)						8.30
Conductivity (us/cm)						570
Temperature:						
Water (°F)						52
Air (°F)						68
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						318
Total Hardness (as $CaCO_3$)						279
Aluminum (Al)						0.10
Arsenic (As)						-0.001
Barium (Ba)						0.18
Boron (B)						0.06
Carbonate (CO_3^{-2})						0
Bicarbonate (HCO_3^-)						263
Cadmium (Cd)						-0.005
Calcium (Ca)						54
Chloride (Cl^-)						2
Chromium (Cr)						-0.01
Copper (Cu)						-0.02
Fluoride (F^-)						0.32
Iron:						
Total (Fe)						0.09
Dissolved (Fe)						-0.02
Lead (Pb)						0.03
Magnesium (Mg)						35
Manganese (Mn)						0.01
Mercury (Hg)						0.0024
Molybdenum (Mo)						-0.05
Nickel (Ni)						-0.02
Nitrogen:						
Ammonia (NH_3)						0.15
Nitrate (NO_3)-						-0.02
Nitrite (NO_2)						-0.02
Potassium (K)						1
Phosphate:						
Total (PO_4^{-3})						-0.1
Dissolved						
Selenium (Se)						-0.002
Sodium (Na)						15
Sulfate (SO_4^{-2})						37
Sulfide (S^-)						-0.2
Zinc (Zn)						0.637
Oil & Grease						-1
Acidity (as $CaCO_3$)						0
Alkalinity (as $CaCO_3$)						263
Cations (meq/liter)						6.26
Anions (meq/liter)						6.09
Cation/Anion Balance (%)						1.32

Site ID: S 31-1 Comments: Spring, location R. 12E., T. 12S., Section 31

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/30/85	08/29/85				
Time	13:50	10:15				
Sampler	CPA	CPA				
Field Measurements						
Flow (gpm)	27.3	14.3				
pH (units)	8.60	8.73				
Dissolved Oxygen (ppm)	7.80	7.50				
Conductivity (us/cm)	490	535				
Temperature:						
Water (F)	59	58				
Air (F)	64	70				
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		4				
Total Dissolved Solids		264				
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})		10				
Bicarbonate (HCO_3^-)		206				
Cadmium (Cd)						
Calcium (Ca)		37				
Chloride (Cl^-)		3				
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)		0.15				
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)		37				
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)		1				
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)		18				
Sulfate (SO_4^{-2})		47				
Sulfide (S^-)						
Zinc (Zn)		-0.01				
Oil & Grease		-1				
Acidity (as $CaCO_3$)						
Alkalinity (as $CaCO_3$)						
Cations (meq/liter)		5.70				
Anions (meq/liter)		5.39				
Cation/Anion Balance (%)		2.80				

Underground Water Monitoring Tables

Site ID: UG-3N8E

Comments: Groundwater, Third North Eighth East area

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date					11/21/85	12/10/85
Time					10:50	12:15
Sampler					CPA	CPA
Field Measurements						
Flow (gpm)					3.3	6.7
pH (units)					8.37	8.06
Dissolved Oxygen (ppm)						
Conductivity (us/cm)					792	836
Temperature:						
Water (°F)					51	50
Air (°F)					50	46
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids					506	
Total Hardness (as $CaCO_3$)					280	
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})					0	
Bicarbonate (HCO_3^-)					426	
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)					0.04	
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)					42	
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)					11	
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)					110	
Sulfate (SO_4^{-2})					62	
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease						
Acidity (as $CaCO_3$)					0	
Alkalinity (as $CaCO_3$)					426	
Cations (meq/liter)					10.72	
Anions (meq/liter)					9.99	
Cation/Anion Balance (%)					3.52	

Site ID: UG-3N Belt Comments: Groundwater, Third North Belt Entry @ stopping 51

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date					11/21/85	12/10/85
Time					11:20	12:45
Sampler					CPA	CPA
Field Measurements						
Flow (gpm)					5.4	5.8
pH (units)					7.95	7.86
Dissolved Oxygen (ppm)						
Conductivity (us/cm)					1214	1236
Temperature:						
Water (°F)					57	56
Air (°F)					51	53
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids					708	
Total Hardness (as $CaCO_3$)					285	
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})					0	
Bicarbonate (HCO_3^-)					650	
Cadmium (Cd)						
Calcium (Ca)					50	
Chloride (Cl^-)					17	
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)					-0.02	
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)					39	
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)					15	
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)					199	
Sulfate (SO_4^{-2})					16	
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease						
Acidity (as $CaCO_3$)					0	
Alkalinity (as $CaCO_3$)					650	
Cations (meq/liter)					14.84	
Anions (meq/liter)					13.81	
Cation/Anion Balance (%)					3.60	

Site ID: UG-3N Comments: Groundwater, Third North Gas Bleeder

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/18/85
Time						8:45
Sampler						CPA
Field Measurements						
Flow (gpm)						3.8
pH (units)						7.88
Dissolved Oxygen (ppm)						
Conductivity (us/cm)						764
Temperature:						
Water (°F)						56
Air (°F)						57
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						
Bicarbonate (HCO_3^-)						
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)						
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						
Sulfate (SO_4^{-2})						
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease						
Acidity (as $CaCO_3$)						
Alkalinity (as $CaCO_3$)						
Cations (meq/liter)						
Anions (meq/liter)						
Cation/Anion Balance (%)						

Site ID: UG-3N Comments: Groundwater, Third North Gas Bleeder

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/19/85	08/30/85	09/27/85	11/19/85	11/21/85	12/10/85
Time	9:36	9:20	12:50	13:40	11:55	13:10
Sampler	CPA	CPA	CPA	CPA	CPA	CPA
Field Measurements						
Flow (gpm)	3.1	3.2	2.9	1.0	0.9	1.2
pH (units)	8.65	8.83	8.24	8.41	8.36	8.30
Dissolved Oxygen (ppm)						
Conductivity (us/cm)	699	717	736	731	724	744
Temperature:						
Water (°F)	58	55	52	56	55	50
Air (°F)	59	60	54	52	48	45
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		-2				
Total Dissolved Solids		386	386		386	
Total Hardness (as $CaCO_3$)			291		282	
Aluminum (Al)			0.74			
Arsenic (As)			-0.001			
Barium (Ba)			1.89			
Boron (B)			0.29			
Carbonate (CO_3^{-2})		0	0		0	
Bicarbonate (HCO_3^-)		343	356		350	
Cadmium (Cd)			-0.005			
Calcium (Ca)		36	41		39	
Chloride (Cl^-)		-1	3		4	
Chromium (Cr)			-0.01			
Copper (Cu)			-0.02			
Fluoride (F^-)			1.30			
Iron:						
Total (Fe)		0.02	0.11		-0.02	
Dissolved (Fe)			-0.02			
Lead (Pb)			-0.02			
Magnesium (Mg)		42	46		45	
Manganese (Mn)			-0.01			
Mercury (Hg)			-0.0002			
Molybdenum (Mo)			-0.05			
Nickel (Ni)			-0.02			
Nitrogen:						
Ammonia (NH_3)			0.73			
Nitrate (NO_3)-			0.01			
Nitrite (NO_2)			0.01			
Potassium (K)		11	11		9	
Phosphate:						
Total (PO_4^{-3})			-0.1			
Dissolved						
Selenium (Se)			-0.002			
Sodium (Na)		54	53		61	
Sulfate (SO_4^{-2})		41	39		45	
Sulfide (S^-)			2.4			
Zinc (Zn)			0.02			
Oil & Grease			0			
Acidity (as $CaCO_3$)			0		0	
Alkalinity (as $CaCO_3$)			356		350	
Cations (meq/liter)		7.91	8.44		8.56	
Anions (meq/liter)		7.72	8.02		8.06	
Cation/Anion Balance (%)		1.18	2.55		3.01	

Site ID: UG-Shaft Comments: Groundwater, Drippers from shaft area

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/19/85
Time						12:15
Sampler						CPA
Field Measurements						
Flow (gpm)						5.2
pH (units)						7.42
Dissolved Oxygen (ppm)						
Conductivity (us/cm)						1275
Temperature:						
Water (°F)						46
Air (°F)						52
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						
Bicarbonate (HCO_3^-)						
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)						
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						
Sulfate (SO_4^{-2})						
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease						
Acidity (as $CaCO_3$)						
Alkalinity (as $CaCO_3$)						
Cations (meq/liter)						
Anions (meq/liter)						
Cation/Anion Balance (%)						

Site ID: UG-Shaft Comments: Groundwater, Drippers from shaft area

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/19/85	08/30/85	09/27/85	11/19/85	11/21/85	12/10/85
Time	9:52	8:50	13:15	14:10	12:50	13:35
Sampler	CPA	CPA	CPA	CPA	CPA	CPA
Field Measurements						
Flow (gpm)	4.1	5.1	4.4	4.8	4.6	5.6
pH (units)	7.15	7.13	7.31	7.23	7.19	7.24
Dissolved Oxygen (ppm)						
Conductivity (us/cm)	1241	1235	1251	1187	1177	1296
Temperature:						
Water (°F)	48	49	53	44	45	44
Air (°F)	56	59	56	49	45	43
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		-2				
Total Dissolved Solids		804	778		748	
Total Hardness (as $CaCO_3$)			540		576	
Aluminum (Al)			-0.05			
Arsenic (As)			-0.001			
Barium (Ba)			0.06			
Boron (B)			0.17			
Carbonate (CO_3^{-2})		0	0		0	
Bicarbonate (HCO_3^-)		437	404		416	
Cadmium (Cd)			-0.005			
Calcium (Ca)		96	93		99	
Chloride (Cl^-)		15	16		15	
Chromium (Cr)			-0.01			
Copper (Cu)			-0.02			
Fluoride (F^-)			0.80			
Iron:						
Total (Fe)		0.02	0.02		0.03	
Dissolved (Fe)			0.03			
Lead (Pb)			-0.02			
Magnesium (Mg)		77	75		80	
Manganese (Mn)			0.03			
Mercury (Hg)			-0.0002			
Molybdenum (Mo)			-0.05			
Nickel (Ni)			-0.02			
Nitrogen:						
Ammonia (NH_3)			0.55			
Nitrate (NO_3)-			0.01			
Nitrite (NO_2)			0.01			
Potassium (K)		13	12		10	
Phosphate:						
Total (PO_4^{-3})			-0.1			
Dissolved						
Selenium (Se)			-0.002			
Sodium (Na)		74	67		79	
Sulfate (SO_4^{-2})		280	274		255	
Sulfide (S^-)			11.3			
Zinc (Zn)			-0.01			
Oil & Grease			7			
Acidity (as $CaCO_3$)			0		0	
Alkalinity (as $CaCO_3$)			404		416	
Cations (meq/liter)		14.7	14.06		15.25	
Anions (meq/liter)		15.0	14.28		14.09	
Cation/Anion Balance (%)		-1.12	-0.78		3.95	

Site ID: UG-MN3W(area) Comments: Groundwater, Main North Third West

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/19/85
Time						10:00
Sampler						CPA
Field Measurements						
Flow (gpm)						1.9
pH (units)						8.70
Dissolved Oxygen (ppm)						
Conductivity (us/cm)						1407
Temperature:						
Water (°F)						49
Air (°F)						56
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						
Bicarbonate (HCO_3^-)						
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)						
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						
Sulfate (SO_4^{-2})						
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease						
Acidity (as $CaCO_3$)						
Alkalinity (as $CaCO_3$)						
Cations (meq/liter)						
Anions (meq/liter)						
Cation/Anion Balance (%)						

Site ID: UG-MN3W(area) Comments: Groundwater, Main North Third West

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/19/85	08/30/85	09/27/85	11/19/85	11/21/85	12/10/85
Time	11:18	12:55	14:00	12:15	14:20	14:59
Sampler	CPA	CPA	CPA	CPA	CPA	CPA
Field Measurements						
Flow (gpm)	2.0	2.1	1.4	2.3	2.3	2.5
pH (units)	8.66	8.83	8.62	8.92	8.91	8.87
Dissolved Oxygen (ppm)						
Conductivity (us/cm)	1399	1375	1386	1256	1248	1301
Temperature:						
Water (°F)	57	56	53	53	52	52
Air (°F)	59	60	56	54	54	55
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		2				
Total Dissolved Solids		790	788		812	
Total Hardness (as $CaCO_3$)			166		166	
Aluminum (Al)			-0.05			
Arsenic (As)			-0.001			
Barium (Ba)			1.11			
Boron (B)			0.91			
Carbonate (CO_3^{-2})		0	132		44	
Bicarbonate (HCO_3^-)		653	552		638	
Cadmium (Cd)			-0.005			
Calcium (Ca)		39	14		14	
Chloride (Cl^-)		28	31		30	
Chromium (Cr)			-0.01			
Copper (Cu)			-0.02			
Fluoride (F^-)			166			
Iron:						
Total (Fe)		0.57	0.02		-0.02	
Dissolved (Fe)			-0.02			
Lead (Pb)			-0.02			
Magnesium (Mg)		32	32		32	
Manganese (Mn)			-0.01			
Mercury (Hg)			-0.0002			
Molybdenum (Mo)			-0.05			
Nickel (Ni)			-0.02			
Nitrogen:						
Ammonia (NH_3)			0.04			
Nitrate (NO_3)-			0.35			
Nitrite (NO_2)			0.01			
Potassium (K)		20	21		18	
Phosphate:						
Total (PO_4^{-3})			-0.1			
Dissolved						
Selenium (Se)			-0.002			
Sodium (Na)		238	257		288	
Sulfate (SO_4^{-2})		72	45		35	
Sulfide (S^-)			-0.2			
Zinc (Zn)			-0.01			
Oil & Grease			0			
Acidity (as $CaCO_3$)			0		0	
Alkalinity (as $CaCO_3$)			684		682	
Cations (meq/liter)		15.6	15.18		16.46	
Anions (meq/liter)		15.4	15.49		15.22	
Cation/Anion Balance (%)		0.68	-1.01		3.91	

Site ID: UG-2N(area) Comments: Groundwater, Second North area

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/18/85
Time						14:00
Sampler						CPA
Field Measurements						
Flow (gpm)						58.7
pH (units)						7.92
Dissolved Oxygen (ppm)						
Conductivity (us/cm)						1476
Temperature:						
Water (°F)						56
Air (°F)						60
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						
Bicarbonate (HCO_3^-)						
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)						
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						
Sulfate (SO_4^{-2})						
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease						
Acidity (as $CaCO_3$)						
Alkalinity (as $CaCO_3$)						
Cations (meq/liter)						
Anions (meq/liter)						
Cation/Anion Balance (%)						

Site ID: UG-2N(area) Comments: Groundwater, Second North area

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/19/85	08/30/85	09/27/85	11/19/85	11/21/85	12/10/85
Time	10:55	10:30	15:00	11:50	14:00	14:30
Sampler	CPA	CPA	CPA	CPA	CPA	CPA
Field Measurements						
Flow (gpm)	43.1	78.4	62.7	372	389	401
pH (units)	7.83	7.97	7.83	7.42	8.56	7.69
Dissolved Oxygen (ppm)						
Conductivity (us/cm)	1402	1371	1403	1310	1308	1429
Temperature:						
Water (°F)	60	61	56	52	51	58
Air (°F)	61	62	58	53	52	57
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		-2				
Total Dissolved Solids		620	794		880	
Total Hardness (as $CaCO_3$)			244		234	
Aluminum (Al)			-0.05			
Arsenic (As)			-0.001			
Barium (Ba)			0.68			
Boron (B)			0.55			
Carbonate (CO_3^{-2})		0	0		0	
Bicarbonate (HCO_3^-)		528	648		564	
Cadmium (Cd)			-0.005			
Calcium (Ca)		48	40		28	
Chloride (Cl^-)		7	31		34	
Chromium (Cr)			-0.01			
Copper (Cu)			-0.02			
Fluoride (F^-)			3.42			
Iron:						
Total (Fe)		-0.02	0.43		0.03	
Dissolved (Fe)			0.44			
Lead (Pb)			-0.02			
Magnesium (Mg)		38	35		40	
Manganese (Mn)			0.02			
Mercury (Hg)			-0.0002			
Molybdenum (Mo)			-0.05			
Nickel (Ni)			-0.02			
Nitrogen:						
Ammonia (NH_3)			1.03			
Nitrate (NO_3)-			0.01			
Nitrite (NO_2)			0.01			
Potassium (K)		15	19		19	
Phosphate:						
Total (PO_4^{-3})			-0.1			
Dissolved						
Selenium (Se)			0.006			
Sodium (Na)		147	235		274	
Sulfate (SO_4^{-2})		51	76		183	
Sulfide (S^-)			0.4			
Zinc (Zn)			-0.01			
Oil & Grease			---			
Acidity (as $CaCO_3$)			0		0	
Alkalinity (as $CaCO_3$)			648		564	
Cations (meq/liter)		12.4	15.70		17.23	
Anions (meq/liter)		11.8	15.42		16.08	
Cation/Anion Balance (%)		2.26	0.90		3.45	

Site ID: UG-2N2E Comments: Groundwater, Second North Second East

	Jan.	Feb.	Mar.	Apr.	May	Jun.
Date						06/18/85
Time						12:00
Sampler						CPA
Field Measurements						
Flow (gpm)						1.1
pH (units)						7.52
Dissolved Oxygen (ppm)						
Conductivity (us/cm)						1112
Temperature:						
Water (°F)						56
Air (°F)						58
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids						
Total Dissolved Solids						
Total Hardness (as $CaCO_3$)						
Aluminum (Al)						
Arsenic (As)						
Barium (Ba)						
Boron (B)						
Carbonate (CO_3^{-2})						
Bicarbonate (HCO_3^-)						
Cadmium (Cd)						
Calcium (Ca)						
Chloride (Cl^-)						
Chromium (Cr)						
Copper (Cu)						
Fluoride (F^-)						
Iron:						
Total (Fe)						
Dissolved (Fe)						
Lead (Pb)						
Magnesium (Mg)						
Manganese (Mn)						
Mercury (Hg)						
Molybdenum (Mo)						
Nickel (Ni)						
Nitrogen:						
Ammonia (NH_3)						
Nitrate (NO_3)-						
Nitrite (NO_2)						
Potassium (K)						
Phosphate:						
Total (PO_4^{-3})						
Dissolved						
Selenium (Se)						
Sodium (Na)						
Sulfate (SO_4^{-2})						
Sulfide (S^-)						
Zinc (Zn)						
Oil & Grease						
Acidity (as $CaCO_3$)						
Alkalinity (as $CaCO_3$)						
Cations (meq/liter)						
Anions (meq/liter)						
Cation/Anion Balance (%)						

Site ID: UG-2N2E Comments: Groundwater, Second North Second East

	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Date	07/19/85	08/30/85	09/27/85	11/19/85	11/21/85	12/10/85
Time	10:38	11:00	14:30	11:10	13:20	14:10
Sampler	CPA	CPA	CPA	CPA	CPA	CPA
Field Measurements						
Flow (gpm)	1.2	0.8	0.5	0.8	0.8	0.9
pH (units)	7.49	7.76	7.61	7.42	7.45	7.32
Dissolved Oxygen (ppm)						
Conductivity (us/cm)	1118	1070	1319	1062	1050	1146
Temperature:						
Water (°F)	56	58	54	55	56	55
Air (°F)	59	60	57	55	54	58
Laboratory Analyses (milligrams/liter)						
Total Suspended Solids		-2				
Total Dissolved Solids		802	618		600	
Total Hardness (as $CaCO_3$)			287		290	
Aluminum (Al)			-0.05			
Arsenic (As)			-0.001			
Barium (Ba)			3.54			
Boron (B)			0.46			
Carbonate (CO_3^{-2})		59	0		0	
Bicarbonate (HCO_3^-)		606	534		552	
Cadmium (Cd)			-0.005			
Calcium (Ca)		14	49		52	
Chloride (Cl^-)		29	11		10	
Chromium (Cr)			-0.01			
Copper (Cu)			-0.02			
Fluoride (F^-)			1.30			
Iron:						
Total (Fe)		0.08	0.02		-0.02	
Dissolved (Fe)			-0.02			
Lead (Pb)			-0.02			
Magnesium (Mg)		30	40		39	
Manganese (Mn)			-0.01			
Mercury (Hg)			-0.0002			
Molybdenum (Mo)			-0.05			
Nickel (Ni)			-0.02			
Nitrogen:						
Ammonia (NH_3)			1.16			
Nitrate (NO_3)-			0.01			
Nitrite (NO_2)			0.01			
Potassium (K)		22	14		12	
Phosphate:						
Total (PO_4^{-3})			-0.1			
Dissolved						
Selenium (Se)			-0.002			
Sodium (Na)		275	138		160	
Sulfate (SO_4^{-2})		49	47		39	
Sulfide (S^-)			18			
Zinc (Zn)			-0.01			
Oil & Grease			---			
Acidity (as $CaCO_3$)			0		0	
Alkalinity (as $CaCO_3$)			534		552	
Cations (meq/liter)		15.8	12.17		13.15	
Anions (meq/liter)		15.1	11.98		12.14	
Cation/Anion Balance (%)		2.23	0.79		3.99	

Vegetation Data and Observations

Vegetation information on SCM's riparian reference area and three field trial study sites was obtained by July 20, 1985. This data was collected and compiled by Mr. Robert Thompson. The reduced information was submitted to UDOGM in letter form on October 9, 1985 and is included in Appendix 4. Additional information was requested by Mr. Lynn Kunzler of UDOGM and is provided in the following tables.

Two sites were fenced in 1985 to fulfill a request by UDOGM. The two sites are the riparian reference area and field trial study site #2. Fencing was completed on September 23, 1985 and should conform to the Bureau of Land Management's Section 02445 standards. Drawings E029 and D143 depict the four sites where vegetation data was collected and the two fenced sites. These drawings are included in Appendix 4.

A fourth field trial study site was formally dropped from SCCC's monitoring program during 1985. This site was dropped because of a need to keep all areas surrounding electrical substations free of grass, weeds or combustible materials and the extremely small size of the site. UDOGM's approval to drop this site was granted on January 8, 1986 and a copy of the final approval is included in Appendix 3.

Vegetation Data Tables

iparian Reference Area, Site #1 - Below REI (% Cover)

Species	Plot Numbers #1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Poa prantensis	1.0	9.0	2.0	-	5.0	-	-	5.0	5.0	8.0	3.50
Oryzopsis hymenoides	1.0	-	-	0.1	-	-	-	-	-	-	0.11
Agropyron smithii	-	0.1	-	-	-	-	-	-	-	-	0.01
Agropyron cristatum	-	-	-	-	-	-	5.0	-	-	-	0.50
Sporobolus cryptandrus	-	-	-	-	-	0.1	-	-	-	-	0.01
Forbs											
Artemisia dracunculus	-	-	0.1	-	0.2	0.5	0.2	-	-	-	0.10
Aster adscendens	-	-	-	-	-	-	0.5	4.5	-	-	0.50
Astragalus tenellus	-	0.6	-	-	0.4	-	-	-	-	-	0.10
Cynoglossum officinale	-	0.5	-	-	0.1	-	0.1	0.3	0.4	-	0.14
Cirsium scariosum	0.2	0.1	0.1	-	0.2	-	0.4	0.4	0.4	0.4	0.22
Gilia aggregata	-	-	-	-	-	-	-	-	-	0.1	0.01
Melilotus officinalis	-	-	-	0.2	-	-	-	-	-	-	0.02
Lathyrus lanszwertii	0.1	-	-	-	-	-	-	-	-	-	0.01
Solidago nana	-	-	-	-	-	-	-	-	-	0.2	0.02
araxacum officinale	0.1	0.1	-	-	-	-	-	-	-	-	0.02
Shrubs & Trees											
Clematis ligusticifolia	0.2	0.1	0.5	-	-	-	-	0.2	0.2	-	0.12
Populus angustifolia	-	-	-	-	0.2	0.4	-	-	-	-	0.06
Total	2.6	10.5	2.7	0.3	6.1	1.0	6.2	10.4	6.0	8.7	5.45

Summation of all samples - 54.50
Standard deviation of the sample - 3.71
Variance of the sample - 13.46
Standard deviation of the population - 3.52
Variance of the population - 12.39

Riparian Reference Area, Site #1 - Below REI (Productivity lbs/acre)

Species	Plot Numbers #1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Poa prantensis	10	50	25	-	25	-	-	40	60	70	28.0
Oryzopsis hymenoides	10	-	-	10	-	-	-	-	-	-	2.0
Agropyron smithii	-	10	-	-	-	-	-	-	-	-	1.0
Agropyron cristatum	-	-	-	-	-	-	80	-	-	-	8.0
Sporobolus cryptandrus	-	-	-	-	-	5	-	-	-	-	0.5
Forbs											
Artemisia dracunculus	-	-	3	-	10	20	5	-	-	-	3.8
Aster adscendens	-	-	-	-	-	-	20	100	-	-	12.0
Astragalus tenellus	-	20	-	-	15	-	-	-	-	-	3.5
Cynoglossum officinale	-	5	-	-	5	-	5	40	20	-	7.5
Cirsium scariosum	5	5	5	-	20	-	10	20	100	20	18.5
Gilia aggregata	-	-	-	-	-	-	-	-	-	5	0.5
Melilotus officinalis	-	-	-	10	-	-	-	-	-	-	1.0
Lathyrus lanszwertii	5	-	-	-	-	-	-	-	-	-	0.5
Solidago nana	-	-	-	-	-	-	-	-	-	10	1.0
Taraxacum officinale	3	5	-	-	-	-	-	-	-	-	0.8
Shrubs & Trees											
Clematis ligusticifolia	10	15	40	-	-	-	-	30	30	-	12.5
Populus angustifolia	-	10	-	-	20	10	-	-	-	-	40
Total	43	120	73	20	95	35	120	230	210	105	105.1

Summation of all samples - 1051.00
Standard deviation of the sample - 70.07
Variance of the sample - 4910.32
Standard deviation of the population - 66.48
Variance of the population - 4419.29

Field Trial Study, Site #2 - Fan Site (% Cover)

Species	Plot Numbers #1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Agrypyron cristatum	0.5	0.2	0.2	1.0	0.5	0.3	0.2	0.3	0.4	0.6	0.42
Agropyron intermedium	0.1	-	-	-	-	-	-	-	0.1	-	0.02
Forbs											
Medicago sativa-ladak	1.3	2.5	2.2	1.0	1.1	0.5	0.6	1.0	1.1	1.1	1.24
Melilotus officinalis	2.0	1.5	3.5	1.0	0.7	0.5	0.4	0.4	0.6	0.8	1.14
Sanguisorba minor	0.1	-	-	-	-	-	-	0.1	-	-	0.02
Linum lewisii	-	0.1	-	-	-	-	-	-	-	-	0.01
Iva axillaris	-	-	0.3	-	-	-	-	-	-	-	0.03
Grindelia squarrosa	-	-	-	0.5	0.2	0.3	0.3	-	0.1	-	0.14
Kochia scopario	-	-	-	-	-	0.1	-	-	-	-	0.01
Total	4.0	4.3	6.2	3.5	2.5	1.7	1.5	1.8	2.3	2.5	3.03

Summation of all samples - 30.3
tandard deviation of the sample - 1.47
Variance of the sample - 2.17
Standard deviation of the population - 1.40
Variance of the population - 1.95

ield Trial Study, Site #2 - Fan Site (Productivity lbs/acre)

Species	Plot Numbers #1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Agropyron cristatum	5	5	5	20	5	5	5	5	5	10	7.0
Agropyron intermedium	3	-	-	-	-	-	-	-	2	-	0.5
Forbs											
Medicago sativa-ladak	100	110	60	20	90	20	10	20	30	35	49.5
Melilotus officinalis	130	100	100	60	30	20	15	10	25	20	51.0
Sanguisorba minor	3	-	-	-	-	-	-	5	-	-	0.8
Linum lewisii	-	3	-	-	-	-	-	-	-	-	0.3
Iva axillaris	-	-	15	-	-	-	-	-	-	-	1.5
Grindelia squarrosa	-	-	-	30	20	10	15	-	2	-	7.7
Kochia scopario	-	-	-	-	-	10	-	-	-	-	1.0
Total	241	218	180	130	145	65	45	40	64	65	119.3

Summation of all samples - 1193.00
Standard deviation of the sample - 74.37
Variance of the sample - 5530.68
Standard deviation of the population - 70.55
Variance of the population - 4977.61

Field Trial Study, Site #3 - Sedimentation Pond (% Cover)

Species	Plot Numbers #1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Agropyron cristatum	8.0	2.0	1.0	10.0	6.0	10.0	5.0	8.0	0.5	10.0	6.05
Agropyron intermedium	-	0.3	2.0	1.0	2.0	-	-	-	8.0	-	1.33
Bromus inermis	0.1	6.0	6.0	-	0.5	0.1	-	-	-	1.0	1.37
Bromus tectorum	-	-	-	-	-	-	0.1	-	-	-	0.01
Dactylis glomerata	-	-	-	-	-	-	-	-	0.2	-	0.02
Forbs											
Artemisia dracunculus	-	-	-	-	0.5	-	-	-	-	-	0.05
Grindelia squarrosa	0.4	-	-	-	0.5	-	-	-	-	-	0.09
Medicago sativa-ranger	-	-	1.0	-	-	-	-	-	0.2	-	0.12
Shrubs & Trees											
Chrysothamnus viscidiflorus	-	-	0.1	-	-	-	-	-	-	-	0.01
Total	8.5	8.2	10.1	11.0	9.5	10.2	5.1	8.0	8.9	11.0	9.05

Summation of all samples - 90.50
Standard deviation of the sample - 1.76
Variance of the sample - 3.11
Standard deviation of the population 1.67
Variance of the population - 2.80

Field Trial Study, Site #3 - Sedimentation Pond (Productivity lbs/acre)

Species	Plot Numbers #1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Agropyron cristatum	20	40	10	180	300	250	300	310	10	320	174.0
Agropyron intermedium	-	10	40	10	40	-	-	-	225	-	32.5
Bromus inermis	5	200	130	-	40	10	-	-	-	40	42.5
Bromus tectorum	-	-	-	-	-	-	5	-	-	-	0.5
Dactylis glomerata	-	-	-	-	-	-	-	-	10	-	1.0
Forbs											
Artemisia dracunculus	-	-	-	-	10	-	-	-	-	-	1.0
Grindelia squarrosa	5	-	-	-	100	-	-	-	-	-	10.5
Medicago sativa-ranger	-	-	20	-	-	-	-	-	20	-	4.0
Shrubs & Trees											
Chrysothamnus viscidiflorus	-	-	5	-	-	-	-	-	-	-	0.5
Total	30	250	205	190	490	260	305	310	265	360	266.5

Summation of all samples - 2665.00
Standard deviation of the sample - 119.23
Variance of the sample - 14216.94
Standard deviation of the population - 113.12
Variance of the population - 12795.25

Field Trial Study, Site #4 - Sewage Lagoon (% Cover)

Species	Plot Numbers #1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Agropyron cristatum	1.0	4.2	3.5	3.0	1.0	4.0	4.0	4.0	3.0	2.5	3.02
Agropyron smithii	0.5	-	-	0.5	-	-	-	-	0.5	0.5	0.20
Oryzopsis hymenoides	-	-	-	-	-	-	-	-	-	0.9	0.09
Sporobolus cryptandrus	1.5	-	-	-	-	-	-	-	-	0.2	0.17
Bromus tectorum	0.1	-	-	-	-	-	-	-	-	-	0.01
Forbs											
Sanguisorba minor	-	-	-	-	-	1.0	-	-	-	-	0.10
Medicago sativa-ranger	-	1.0	2.5	1.5	5.0	0.5	0.5	1.0	2.0	3.0	1.70
Lactuca serriola	0.5	0.1	-	-	-	0.2	-	-	-	-	0.08
Malcolmia africana	0.2	-	-	-	-	0.1	-	-	-	-	0.03
Machaeranthera grindelioides	-	0.2	0.3	-	-	0.2	-	-	-	-	0.07
Ambrosia acanthicarpa	1.0	-	-	0.1	0.1	-	-	-	-	0.2	0.14
Shrubs & Trees											
Antriplex canescens	-	0.2	-	-	-	0.3	0.1	0.5	0.1	-	0.12
Total	4.8	5.7	6.3	5.1	6.1	6.3	4.6	5.5	5.6	7.3	5.73

Summation of all samples - 57.30
Standard deviation of the sample - 0.81
Variance of the sample - 0.65
Standard deviation of the population - 0.77
Variance of the population - 0.59

Field Trial Study, Site #4 - Sewage Lagoon (Productivity lbs/acre)

	Plot Numbers										
Species	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10	Mean
Grasses											
Agropyron cristatum	15	60	45	50	15	50	40	50	30	40	39.5
Agropyron smithii	10	-	-	10	-	-	-	-	10	10	4.0
Oryzopsis hymenoides	-	-	-	-	-	-	-	-	-	10	1.0
Sporobolus cryptandrus	20	-	-	-	-	-	-	-	-	5	2.5
Bromus tectorum	5	-	-	-	-	-	-	-	-	-	0.5
Forbs											
Sanguisorba minor	-	-	-	-	-	60	-	-	-	-	6.0
Medicago sativa-ranger	-	40	90	40	360	20	15	30	40	300	93.5
Lactuca serriola	25	10	-	-	-	10	-	-	-	-	4.5
Malcolmia africana	5	-	-	-	-	5	-	-	-	-	1.0
Machaeranthera grindelioides	-	30	30	-	-	10	-	-	-	-	7.0
Ambrosia acanthicarpa	70	-	-	5	5	-	-	-	-	10	9.0
Shrubs & Trees											
riplex canescens	-	20	-	-	-	20	10	90	15	-	15.5
Total	150	160	165	105	380	175	65	170	95	375	184.0

Summation of all samples - 1840.00
Standard deviation of the sample 108.32
Variance of the sample - 11732.22
Standard deviation of the population - 102.76
Variance of the population - 10559.00

Subsidence Data and Observations

SCCC has routinely inspected the ventilation shaft and underground stream crossing areas for any effects due to subsidence. The inspections, both within the mine and on the surface, failed to identify any visual evidence indicating the existence or potential existence of subsidence.

All entries beneath Soldier Creek are in excellent condition and the support pillars show no structural weakness. Also, there has been no detectable deterioration of the overlying strata. Based on these observations, actual resurveying of the subsidence points was determined unwarrantable.

Visual observations of the mine permit area for subsidence were made during 1985 water monitoring activities. No tension cracks, ground settling or any other effects were noted during this monitoring. There were some small mud slides and some erosion in drainages due to rapid runoff but these were not associated with subsidence.

An aerial survey of surface monuments established in 1980 was suspended due to the current incorporation of additional area. Approval for this suspension was given by UDOGM in a letter dated February 25, 1986. This letter is included in Appendix 5 along with drawing C133 showing the existing subsidence monitoring points at the fan site.

Appendix 1

1. UDOGM's request for an annual report to be submitted by March 31, 1986

2. Latest Certificate of Insurance

3. Map #1

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

December 23, 1985

Mr. Don Ross, President
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Ross:

RE: Submittal of Annual Report for 1985

Enclosed please find an annual report form that must be submitted to the Division by March 31, 1986. Many of the requested data are presently being submitted to the Division of Oil, Gas and Mining at random times during the year. Submission of these data at a routine time (by March 31) will hopefully facilitate the submission (and review) process for both of our organizations. Please submit all monitoring reports along with the most recent certificate of insurance and updated mine sequence map and the one page attached sheet.

Your timely consideration of this reporting is appreciated.

Thank you.

Sincerely,

Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

PGL/btb
Enclosure
0564R

(December 1985)

COAL MINING AND RECLAMATION OPERATIONS FOR 1985
(Authority UMC 784)

(Must be submitted to the Division by March 31, 1986)

State of Utah
Department of Natural Resources
Division of Oil, Gas and Mining
3 Triad Center, Suite 350
355 West North Temple
Salt Lake City, Utah 84180-1203
(801) 538-5340

Operator: _____
Mine Name: _____
Mailing Address: _____
Company Representative: _____
Permit No.: _____
Date of Permanent Program Permit: _____
Quantity of Coal Mined (tonnage) 1985: _____

Attach Most Recent Certificate of Insurance.

Attach Updated Mine Sequence Map.

All monitoring activities during the report period must be submitted with this report: (including, but not limited to)

A. Water Monitoring Data

B. Precipitation Data

C. Subsidence Monitoring

D. Vegetation Data (test plots) or Revegetation Success Monitoring (includes interim and final)

E. Permit Stipulation Status

0488R

acord® CERTIFICATE OF INSURANCE

SERIAL NO. SAMPLE

ISSUE DATE (MM/DD/YY) 3-10-86

PRODUCER

Alexander & Alexander, Inc.
100 Light Street
Baltimore, Maryland 21202

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A	Travelers Indemnity Company
COMPANY LETTER B	
COMPANY LETTER C	
COMPANY LETTER D	
COMPANY LETTER E	

INSURED
*Including Soldier Creek Coal Company
Sun Company, Inc., its
affiliates and subsidiaries*
1801 Market Street
Philadelphia, Pennsylvania 19103

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIABILITY LIMITS IN THOUSANDS	EACH OCCURRENCE	AGGREGATE
A	GENERAL LIABILITY X COMPREHENSIVE FORM X PREMISES/OPERATIONS X UNDERGROUND EXPLOSION & COLLAPSE HAZARD X PRODUCTS/COMPLETED OPERATIONS X CONTRACTUAL X INDEPENDENT CONTRACTORS X BROAD FORM PROPERTY DAMAGE X PERSONAL INJURY	TSLG-186T908-A-85	1-1-85	Until Cancelled	BODILY INJURY	$	$
					PROPERTY DAMAGE	$	$
					BI & PD COMBINED	$3,000	$3,000
					PERSONAL INJURY		$
A	AUTOMOBILE LIABILITY X ANY AUTO X ALL OWNED AUTOS (PRIV. PASS.) X ALL OWNED AUTOS (OTHER THAN PRIV. PASS.) X HIRED AUTOS X NON-OWNED AUTOS GARAGE LIABILITY	T-CAP-186T901-7-85	1-1-85	Until Cancelled	BODILY INJURY (PER PERSON)	$	
					BODILY INJURY (PER ACCIDENT)	$	
					PROPERTY DAMAGE	$	
					BI & PD COMBINED	$	
	EXCESS LIABILITY UMBRELLA FORM OTHER THAN UMBRELLA FORM	TDRK-UB-186T894-8-85	1-1-85	Until Cancelled	BI & PD COMBINED	$	$
A	WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY		
						$ (EACH ACCIDENT)	
						$ (DISEASE-POLICY LIMIT)	
						$ (DISEASE-EACH EMPLOY	
A	OTHER Cargo Liability	T-M-186T900-5-85	1-1-85	Until Cancelled			

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

Soldier Canyon Mine
Carbon County, Utah

CERTIFICATE HOLDER

Utah Division of Oil Gas & Mining
355 West North Temple
3 Tri Aid Center
Suite 350
Salt Lake City, Utah 84180

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE Richard C. Barbieri

©IRI/ACORD CORPORATION 1

VERIFICATION OF INSURANCE

TO: Utah Division of Oil Gas & Mining
355 West North Temple
3 Tri Aid Center
Suite 350
Salt Lake City, Utah 84180

We have examined the policies listed hereon and hereby certify that the following described insurance has been effected by the Assured named herein with insurance companies as follows:

NAME OF INSURED:	Sun Company, Inc., its Affiliates and Subsidiaries including Soldier Creek Coal Company
ADDRESS:	1801 Market Street Ten Penn Center Philadelphia, PA 19103-1699
LOCATION OF RISK:	The Universe
KIND OF INSURANCE:	Excess Liability
POLICY NUMBER(S):	Various
TERM OF COVERAGE:	April 1, 1985 - April 1, 1986
LIMITS OF LIABILITY:	$3,000,000 Excess of $3,000,000

This document is furnished to you as a matter of information only. The issuance of this document does not make the person or organization to whom it is issued an additional assured nor does it modify in any manner the contract of insurance between the Assured and the Underwriters. Any amendment, change or extension of such contract can only be effected by specific endorsement attached hereto.

If these policies are cancelled or materially altered during the term of this coverage, thirty (30) days prior written notice will be given to the party indicated.

ALEXANDER & ALEXANDER INC.

BY Matthew J. Arnall

DATE March 10, 1986

Alexander & Alexander

acord CERTIFICATE OF INSURANCE

ISSUE DATE (MM/DD/YY) 3-10-86

PRODUCER

Alexander & Alexander, Inc.
100 Light Street
Baltimore, Maryland 21202

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED

*Including Soldier Creek Coal Company
Sun Company, Inc., its
affiliates and subsidiaries*
1801 Market Street
Philadelphia, Pennsylvania 19103

COMPANIES AFFORDING COVERAGE

COMPANY LETTER A	Travelers Indemnity Company
COMPANY LETTER B	
COMPANY LETTER C	
COMPANY LETTER D	
COMPANY LETTER E	

COVERAGES

THIS IS TO CERTIFY THAT POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS, AND CONDITIONS OF SUCH POLICIES.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIABILITY LIMITS IN THOUSANDS	EACH OCCURRENCE	AGGREGATE
A	GENERAL LIABILITY X COMPREHENSIVE FORM X PREMISES/OPERATIONS X UNDERGROUND EXPLOSION & COLLAPSE HAZARD X PRODUCTS/COMPLETED OPERATIONS X CONTRACTUAL X INDEPENDENT CONTRACTORS X BROAD FORM PROPERTY DAMAGE X PERSONAL INJURY	TSLG-1861903-4-85	1-1-85	Until Cancelled	BODILY INJURY	$	$
					PROPERTY DAMAGE	$	$
					BI & PD COMBINED	$3,000	$3,000
					PERSONAL INJURY		$
A	AUTOMOBILE LIABILITY X ANY AUTO X ALL OWNED AUTOS (PRIV. PASS.) X ALL OWNED AUTOS (OTHER THAN PRIV. PASS.) X HIRED AUTOS X NON-OWNED AUTOS GARAGE LIABILITY	T-CAP-1861901-7-85	1-1-85	Until Cancelled	BODILY INJURY (PER PERSON)	$	
					BODILY INJURY (PER ACCIDENT)	$	
					PROPERTY DAMAGE	$	
					BI & PD COMBINED	$	
	EXCESS LIABILITY UMBRELLA FORM OTHER THAN UMBRELLA FORM	TUMG-UB-1861894-8-85	1-1-85	Until Cancelled	BI & PD COMBINED	$	$
A	WORKERS' COMPENSATION AND EMPLOYERS' LIABILITY				STATUTORY		
						$	(EACH ACCIDENT)
						$	(DISEASE-POLICY LIMIT)
						$	(DISEASE-EACH EMPLOYEE)
A	OTHER Cargo Liability	T-E-1861900-5-85	1-1-85	Until Cancelled			

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

Soldier Canyon Mine
Carbon County, Utah

CERTIFICATE HOLDER

U.S. Department of Interior
Office of Surface Mining
Brooks Taylors
1020 15th Street
Denver, Colorado 20202

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE Richard C. Barbieri

©IRI/ACORD CORPORATION 198

VERIFICATION OF INSURANCE

TO: U.S. Department of Interior
Office of Surface Mining
Brooks Taylors
1020 15th Street
Denver, Colorado 20202

We have examined the policies listed hereon and hereby certify that the following described insurance has been effected by the Assured named herein with insurance companies as follows:

NAME OF INSURED: Sun Company, Inc., its Affiliates and Subsidiaries including Soldier Creek Coal Company

ADDRESS: 1801 Market Street
Ten Penn Center
Philadelphia, PA 19103-1699

LOCATION OF RISK: The Universe

KIND OF INSURANCE: Excess Liability

POLICY NUMBER(S): Various

TERM OF COVERAGE: April 1, 1985 - April 1, 1986

LIMITS OF LIABILITY: $3,000,000 Excess of $3,000,000

This document is furnished to you as a matter of information only. The issuance of this document does not make the person or organization to whom it is issued an additional assured nor does it modify in any manner the contract of insurance between the Assured and the Underwriters. Any amendment, change or extension of such contract can only be effected by specific endorsement attached hereto.

If these policies are cancelled or materially altered during the term of this coverage, thirty (30) days prior written notice will be given to the party indicated.

ALEXANDER & ALEXANDER INC.

BY Matthew J. Hyatt

DATE March 10, 1986

Alexander & Alexander

Appendix 2

1. Permit approval letters from the Office of Surface Mining and UDOGM

2. Violation N85-4-15-1 and associated documents

3. Finalized assessments for violations N84-6-10-1 and N83-6-11-1 and copies of the payments for the violations' civil penalties

4. Copies of all 1985 state inspections

5. Sedimentation pond and sewage lagoon site inspections

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

JUN 0 3 1985

CERTIFIED MAIL: RETURN RECEIPT REQUESTED

Mr. M. D. Ross
Vice President and General Manager
Soldier Creek Coal Company
P.O. Box I
Price, Utah 84501

Dear Mr. Ross:

Enclosed is the Soldier Canyon mine permit. This permit become effective on May 29, 1985. The Office of Surface Mining (OSM) has received a copy of the bond in the amount of $522,592.00 payable to both the State of Utah and the United States of America. The original bond amount of $1,090,800.00 was reduced at the request of Soldier Creek Coal Company (correspondence dated May 13, 1985) to cover the existing facilities with the understanding that the waste rock disposal area would not be needed during this permit term. Soldier Creek Coal Company must receive approval during the renewal procedures for the permit term for which the disposal area will be utilized from the regulatory authority and post a bond as determined by the regulatory authority prior to any surface disturbance at the waste rock disposal site.

Please read the permit to be sure you understand the requirements. Pursuant to 30 CFR 775.11, Soldier Creek Coal Company will have 30 days from the date of notice of the permit decision to appeal the Director's decision on the application.

Enclosed is a copy of the newspaper notice we are sending to the Sun Advocate, Carbon County, Utah, to be published as soon as possible. When published, this notice will constitute official notification of our action. Any person with an interest which is or may be adversely affected may request a hearing on the reasons for the final decision within 30 days from the date that notice is published.

The Assistant Secretary for Land and Minerals Management approved the mining plan on March 11, 1985. The enclosed permit has been determined to be consistent with this plan.

If you have any questions, please feel free to call either me or Mark Humphrey at (303) 844-3806.

Sincerely,

Allen D. Klein
Administrator
Western Technical Center

Enclosures

cc: Jackson Moffitt, BLM
Kenneth Rhea, BLM
Dianne Nielson, Utah DOGM
Robert Hagen, OSM - AFO

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING

This permit, UT-0023, 12/84 which incorporates Utah Permit ACT/007/018, is issued for the United States of America by the Office of Surface Mining (OSM) to:

Soldier Creek Coal Company
P.O. Box I
Price, Utah 84501

for the Soldier Canyon mine. Soldier Creek Coal Company is the lessee of Federal coal leases SL-051279-063188 and U-50722.

Sec. 1 STATUTES AND REGULATIONS - This permit is issued pursuant to the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. 1201 et seq., hereafter referred to as the Act, and the Federal coal leases issued pursuant to the Mineral Leasing Act of February 15, 1920, as amended, 30 U.S.C. 181 et seq., the Federal Coal Leasing Amendments Act of 1976, as amended 30 U.S.C. 201 et seq. and in the case of acquired lands, the Mineral Leasing Act for Acquired Lands of September 7, 1947, as amended, 30 U.S.C. 351 et seq. This permit is also subject to all regulations of the Secretary of the Interior including, but not limited to, 30 CFR Chapter VII and 43 CFR Part 3400, and to all regulations of the Secretary of Energy promulgated pursuant to Section 302 of the Department of Energy Organization Act of 1977, 42 U.S.C. 7152, which are now in force or, except as expressly limited herein, hereafter in force, and all such regulations are made a part hereof.

Sec. 2 The permittee is authorized to conduct surface coal mining and reclamation operations on the following described Federal lands (as shown on ownership map) as well as on such other lands within UT-0023 affecting or affected by those operations on Federal lands within the Soldier Canyon mine permit area situated in the State of Utah, Carbon County, and located within:

Township 13 South, Range 11 East, Salt Lake Meridian;

Section 12: E1/2, E1/2W1/2;
Section 13: N1/2NE1/4, NE1/4NW1/4, SE1/4NE1/4, NE1/4SE1/4;
Section 24: S1/2S1/2SW1/4SE1/4;
Section 25: N1/2NW1/4NE1/4.

Township 13 South, Range 12 East, Salt Lake Meridian;

Section 7:	All;
Section 8:	W1/2;
Section 17:	NW1/4;
Section 18:	Lots 1 & 2 (W1/2NW1/4), E1/2NE1/4, NW1/4NE1/4, E1/2NW1/4, Portions of the N1/2SW1/4NE1/4

and to conduct underground coal mining and reclamation operations on the foregoing described property subject to the conditions of the leases, the approved mining plan, and Utah State permit ACT/007/018, issued concurrently with the Federal permit (UT-0023, 12/84), including all conditions, and all other applicable conditions, laws and regulations.

Sec. 3 This permit is issued for a term of 5 years from the date of issuance, except that this permit will terminate if the permittee has not begun the surface coal mining and reclamation operations covered herein within 3 years of the date of permit issuance.

Sec. 4 The permit rights may not be transferred, assigned, or sold without the approval of the Director, OSM. Request for transfer, assignment, or sale of permit rights must be done in accordance with 30 CFR 740.13(e) and UMC 788.18.

Sec. 5 The permittee shall allow the authorized representatives of the Secretary, the Utah Division of Oil, Gas and Mining including, but not limited to, inspectors and fee compliance officers, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

a. Have the rights of entry provided for in 30 CFR 842.13 and UMC 782.15; and,

b. Be accompanied by private persons for the purpose of conducting an inspection in accordance with 30 CFR 842 and UMC 842, when the inspection is in response to an alleged violation reported by the private person.

Sec. 6 The permittee shall conduct underground coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the mining plan and permit application and approved for the term of the permit and which are subject to the bond.

Sec. 7 The permittee shall minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition of this permit, including, but not limited to:

a. Accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

b. Immediate implementation of measures necessary to comply; and

c. Warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

Sec. 8 The permittee shall dispose of solids, sludge, filter backwash, or pollutants removed in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable State or Federal law.

Sec. 9 The permittee shall conduct its operations:

a. In accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and

b. Utilizing methods specified as conditions of the permit by Utah Division of Oil, Gas and Mining and OSM in approving alternative methods of compliance with the performance standards of the Act and the Federal Lands Program, UMC 786.19(m), and Subchapter K.

Sec. 10 The permittee shall provide the names, addresses, and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 11 Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 12 If during the course of mining operations previously unidentified cultural resources are discovered, the applicant shall ensure that the site(s) is not disturbed and shall notify the State regulatory authority and OSM. The State RA, after coordination with OSM, shall inform the operator of necessary actions required.

Sec. 13 The operator shall pay all reclamation fees requied under 30 CFR, Chapter VII, Subchapter R, for coal produced under this permit.

Sec. 14 APPEALS - The permittee shall have the right to appeal: (a) under 30 CFR 775 from actions or decisions of any official of OSM; (b) under 43 CFR 3000.4 from an action or decision of any official of the Bureau of Land Management; (c) under 30 CFR 290 from an action, order, or decision of any official of the BLM Branch of Solid Minerals; or (d) under applicable regulations from any action or decision of any other official of the Department of the Interior arising in connection with this permit. The appeal period commences with the date of publication of the notice of decision in the newspaper.

Sec. 15 SPECIAL CONDITIONS - In addition to the general obligations and of performance set out in the lease(s), Utah State permit ACT/007/018 (to be issued subsequent to this permit) and this permit, the permittee shall comply with the special conditions of Utah State permit ACT/007/018. These conditions are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors, and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. In accordance with 30 CFR Part 774 (1983) these conditions may be revised or amended, in writing, by the mutual consent of the grantor and the permittee at any time to adjust to changed conditions or to correct an oversight. The grantor may, by order, require reasonable revision of this permit to ensure compliance with the Act and the regulatory program.

THE UNITED STATES OF AMERICA

By: Allen D. Klein
Administrator, Western Technical Center

5/31/85
Date

U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING
RECLAMATION AND ENFORCEMENT
NOTICE OF A DECISION AND AVAILABILITY
OF BOTH A TECHNICAL ANALYSIS AND AN
ENVIRONMENTAL ASSESSMENT FOR
SOLDIER CREEK COAL COMPANY'S
PERMANENT PROGRAM PERMIT
SOLDIER CANYON MINE
CARBON COUNTY, UTAH

The United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSM), has approved, a 5-year permit for Soldier Creek Coal Company to mine coal at its Soldier Canyon mine.

The Soldier Canyon mine underground coal mine is located in Carbon County, Utah. The mine has been in operation since 1940. The proposed permit area will cover approximately 2,143.81 acres, approximately 11.5 acres of which have been disturbed to date. An additional 30 acres are to be disturbed by future development of the proposed waste rock disposal area. Maximum mine production is at a rate of 0.82 million tons per year of coal over 19 years.

Any person with an interest which is or may be adversely affected by this Federal permit approval action may request an adjudicatory hearing on the final decision within 30 days after publication of this notice, in accordance with Section 514(c) of the Surface Mining Control and Reclamation Act (SMCRA). Any hearing will be governed by provisions of 5 U.S.C. Section 554. A petition for review of the OSM decision should be submitted to:

Hearings Division
Office of Hearings and Appeals
U.S. Department of the Interior
4015 Wilson Boulevard
Arlington, Virginia 22203

Pursuant to 40 CFR Sections 1501.4(c) and 1506.6, notice is hereby given that OSM has completed a technical analysis (TA) for the mining and reclamation plan (mining plan) for the Soldier Canyon mine, Carbon County, Utah. OSM has supplemented this TA with its own environmental assessment (EA). OSM's recommendation to approve the Soldier Canyon mine mining plan and the permit application with conditions is in accordance with Sections 510 and 523 of SMCRA. OSM's analysis is that no significant environmental impacts would result from such approval. For information or clarification concerning the approval of the Soldier Canyon mine plan, please contact Mark Humphrey or Walter Swain at (303) 844-3806, Office of Surface Mining, Denver, Colorado.

Both the TA and the EA are available for public review at the following locations:

Office of Surface Mining Reclamation and Enforcement
Western Technical Center
Brooks Tower
1020 15th Street
Denver, Colorado 80202

Office of Surface Mining Reclamation and Enforcement
Enforcement and Inspection
219 Central Avenue, NW., Room 216
Albuquerque, New Mexico 87102

Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

June 3, 1985

CERTIFIED RETURN RECEIPT REQUESTED
P-592-429-615

JUN 06 1985

Mr. M. Don Ross
Vice President and General Manager
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Don Ross:

Re: Final Permit Approval, Soldier Canyon Mine, ACT/007/018, Folder No. 2 & 4, Carbon County, Utah

Please find enclosed the final state permit approval for Soldier Creek Coal Company's Soldier Canyon Mine. Please examine the attached permit, ACT/007/018, including the special condition in Attachment A, and sign on page 6 of that document. Upon signing, please keep one copy of the permit for your records and return the other Certified Return Receipt Requested to the Division at your earliest convenience.

A signed and executed performance bond for the Soldier Canyon Mine has been received by the Division in the amount of $522,592.00, as required according to the Office of Surface Mining calculations. Therefore, upon your signing of the permit, it will become valid and enforceable.

Thank you for your cooperation on this matter. Should you have any questions, please feel free to contact the Division.

Best regards,

Dianne

Dianne R. Nielson
Director

SCL:jvb
Enclosures
cc: Allen Klein
Robert Hagen
Lowell Braxton
Joe Helfrich
Susan C. Linner
0028R-26

FEDERAL
(February 1985)

Permit Number ACT/007/018, May 29, 1985

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

This permit, ACT/007/018, which incorporates the Office of Surface Mining (OSM) Permit UT-0023, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501
(801) 637-6360

for the Soldier Canyon Mine. Soldier Creek Coal Company is the lessee of federal coal leases SL-051279-063188 and U-50722. The permit is not valid until a performance bond is filed with the DOGM in the amount of $522,592, payable to the state of Utah, Division of Oil, Gas and Mining and OSM, and the DOGM has received a copy of this permit signed and dated by the permittee.

Sec. 1 STATUTES AND REGULATIONS - This permit is issued pursuant to the Utah Coal Mining and Relamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as UCMRA.

Sec. 2 The permittee is authorized to conduct surface coal mining and reclamation operations on the following described lands (as shown on ownership map) within the permit area at the Soldier Canyon Mine situated in the state of Utah, Carbon County, and located:

Township 13 South, Range 11 East, Salt Lake Meridian
Sections 12, 13, 24 & 25
Township 13 South, Range 12 East, Salt Lake Meridian
Sections 7, 8, 17 & 18

This legal description is for the permit boundary (as shown on the permit area map) of the Soldier Canyon Mine. The permittee is authorized to conduct surface and reclamation operations connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, and OSM permit UT-0023, to be issued May 29 1985, including all conditions and all other applicable conditions, laws and regulations.

Sec. 3 This permit is issued for a term of five (5) years commencing on the date the permit is signed by the permittee, except that this permit will terminate if the permittee has not begun the surface coal mining and reclamation operations covered herein within three (3) years of the date of issuance.

Sec. 4 The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Request for transfer, assignment or sale of permit rights must be done in accordance with applicable regulations including but not limited to 30 CFR 740.13(e) and UMC 788.17-.19.

Sec. 5 The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, and representatives o the Office of Surface Mining, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

A. have the rights of entry provided for in 30 CFR 840.12, UMC 840.12, 30 CFR 842.13 and UMC 842.13; and,

B. be accompanied by private persons for the purpose of conducting an inspection in accordance with UMC 842.12 and 30 CFR 842, when the inspection is in response to an alleged violation reported by the private person.

Sec. 6 The permittee shall conduct surface coal mining and reclamation operations only on those lands specifically designated as within the permit area on the maps submitted in the mining plan and permit application and approved for the term of the permit and which are subject to the performance bond.

Sec. 7 The permittee shall minimize any adverse impact to the environment or public health and safety including but not limited to:

A. accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

B. immediate implementation of measures necessary to comply; and

C. warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

Sec. 8 The permittee shall dispose of solids, sludge, filter backwash or pollutants in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable state or federal law.

Sec. 9 The lessee shall conduct its operations:

A. in accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and

B. utilizing methods specified as conditions of the permit by DOGM and OSM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 10 The permittee shall provide the names, addresses and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 11 The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq,) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.

Sec. 12 Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.

Sec. 13 If during the course of mining operations, previously unidentified cultural resources are discovered, the applicant shall ensure that the site(s) is not disturbed and shall notify the state Regulatory Authority (RA). The state RA, after coordination with OSM, shall inform the operator of necessary actions required.

Sec. 14 APPEALS - The lessee shall have the right to appeal: (a) under 30 CFR 775 from actions or decisions of any official of OSM; (b) under 43 CFR 3000.4 from an action or decision of any official of the Bureau of Land Management; (c) under 30 CFR 290 from an action, order or decision of any official of the Minerals Management Service; or (d) under applicable regulations from any action or decision of any other official of the Department of the Interior arising in connection with this permit. In addition, the lessee shall have the right to appeal as provided for under UMC 787.

Sec. 15 SPECIAL CONDITIONS - In addition to the general obligations and of performance set out in the leases, OSM permit UT-0023 and this permit, the permittee shall comply with the special condition appended hereto as Attachment A.

The above conditions (Secs. 1-14) are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. These conditions may be revised or amended, in writing, by the mutual consent of the grantor and the permittee at any time to adjust to changed conditions or to correct an oversight. The grantor may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

THE STATE OF UTAH

By: Dianne R. Nielson

Date: June 3, 1985

I certify that I have read and understand the requirements of this permit and any special conditions attached.

Authorized Representative of
the Permittee

Date: _____

APPROVED AS TO FORM:

By: Mark E. Moench
Assistant Attorney General

Date: June 4, 1985

0311R

Attachmnent A

Special Permit Condition

The Office of Surface Mining approved the bond amount of $522,592.00. Within 60 days of granting this permit, the Division of Oil, Gas and Mining will assess the bonding requirements for the Soldier Canyon Mine, as approved for the five-year permit term, to assure it is consistent with DOGM policy. If the Division determines that the existing bond is insufficient, Soldier Creek Coal Company will be required to post the additional surety with the Division to ensure reclamation.

0311R

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center, Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

SEP 16 1985

September 12, 1985

(This Letter was sent to all people on the attached list.)

Dear :

RE: Notification of Permit Approval, Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Carbon County, Utah

The Utah Division of Oil, Gas and Mining (Division) is granting approval and issuing a five-year mining permit to Soldier Creek Coal Company. The Division has determined that the permit application is technically complete and demonstrates compliance with all the "Regulations Pertaining to Surface Effects of Underground Coal Mining Activities, Final Rules of the Utah Board and Division of Oil, Gas and Mining," promulgated under the Utah Coal Mining Reclamation Act (Utah Code Annotated 1953, Section 40-10-1 et seq).

Notice is hereby given to all appropriate agencies and individuals having jurisdiction over, or an interest in the area of the proposed operations, pursuant to UMC 786.23(d)(e)(f), that a permit has been issued to said permittee.

This permit authorizes the permittee, Soldier Creek Coal Company, to conduct underground coal mining and reclamation operations and surface operations connected with the underground mining on the described lands within the permit area at the Soldier Canyon Mine situated in the state of Utah, County of Carbon, subject to the terms of the lease(s), the approved mining and reclamation plan, this permit and all applicable laws and regulations. The lands included in this permit are described as follows:

Township 13 South, Range 11 East: E 3/4 Section 12; N 1/2 NE 1/4, SE 1/4 NE 1/4, NE 1/4 NW 1/4, and NE 1/4 SE 1/4 of Section 13; S 1/2 S 1/2 SW 1/4 SE 1/4 of Section 24, N 1/2 NW 1/4 NE 1/4 of Section 25.

Township 13 South, Range 12 East: All of Section 7; W 1/2 Section 8; NW 1/4 Section 17; Lots 1 and 2 (W 1/2 NW 1/4), E 1/2 NE 1/4, NW 1/4 NE 1/4, E 1/2 NW 1/4, and portions of the N 1/2 SW 1/4 NE 1/4, of Section 18.

Individuals wishing to review the complete plan and decision documents or submit comments in response to this decision and notice, should direct written requests to the Division, at the following address:

Dr. Dianne Nielson, Director
Division of Oil, Gas and Mining
355 W North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
(801) 538-5340

Sincerely,

Lowell P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

SCL:jvb
cc: J. Tom Paluso
S. Linner
0028R-44

Mr. Gene Nodine
District Manager
Bureau of Land Management
P. O. Box 970
Moab, Utah 84531

Mr. William H. Geer, Director
Division of Wildlife Resources
1596 West North Temple
Salt Lake City, Utah 84116

Mr. Kenneth Alkema, Director
Department of Health
Division of Environmental Health
P. O. Box 45500
Salt Lake City, Utah 84145-0500

Mr. Melvin T. Smith
State Historic Preservation Officer
Utah State Historical Society
300 Rio Grande
Salt Lake City, Utah 84101

Mr. Robert L. Morgan
State Engineer
Division of Water Rights
1636 West North Temple
Salt Lake City, Utah 84116

Mr. Dee C. Hansen
Executive Director
Department of Natural Resources
1636 West North Temple
Salt Lake City, Utah 84116

Mr. Allen Klein, Administrator
Western Technical Center
Office of Surface Mining
Brooks Towers
1020 Fifteenth Street
Denver, Colorado 80202

Mr. Robert Hagen, Director
Albuquerque Field Office
Office of Surface Mining
219 Central Avenue, NW
Albuquerque, New Mexico 87102

Mr. John Welles
Regional Administrator
Environmental Protection Agency
Region VIII, 1860 Lincoln Street
Denver, Colorado 80295

Mr. Jim Paraskeva
Southeastern Utah Association
of Local Governments
P. O. Box A-I
Price, Utah 84501

Mr. Walter T. Axelgard, Chairma
Commissioner for Safety
Industrial Commission of Utah
560 South 300 East
Salt Lake City, Utah 84111

Ms. Carolyn Wright
State Clearinghouse
Resource Development &
Coordinating Committee
State Planning Coordinator Offi
Room 116, State Capitol
Salt Lake City, Utah 84114

Mr. Jackson Moffitt, Chief
Mining Law & Solid Minerals
Bureau of Land Management
Consolidated Financial Center
324 South State Street
Salt Lake City, Utah 84111-230

Mr. Leon Berggren, Area Manager
Bureau of Land Management
Price River Resource Area
P. O. Box AB
Price, Utah 84501

Mr. Clark Johnson
U. S. Fish & Wildlife Service
2060 Administration Building
1745 West 1700 South
Salt Lake City, Utah 84104-511

Ms. Alice Shearer, Director
Division of Community Developme
6233 State Office Building
Salt Lake City, Utah 84114

Mr. Harold Marston
County Planner
Carbon County
Price, Utah 84501

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

May 2, 1985

EXPRESS MAIL
B76409237

Mr. Dave Spillman
Soldier Creek Coal Company
P O Box I
Price, Utah 84501

Dear Mr. Spillman:

RE: Notice of Violation N85-4-15-1, Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder #7, Carbon County, Utah

Please find enclosed the above mentioned document. Please note that the time for abatement is May 20, 1985. An extension of the time for abatement of this violation will only be granted upon receipt of a written request for extension prior to the abatement deadline. Said extension must be substantiated.

Should you have any questions concerning this letter of the enclosed notices, please do not hesitate to call myself or Joseph C. Helfrich, Field Supervisor.

Sincerely,

David Lof
Mining Field Specialist

re

0243Q-1

DOGM/NOV-1

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS & MINING

1588 West North Temple
Salt Lake City, Utah 84116
Telephone: (801) 533-5771

NOTICE OF VIOLATION NO.N 85-4-15-1

From the STATE OF UTAH
To the Following Permittee or Operator:

NAME Soldier Creek Coal Company
MINE Soldier Canyon Mine ☐ SURFACE ☒ UNDERGROUND ☐ OTHER
CATEGORY OF OWNERSHIP: ☐ STATE ☐ FEDERAL ☐ FEE ☐ MIXED
OSM MINE NO. STATE PERMIT NO. ACT/007/018 MSHA I.D. NO.
COUNTY AND STATE Carbon County Utah TELEPHONE
MAILING ADDRESS: P.O. Box I Price Utah 84501
DATE OF INSPECTION April 18, 19 85.
TIME OF INSPECTION: FROM 12:30 ☐ a.m. to 4:00 ☐ a.m.
☒ p.m. to ☒ p.m.

NAME OF OPERATOR (if other than permittee)
MAILING ADDRESS:

Under the authority of the Utah Coal Mining and Reclamation Act of 1979 (Sec. 40-10-1 et seq., Utah Code Annotated, 1953), the undersigned authorized representative of the Director and the Division of Oil, Gas & Mining has conducted an inspection of the above mine on the above date and has found violation(s) of the Act, the regulations or required permit condition(s) listed in the attachment(s). This Notice constitutes a separate Notice of Violation for each violation listed.

You must abate each of these violations within the designated abatement time. You are responsible for doing all work in a safe and workmanlike manner.

The undersigned representative finds that cessation of mining is ☐ is not ☒ expressly or in practical effect required by this Notice. For this purpose "Mining" means extracting coal from the earth or a waste pile and transporting it within or from the minesite.

This Notice shall remain in effect until it expires as provided on the reverse or is modified, terminated or vacated by written notice of an authorized representative of the Director of the Division of Oil, Gas & Mining. The time for abatement may be extended by the authorized representative for good cause, if a request is made within a reasonable time before the end of the abatement period.

Date of Service May 2, 1985 David Lof
SIGNATURE OF AUTHORIZED REPRESENTATIVE

Time of Service 9:00 ☒ a.m. ☐ p.m. David Lof #4
NAME AND I. D. NO.

Person Servied with Notice Dave Spillman Mine Engineer
PRINT NAME AND TITLE

Signature Issued from Division Offices

IMPORTANT — PLEASE READ REVERSE OF THIS PAGE

DEPARTMENT OF NATURAL RESOURCES - DIVISION OF OIL, GAS, AND MINING
1588 WEST NORTH TEMPLE - SALT LAKE CITY, UTAH 84116 - (801) 533-5771

56 64 16

STATE OF UTAH

...ce of Violation No. N 85-4-15-1

Violation No. 1 of 1

Nature of the Violation

FAILURE TO MINE IN ACCORDANCE WITH AN APPROVED INTERIM PERMIT
FAILURE TO CONSTRUCT AND MAINTAIN THE SEDIMENT POND EMBANKMENT TO ENSURE THE PROPER TOP WIDTH
FAILURE TO CONSTRUCT AND MAINTAIN THE SEDIMENT POND EMBANKMENT TO ENSURE PROPER SIDE SLOPE GRADIENTS

Provision(s) of the Regulations, Act, or Permit Violated

UCA 40-10-22 (1) (c)
UMC 771.19
UMC 817.46 (l)
UMC 817.46 (m)

Portion of the Operation to which Notice Applies

SEDIMENT POND EMBANKMENT

Remedial Action Required (including interim steps, if any)

A. SUBMIT ~~A~~ COMPLETE PLANS TO THE DIVISION TO BRING THE SEDIME POND INTO COMPLIANCE WITH UMC 817.46 (l) AND UMC 817.46 (m).
B. IMPLEMENT SAID PLANS UPON DIVISION APPROVAL

Time for Abatement (including time for interim steps, if any)

A. MAY 20 1985
B. COMPLETE THE IMPLEMENTATION OF APPROVED PLANS WITHIN 30 DAYS OF RECEIPT OF APPROVAL FROM THE DIVISION

PERMITEE/OPERATOR

3374

May 6, 1985

MAY 09 1985
SC

TO: Coal File, Inspection and Enforcement Folder

FROM: David Lof, Mining Field Specialist

RE: Soldier Canyon Mine, ACT/007/018, Folder #7. Carbon County, Utah

DATE:	April 18, 1985
TIME:	12:30 - 4:00 p.m.
WEATHER:	Overcast and mild; to raining and cool
COMPANY OFFICIALS:	Tom Paluso
STATE OFFICIALS:	David Lof
ENFORCEMENT ACTION:	NOV N85-4-15-1

Compliance With Permanent Performance Standards

UMC 771 et al Permits

The following permits were reviewed in the operator's mine office :

1. The operator's interim approval letter from the Division dated January 17, 1979.
2. A September 3, 1982 letter from the Division granting conditional approval of the operator's ventilation shaft and the underground stream crossing.
3. A May 17, 1983 letter from the Division approving drainage diversion improvements on the mine yard.
4. A July 14, 1983 letter from the Division approving the construction of the operator's sewage lagoons.
5. An August 7, 1984 letter from the Division approving a runoff control modification submitted by the operator on July 6, 1984.

UMC 817.11 Signs and Markers

Mine identification signs are posted along the county road above and below the mine site as required.

The sewage lagoon site which is down the canyon from the main mine site has signs posted along its fence identifying the site as part of Soldier Creek's operation and warning people of the nature of the material within the lagoons. During my last complete inspection on February 21, 1985, I asked the operator to post a mine identification sign on the west side of the pond near the gate.

At the time of this inspection a mine identification sign had not been posted near the sewage lagoon gate.

I asked Mr. Paluso about this and he informed me that they had ordered a sign and had not received it yet. He showed me a purchase request form dated March 19, 1985 for the puchase of a mine identification sign from Tony Koss of Price.

Perimeter markers were properly posted around the permitted disturbed area boundary.

UMC 817.21-.23 Topsoil

What little topsoil the operator has removed and stored for redistribution upon final reclamation is stored on the southern slope of the material storage pad south of the sediment pond. The stockpile is identified by a topsoil sign and was well vegetated.

UMC 817.41-.51 Hydrologic Balance

The disturbed area runoff controls for the mine yard, parking area and material storage area by the pond were adequately maintained.

Sediment Pond Inlet

As was mentioned in my March 12, 1985 memorandum for my February 1985 inspection some disturbed area runoff had been bypassing the sediment pond inlet and going down the slope into the sediment pond. This runoff has caused excessive erosion all along the downslope from the road to the sediment pond. The operator received approval on August 7, 1984 for a runoff control modification plan which addresses this problem, however in the approval letter a date for the implementation of these plans was not given. I informed Mr. Paluso that the plans had to be implemented by June 30, 1985 or enforcement action would be taken.

Bin Wall

The runoff control modification plan which was approved by the Division on August 7, 1984 also addresses settling and erosion of the bin wall fill material. The June 30, 1985 deadline for implementation of the above mentioned approved plans also applies to the drainage controls proposed for the bin wall.

Sediment Pond, NOV N85-4-15-1

While inspecting the sediment pond, I found two problems with the pond's embankment.

1. The top of the sediment pond embankment was only 6 feet wide at its narrowest point. According to the plans for the sediment pond which were approved by the Division on November 23, 1979, the top width of the embankment is suppose to be 9.5 feet.

2. According to the operator's approved plan the combined side slopes of the sediment pond embankment should not be less than one to five with neither slope steeper than one to two. The inside slopes of the sediment pond were O.K. but the outside slope, especially the east side adjacent to Soldier Creek, does not comply with the regulations nor the approved plan. It is almost vertical at some points and is highly eroded due to Soldier Creek.

Because of the problems with the sediment pond's embankment Notice of Violation N85-4-15-1 was issued, it reads as follows:

Nature of the Violation

Failure to mine in accordance with an approved interim permit. Failure to construct and maintain the sediment pond embankment to ensure the proper top width. Failure to construct and maintain the sediment pond embankment to ensure proper side slope gradient.

Provisions of the Regulations, Act or Permit Violated

UCA 40-10-22(1)(c)
UMC 771. 19
UMC 817.46 (l)
UMC 817.46 (m)

Portion of the Operation to Which Notice Applies

Sediment pond embankment.

Remedial Action Required

A. Submit complete plans to the Division to bring the sediment pond into compliance with UMC 817.46 (l) and UMC 817.46 (m).

B. Implement said plans upon Division approval.

Time for Abatement

A. May 20, 1985

B. Complete the implementation of the approved plans within 30 days of receipt of approval from the Division.

The violation was issued from the Division office on May 2, 1985.

Pond Inspections

The operator had quarterly sediment pond and sewage inspection reports through March 25, 1985. These reports did not indicate any problems with either pond.

UMC 817.52 Surface and Groundwater Monitoring

The operator is currently operating under NPDES permit UT-0023680 issued by EPA on October 29, 1982. This permit is for the mine water discharge and sediment pond overflow into Soldier Creek. The permit is scheduled to expire on September 30, 1987.

Surface water and mine water discharge data was available through March 15, 1985. There were no apparent problems with the data which were reviewed. The operator started analyzing their mine water discharge samples for Total Manganese in February 1985 as requested during my February 1985 complete inspection.

Mine water was discharging into Soldier Creek at the time of my inspection at a rate of approximately several CFS. I was not able to get a sample at the discharge point because it is inaccessible. I asked Mr. Paluso how they sampled their mine water discharge and he informed me that there is a valve in the mine water pipe just inside the mine workings from which they take their samples.

UMC 817.57 Stream Buffer Zones

Stream buffer zone signs were posted along Soldier Creek as required.

UMC 817.71-.73 Disposal of Underground Development Waste and Excess Spoil, and Nonacid and Nontoxic Forming Coal Processing Waste

Mr. Paluso informed me that they are currently disposing of all their underground development waste underground in the cross cuts within the stream crossing buffer area.

UMC 817.121-.126 Subsidence Control

Sitpulation 9-2-82-4-CY was attached to the conditional approval for the ventilation shaft and underground stream crossing dated September 3, 1982. This stipulation required that a subsidence monitoring plan for the underground stream crossing be submitted to the Division by October 1, 1982,and the data be submitted annually.

On September 29, 1982, the Division received a subsidence monitoring plan from the operator. I asked Dave Spillman of Soldier Creek Company if they had submitted their 1984 subsidence data yet? He showed me a rough draft of a letter he was working on regarding their subsidence monitoring for the stream crossing area for the year 1984.

On April 26, 1985, the Division received the operator's annual subsidence monitoring report for the underground stream crossing. The operator reported that they had not found any visual evidence of existing or potential subsidence in the entries beneath Soldier Creek.

re

cc: Donna Griffin, OSM
Tom Paluso, Soldier Creek Coal CO.
Joe Helfrich, DOGM

Statistics:

Vehicle: EX 45428 - 562 miles
Per Diem: 1 person X 3 days, 3.5 hours = 143.85
Grant: A&E

0243Q-4-8

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box 1
Price, Utah 84501

May 17, 1985

Ms. Susan Linner
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 81480-1203

Re: NOV N85-4-15-1
Soldier Creek Coal Company
Soldier Canyon Mine
ACT/007/018

Dear Ms. Linner:

On May 2, 1985, Soldier Creek Coal Company received the above mentioned violation. The violation was issued because embankment widths and side slopes, on one portion of the pond, do not conform to our approved plan.

The sediment pond was constructed by enlarging an existing pond. Due to limited space and trying to prevent environmental damage, the existing vertical walls of Soldier Creek were not disturbed. It was never our intention to disturb the stream banks. Although, all newly constructed embankments did meet the approved guidelines.

It is our opinion that the east bank is presently stable and does not present any eminent danger of failure. Any action taken to provide the required widths and slopes would cause damage to the reparian zone and our vegetation test plot. The test plot is located on the east embankment. The pond is inspected on a regular basis and any changes that would affect the stability would be observed. If conditions were to change, corrective actions could be taken.

To prevent this violation problem from reoccurring in the future, we would like to apply for an exemption on the east bank from the embankment and slope requirements.

If you or any of your staff have any questions or would like to visit the site, please contact me.

Sincerely,

SOLDIER CREEK COAL COMPANY

J.T. Paluso

J.T. Paluso
Chief Engineer

cc: Mr. David Lof - Division of Oil, Gas and Mining

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

3 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

May 30, 1985

RECEIVED
JUN 04 1985
SC

CERTIFIED RETURN RECEIPT REQUESTED
P-396-996-985

Mr. J. T. Paluso
Chief Engineer
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Paluso:

Re: NOV N85-4-15-1, Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder No. 3, Carbon County, Utah

In response to your letter dated May 17, 1985, the Division cannot allow exemption on the east bank of the enlarged sediment pond from the embankment and slope requirements unless Soldier Creek can provide suitable justification.

To meet the requirements for consideration for exemption, abatement plans containing the following information will have to be provided to the Division:

1. As-Built drawings of the enlarged sediment pond including a contour map of suitable scale and contour interval, and a detailed section through the stream channel and the east embankment. These drawings will be used by the Division to determine which minimum requirements have not been met by sediment pond and where analysis of the pond embankment will be required.[UMC 817.46, UMC 784.23(b)(6)]

2. Analysis will be required where the standards for embankments and slopes have not been met. Such analysis is to include slope stability of the embankment under saturated conditions (worst case) and must meet a static factor of safety of 1.5. Additionally, the embankment should be checked for surface slope failure due to vertical face at the toe of the slope caused by natural erosion from Soldier Creek.[UMC 817.46, UMC 817.49]

3. Because of the close proximity to Soldier Creek and the potential effect that the creek itself may have on the stability of the sediment pond, analysis of the potential erosion and failure of the embankment by the stream shall also be required. Basis for this analysis shall be based on the 25 year 24 hour event and the peak flow determined for Soldier Creek as it passes below the sediment pond. Sections of the existing stream channel should be taken to determine the effect of the peak flow on the channel embankment. Determination and justification shall be made as to what improvements may be necessary to protect the sediment pond embankment from erosion by the stream channel and to provide stability within the requirements as outlined above.[UMC 817.46(s)]

4. Stability analysis of the sediment pond embankment and the stream channel shall be provided to the Division for approval. In the event that such analysis proves the situation unstable or potentially unstable due to stream channel erosion, Soldier Creek Coal shall provide drawings, plans and a schedule for construction of the abatement plan. Justification of the methodology used to mitigate the situation shall also be included in the plan. The use of gabion retaining walls, riprap, regrading and recontouring would be considered as viable alternatives should such applications become necessary. The abatement plans should also include if necessary, reclamation costs or changes thereof due to any change or modification of the embankment or the stream channel.[UMC 784.16, UMC 817.46]

5. Monitoring will be an important requirement regardless of what determination or methodology is used to determine stability of the sediment pond. Soldier Creek shall provide as part of the abatement plan, a concise and detailed monitoring plan suitable to their abatement proposal.[UMC 784.16, UMC 817.46]

6. Your letter mentioned that remedial action could be taken in the event of a change in conditions as observed through monitoring. In order to effect such remedial action, a contingency plan with specific information as to what action would be taken will have to be submitted and approved as part of the abatement plan. By having prior approval and plans to mitigate any such changes in conditions, Soldier Creek Coal would then be able to implement such plans when the problem occurs, resulting in a reduced chance of significant damage or the potential for further violations.[UMC 784.16, UMC 817.46]

The abatement plan shall be provided to the Division on or before July 1, 1985 and shall include all plans as requested in this letter.

Should you have any additional questions or requirements concerning this matter, please contact Sue Linner for referral to those members on the staff which may be of assistance.

Sincerely,

Lowell P Braxton

L. P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

JRH:jvb
cc: R. Harden
S. Linner
0315R

UTAH
NATURAL RESOURCES
Oil, Gas & Mining
3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

MODIFICATION OF NOTICE OF VIOLATION/CESSATION ORDER

To the following Permittee or Operator:

Name SOLDIER CREEK COAL COMPANY

Mailing Address P.O. BOX I PRICE, UTAH 84501

State Permit No. ACT/007/012

Utah Coal Mining & Reclamation Act, Section 40-10-1 et seq., *Utah Code Annotated* (1953):

Notice of Violation No. N 85-4-15-1 dated MAY 7, 19 85.

Cessation Order No. C _____ dated _____, 19 ____.

Part 1 of 1 is modified as follows: TIME FOR ABATEMENT EXTENDED UNTIL JULY 1, 1985 IN ORDER TO SUBMIT INFORMATION REQUESTED IN THE

Reason for modification is DIVISION'S MAY 30, 1985 LETTER REGARDING THIS NOV

Part ____ of ____ is modified as follows: _____

Reason for modification is _____

Part ____ of ____ is modified as follows: _____

Date of service/mailing 6/13/85 Time of service/mailing 12:30 ☐ a.m. ☒ p.m.

DAVE SALLMAN
Permittee/Operator representative

Title

Signature

DAVID LOF
Division of Oil, Gas & Mining

MINING FIELD SPECIALIST
Title

Signature

WHITE—DOGM YELLOW—OSM PINK—PERMITTEE/OPERATOR GOLDENROD—NOV FILE

an equal opportunity employer

5/85

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box 1
Price, Utah 84501

June 27, 1985

Mr. Lowell P. Braxton
Division of Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180

Dear Mr. Braxton:

Re: NOV N85-4-15-1
Soldier Canyon Mine
ACT/007/018

In response to your letter dated May 30, 1985, Soldier Creek Coal Company has made the decision to stabilize the sediment pond embankment which is in question. The following information is being submitted to substantiate this position.

1. Contour map of the sediment pond.

2. Detailed section through the pond. (Figure 1)

3. Proposed riprap installation drawing. (Figure 2)

4. Slope stability analysis of the stabilized pond embankment. (Figure 3)

5. Stream flow depth calculations due to a 25-year, 24-hour event.

Reconstruction of the crest width to 9.5 feet and resloping of the outslope to 3:1, as required by regulations, is not practical. The outslope would extend into Soldier Creek and not allow sufficient area to accommodate peak flows - refer to Figure 1.

Due to the high embankment safety factor and limited construction space, Soldier Creek Coal Company would like to request relief from embankment width requirement UMC 817.46(l) and outslope regulation UMC 817.46(m).

The addition of riprap will not change reclamation costs. Existing material will be utilized to the maximum extent possible. This will also help to improve flow characteristics of the creek.

Monitoring of the stabilized embankment will be done on a quarterly basis. These inspections will be made during the quarterly sediment pond inspection.

Your prompt attention to this problem would be greatly appreciated as we would like to start construction during the summer.

Sincerely,

SOLDIER CREEK COAL COMPANY

J.T. Paluso

J.T. Paluso
Chief Engineer

JTP:pp
Enclosures

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

September 3, 1985

CERTIFIED RETURN RECEIPT REQUESTED
(P402 457 226)

RECEIVED
SEP 10 1985
SC3

Mr. J. T. Paluso
Chief Engineer
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Paluso:

Re: Abatement Plans for Plans Abating Notice of Violation N85-4-15-1, Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, #3, #4 and #7, Carbon County, Utah

The abatement plans submitted by Soldier Creek Coal Company for Notice of Violation (NOV) N85-4-15-1 have been reviewed by the Division.

The plans have been found deficient and the company must submit the following information before the review can proceed and the plans approved:

1. Riprap design calculations must be submitted verifying that the stream channel will be adequately stabilized for velocities resulting from flow from the 25-year, 24-hour storm. The depth of flow utilizing the proposed riprap must also be supported by calculations.

2. Thirteen (13) copies of the complete set of plans should be submitted in a format allowing direct insertion into the appropriate section of the approved Mining and Reclamation Plans currently on file with the regulatory agencies.

These items must be submitted to the Division prior to September 20, 1985.

The Division appreciates your patience and cooperation in this matter. Please contact Dave Hooper or Rick Summers should you have questions concerning this review.

Sincerely,

D. Wayne Hedberg

D. Wayne Hedberg
Permit Supervisor/
Reclamation Hydrologist

btb
cc: Allen Klein
Lowell Braxton
Randy Harden
Dave Hooper
Sue Linner
Rick Summers
Dave Lof
0338R-33 & 34

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

September 16, 1985

Mr. Lowell P. Braxton
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180

Re: Final Abatement Plans for NOV N85-4-15-1
Soldier Canyon MIne ACT/007/018

Dear Mr. Braxton:

Enclosed you will find thirteen (13) copies of our final submittal for NOV N85-4-15-1. The necessary changes, per the Division's request as stated in a September 3, 1985 letter, have been made.

Please insert this abatement plan at the end of Section 2.11, Reference and Correspondence, of our Mining and Reclamation Plan.

Sincerely,

SOLDIER CREEK COAL COMPANY

J.T. Paluso

J.T. Paluso
Chief Engineer

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

December 27, 1985

CERTIFIED RETURN RECEIPT REQUESTED
P 402 457 815

Mr. Don Ross, President
Soldier Creek Coal Company
PO Box I
Price, Utah 84501

Dear Mr. Ross:

RE: Proposed Assessment for State Violation No. N85-4-15-1, ACT/007/018, Folder #8, Carbon County, Utah

The undersigned has been appointed by the Board of Oil, Gas and Mining as the Assessment Officer for assessing penalties under UMC/SMC 845.11-845.17.

Enclosed is the proposed civil penalty assessment for the above referenced violation. This violation was issued by Division Inspector Dave Lof on May 2, 1985. Rule UMC/SMC 845.2 et seq. has been utilized to formulate the proposed penalty. By these rules, any written information submitted by you or your agent within 15 days of receipt of this notice of violation has been considered in determining the facts surrounding the violation and the amount of penalty.

Within fifteen (15) days after receipt of this proposed assessment, you or your agent may file a written request for an assessment conference to review the proposed penalty. (Address a request for a conference to Ms. Jan Brown at the above address.) If no timely request is made, all pertinent data will be reviewed and the penalty will be reassessed, if necessary, for a finalized assessment. Facts will then be considered which were not available on the date of the proposed assessment due to the length of the abatement period. This assessment does not constitute a request for payment.

Sincerely,

Mike Earl

Mike Earl
Assessment Officer

jmc
Enclosure

cc: D. Griffin
7314Q

WORKSHEET FOR ASSESSMENT OF PENALTIES
UTAH DIVISION OF OIL, GAS AND MINING

COMPANY/MINE Soldier Creek/Soldier Cnyn NOV # N85-4-15-1

PERMIT # ACT/007/018 VIOLATION 1 OF 1

I. HISTORY MAX 25 PTS

A. Are there previous violations which are not pending or vacated, which fall within 1 year of today's date?
ASSESSMENT DATE 12/24/85 EFFECTIVE ONE YEAR DATE 12/25/84

PREVIOUS VIOLATIONS	EFF.DATE	PTS	PREVIOUS VIOLATIONS	EFF.DATE	PTS
N83-6-11-1	2/16/85	1			
N84-6-10-1	3/27/85	1			

1 point for each past violation, up to one year
5 points for each past violation in a CO, up to one year
No pending notices shall be counted

TOTAL HISTORY POINTS 2

II. SERIOUSNESS (either A or B)

NOTE: For assignment of points in Parts II and III, the following applies. Based on the facts supplied by the inspector, the Assessment Officer will determine within which category the violation falls. Beginning at the mid-point of the category, the AO will adjust the points up or down, utilizing the inspector's and operator's statements as guiding documents.

Is this an Event (A) or Hindrance (B) violation? Event

A. Event Violations MAX 45 PTS

1. What is the event which the violated standard was designed to prevent? Environmental Harm

2. What is the probability of the occurrence of the event which a violated standard was designed to prevent?

PROBABILITY	RANGE	MID-POINT
None	0	
Insignificant	1-4	2
Unlikely	5-9	7
Likely	10-14	12
Occurred	15-20	17

ASSIGN PROBABILITY OF OCCURRENCE POINTS 5

PROVIDE AN EXPLANATION OF POINTS Assessed as unlikely based on inspector statement that it would require a large runoff event approaching the 25 year 24 hour variety to cause the event to occur.

3. Would or did the damage or impact remain within the exploration or permit area? Yes

	RANGE	MID-POINT
Within Exp/Permit Area	0-7*	4
Outside Exp/Permit Area	8-25*	16

*In assigning points, consider the duration and extent of said damage or impact, in terms of area and impact on the public or environment.

ASSIGN DAMAGE POINTS 2

PROVIDE AN EXPLANATION OF POINTS Inspector indicates that there is a low probability of the pond failing in the near future.

B. Hindrance Violations MAX 25 PTS

1. Is this a potential or actual hindrance to enforcement? _____

	RANGE	MID-POINT
Potential hindrance	1-12	7
Actual hindrance	13-25	19

Assign points based on the extent to which enforcement is hindered by the violation.

ASSIGN HINDRANCE POINTS _____

PROVIDE AN EXPLANATION OF POINTS _____

TOTAL SERIOUSNESS POINTS (A or B) 7

III. NEGLIGENCE MAX 30 PTS

A. Was this an inadvertent violation which was unavoidable by the exercise of reasonable care? IF SO - NO NEGLIGENCE;
OR Was this a failure of a permittee to prevent the occurrence of a violation due to indifference, lack of diligence, or lack of reasonable care, or the failure to abate any violation due to the same? IF SO - NEGLIGENCE;
OR Was this violation the result of reckless, knowing, or intentional conduct? IF SO - GREATER DEGREE OF FAULT THAN NEGLIGENCE.

		MID-POINT
No Negligence	0	
Negligence	1-15	8
Greater Degree of Fault	16-30	23

STATE DEGREE OF NEGLIGENCE Negligence

ASSIGN NEGLIGENCE POINTS 4

PROVIDE AN EXPLANATION OF POINTS Inspector indicates the operator should have been aware of the inadequate embankment top width.

IV. GOOD FAITH MAX -20 PTS. (either A or B)

A. Did the operator have onsite the resources necessary to achieve compliance of the violated standard within the permit area? IF SO -EASY ABATEMENT

Easy Abatement Situation

Immediate Compliance -11 to -20*
(Immediately following the issuance of the NOV)

Rapid Compliance -1 to -10*
(Permittee used diligence to abate the violation)

Normal Compliance 0
(Operator complied within the abatement period required)

***Assign in upper or lower half of range depending on abatement occurring in 1st or 2nd half of abatement period.**

B. Did the permittee not have the resources at hand to achieve compliance OR does the situation require the submission of plans prior to physical activity to achieve compliance? IF SO - DIFFICULT ABATEMENT SITUATION

Difficult Abatement Situation

Rapid Compliance -11 to -20*
(Permittee used diligence to abate the violation)

Normal Compliance -1 to -10*
(Operator complied within the abatement period required)

Extended Compliance 0
(Permittee took minimal actions for abatement to stay within the limits of the NOV or the violated standard, or the plan submitted for abatement was incomplete)

EASY OR DIFFICULT ABATEMENT? Difficult ASSIGN GOOD FAITH POINTS 0

PROVIDE AN EXPLANATION OF POINTS At the time of assessment, this NOV had not been terminated. Plans required.

V. ASSESSMENT SUMMARY FOR N85-4-15-1

I. TOTAL HISTORY POINTS	2
II. TOTAL SERIOUSNESS POINTS	7
III. TOTAL NEGLIGENCE POINTS	4
IV. TOTAL GOOD FAITH POINTS	0
TOTAL ASSESSED POINTS	13
TOTAL ASSESSED FINE	$130

Mike Earl

ASSESSMENT DATE 12/24/85 ASSESSMENT OFFICER Mike Earl

X PROPOSED ASSESSMENT _____ FINAL ASSESSMENT

7313Q

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

December 30, 1985

CERTIFIED RETURN RECEIPT REQUESTED
(P402 457 265)

JAN 02 1986

Mr. J. T. Paluso
Chief Engineer
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Paluso:

RE: Abatement Plans for Notice of Violation N85-4-15-1, Soldier Canyon Mine, ACT/007/018, #3, #4 and #7, Carbon County, Utah

As a result of the field visit on December 3, 1985 by Division representatives Dave Hooper and Randy Harden, a plan was outlined to Soldier Creek Coal Company to abate Notice of Violation N85-4-15-1 concerning outslope/inslope stability of the onsite sedimentation pond.

The measures of the plan which the Company must commit to are as follows:

1. A variance of the regulation UMC 817.46(m) may be granted by the Division if the operator can prove stability of the sediment pond. The Operator must ensure that the combined average outslope and inslope of the sedimentation pond embankment will be at least 1v:4h.

2. The Company must submit calculations and a map of the disturbed area draining to the sedimentation pond verifying that even with additional fill in the embankment inslope, the pond volume will still be adequate to contain runoff as per regulations. If volume is not sufficient, the pond must be designed appropriately.

3. The minimum width of the embankment must be increased to at least 9.5 feet as per regulation UMC 817.46(l).

4. The resulting embankment configuration must be tested for and pass a stability analysis with an adequate safety factor of 1.5 static under saturated embankment conditions. The outslope of the embankment shall be designed for a static factor of safety of at least 1.1. The failure surface of the outlsope shall be determined and the operator must show that failure of the outslope from natural undercutting will not cause embankment failure of the sediment pond.

5. The operator must submit with the plan, an adequate contour map of the revised sediment pond with appropriate cross sections. The plan must also include a schedule for the construction work required and a target date for completion of the work.

6. The operator must submit to the Division, a monitoring and contingency plan for the sediment pond which shall include observation of the embankment quarterly for stability and undercutting by the stream below the pond embankment. The contingency plan must include a plan for maintaining or repairing the embankment in the event that undercutting encroaches on the embankment to the point where the factor of safety for the embankment reaches 1.1 static under saturated conditions.

Please submit the new plans by February 15, 1986 to ensure sufficient time for the Division to review and approve the plans so that construction may be implemented at the earliest possible date this spring. Should you have questions, please contact Dave Hooper or myself.

Sincerely,

Lowell Braxton for

D. Wayne Hedberg
Permit Supervisor/
Reclamation Hydrologist

DH/btb
cc: Allen Klein
Lowell Braxton
Bart Kale
Dave Lof
0338R-8 & 9

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

January 13, 1986

RECEIVED
JAN 14 1986
SC

CERTIFIED RETURN RECEIPT REQUESTED
P 592 431 913

Mr. Tom Paluso
Soldier Creek Coal Company
P O Box I
Price, Utah 84501

Dear Mr. Paluso:

Re: NOV 85-4-15-1, ACT/007/018, Folder #7, Carbon County, Utah

As per the conversation between Dave Lof and yourself on Friday, January 10, 1986, please find enclosed a modification for Notice of Violation N85-4-15-1. This modification notice extends the time for abatement to February 7, 1986, the 90th day of the maximum time allowable for the abatement of the Notice of Violation. Please be aware that this deadline is some eight days shorter than the deadline of February 15, 1986, quoted to you by Wayne Hedberg in his letter of December 30, 1985 authored by Lowell Braxton. We apologize for the error in abatement deadlines, and sincerely hope that technical reviews will not be so time consuming in the future.

Thank for your cooperation. If you have any questions, please feel free to call.

Sincerely,

Joseph C. Helfrich

Joseph C. Helfrich
Mining Field Supervisor

re

cc: Ken May
Lowell Braxton
David Lof
Wayne Hedberg

0250Q-58

UTAH
NATURAL RESOURCES
Oil, Gas & Mining
3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

MODIFICATION OF NOTICE OF VIOLATION/CESSATION ORDER

To the following Permittee or Operator:

Name SOLDIER CREEK COAL COMPANY

Mailing Address P.O. BOX T PRICE, UT 84501

State Permit No. ACT/007/018

Utah Coal Mining & Reclamation Act, Section 40-10-1 et seq., *Utah Code Annotated* (1953):

Notice of Violation No. N 85-4-15-1 dated MAY 2, 19 85.

Cessation Order No. C _____ dated _____, 19 ____.

Part 1 of 1 is modified as follows: RESPOND TO THE DIVISION'S LETTER OF DEC 30 1985 WITH COMPLETE PLANS BY FEB. 7, 1986 WHICH IS THE 90TH DAY OF THE MAXIMUM TIME ALLOWABLE FOR THE ABATEMENT OF THE NOV.

Reason for modification is

Part ____ of ____ is modified as follows:

Reason for modification is

Part ____ of ____ is modified as follows:

Date of service/mailing JAN. 10, 1986 Time of service/mailing 3:20 ☐ a.m. ☒ p.m.

DAVE SAMMAN OR TOM PALUSO
Permittee/Operator representative

Title

Signature

DAVID LOF
Division of Oil, Gas & Mining

MINING FIELD SPECIALIST
Title

Signature

Certified Return Receipt
P 593 401 913

WHITE—DOGM YELLOW—OSM PINK—PERMITTEE/OPERATOR GOLDENROD—NOV FILE

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

January 31, 1986

Mr. Lowell P. Braxton
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Abatement Plans for NOV N85-4-15-1
Soldier Canyon Mine
ACT/007/018

Dear Mr. Braxton:

Enclosed please find seven copies of our abatement plans for NOV N85-4-15-1. These plans are being submitted in response to the Division's December 30, 1985, letter.

Sincerely,

SOLDIER CREEK COAL COMPANY

J.T. Paluso

J.T. Paluso
Chief Engineer

JTP:pp
Enclosures

Soldier Creek Coal Co.

Telephone 801-637-6360

P.O. Box I
Price, Utah 84501

March 7, 1986

Mr. Lowell P. Braxton
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Addendum to January 31, 1986
Abatement Plan for NOV N85-4-15-1
Sedimentation Pond Modification
Soldier Canyon Mine
ACT/007/018

Dear Mr. Braxton:

Enclosed, please find seven copies of our addendum to abatement plans for NOV N85-4-15-1. I hope this information will complete the review process by the division.

Sincerely,

SOLDIER CREEK COAL COMPANY

J.T. Paluso

J.T. Paluso
Chief Engineer

JTP:pp
Enclosures

Addendum to the January 31, 1986
Abatement Plans for NOV N85-4-15-1
Soldier Creek Coal Company
Soldier Canyon mine
ACT/007/018
March 7, 1986

This addendum is in response to a conversation between Messrs. Dave Spillman, Wayne Hedberg and Randy Harden on February 21, 1986.

Stream Encroachment

Approval from the necessary state and federal agencies will be obtained prior to any disturbance of Soldier Creek.

Soldier Creek Cross Section

Refer to the attached drawing for details on how existing stream obstructions will be removed. These rocks will be placed on the stream bank to provide erosion protection. Some incidental blasting of the larger rocks may be necessary.

Soil Testing

Additional soil tests will be conducted at the site to ensure stability parameters. Testing will include Atterberg Limits for soil classification and Triaxial Shear tests for stability. All testing will be supervised by a qualified soil scientist and P.E.

P.E. Certification

All construction activities will be supervised by a registered P.E. As built drawing will be certified by a P.E. and submitted to the Division within 60 days of completion of construction.

Soldier Creek Coal Co.

Telephone 801-637-6360

P.O. Box I
Price, Utah 84501

March 17, 1986

Mr. Lowell P. Braxton
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Re: Abatement Plan for NOV N85-4-15-1
Sedimentation Pond Modification
Soldier Canyon Mine
ACT/007/018

Dear Mr. Braxton:

Enclosed, please find one copy each of the soil reports which were requested by Randy Harden. These soil reports were referenced in the previously submittted stability analyses prepared by EarthFax Engineering, Inc.

Sincerely,

SOLDIER CREEK COAL COMPANY

Dave Spillman

D.G. Spillman
Mine Engineer

DGS:pp
Enclosures

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

March 20, 1986

RECEIVED
MAR 21 1986
993

CERTIFIED RETURN RECEIPT REQUESTED
(P592-429-522)

Mr. J. T. Paluso
Chief Engineer
Soldier Creek Coal Company
P.O. Box I
Price, Utah 84501

Dear Mr. Paluso:

Re: Approval of Abatement Plan for NOV N85-4-15-1, Sedimentation Pond Modification, Soldier Canyon Mine, ACT/007/018, Folder #4 & 7, Carbon County, Utah

The Division has completed the review of Soldier Creek Coal Company's latest abatement plan addendum (received March 12, 1986) to the Notice of Violation N85-4-15-1. The addendum was provided in response to remaining concerns expressed to David Spillman during a meeting on February 21, 1986 with Randy Harden and Wayne Hedberg of the Division. Additionally, copies of the soils reports requested by the Division were received on March 18, 1986.

The abatement responses provided by Soldier Creek Coal Co. are adequate to address abatement of NOV 85-4-15-1 provided all construction is completed by August 1, 1986 and with the following stipulations:

1. The Operator must obtain all necessary State and Federal approvals or permits required prior to any disturbance of Soldier Creek. Upon receipt, the Operator shall provide the Division with copies of said approvals (i.e., State Health, Division of Water Rts., BLM, County Planning Office, etc.). All required approvals and permits must be in effect before reconstruction of the sediment pond embankment commences.

2. Within 60 days of the reconstruction of the sediment pond, the Operator shall submit a certified design and construction report for the impoundment to the Division. The information included in the post-construction report shall contain at a minimum:

(a) copies of the soil sample locations and analysis used prior to construction in addition to those samples taken during the construction,

(b) as-built contour drawings of the pond and stream channel, a stage capacity curve and appropriate cross sections,

(c) a stability analysis based on the as-built embankment and the soil parameters derived from samples taken during the construction. Such information provided in the report must be sufficient to allow for a variance from UMC 817.46(m).

Thank you for your cooperation in finalizing this abatement action.

Sincerely,

L. P. Braxton

L. P. Braxton
Administrator
Mineral Resource Development
and Reclamation Program

REVIEW CHRONOLOGY:

A. Operator Submittals
1. May 20, 1985
2. July 1, 1985
3. Sept. 20, 1985
4. Feb. 4, 1986

B. DOGM Responses
1. May 30, 1985
2. September 3, 1985
3. Dec. 30, 1985
4. March 19, 1986

DWH:jvb
cc: Allen Klein
Wayne Hedberg
Sue Linner
Randy Harden
Joe Helfrich
Dave Hooper
1011R-78

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

January 16, 1985

REGISTERED RETURN RECEIPT REQUESTED
P 402 457 347

Mr. Tom Paluso, Chief Engineer
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Paluso:

RE: Finalized Assessment for State Violation No. N83-6-11-1, ACT/007/018, Folder #8, Carbon County, Utah

The civil penalty for the violation No. N83-6-11-1 has been finalized in the amount shown in the attached assessment conference report. This assessment is finalized as a result of the meeting, discussion or letter described on the reassessment form.

Any appeal to the Board of Oil, Gas and Mining must be made in writing within fifteen (15) days of your receipt of this letter. Additionally , you must have escrowed the assessed civil penalties with the Division within a maximum of 30 days of receipt of this letter but in all cases prior to the Board Hearing. Failure to comply with the above-stated statutory requirements shall result in a waiver of your right of further recourse.

If no appeal or an untimely improper appeal is made, the assessed civil penalties must be tendered to the Division within thirty (30) days of your receipt of this letter.

Thank you for your cooperation.

Sincerely,

Ronald W. Daniels
Acting Assessment Officer

re
cc: Donna Griffin, OSM Albuquerque
Joe Helfrich
Barbara Roberts
03900

WORKSHEET FOR ASSESSMENT OF PENALTIES
UTAH DIVISION OF OIL, GAS AND MINING

COMPANY/MINE Soldier Creek Coal Company NOV # N83-6-11-1

PERMIT # ACT/007/018 VIOLATION 1 OF 1

I. HISTORY MAX 25 PTS

A. Are there previous violations which are not pending or vacated, which fall within 1 year of today's date?
ASSESSMENT DATE 1-11-84 EFFECTIVE ONE YEAR DATE 1-10-83

PREVIOUS VIOLATIONS	EFF.DATE	PTS	PREVIOUS VIOLATIONS	EFF.DATE	PTS
N82-5-1-5	2-24-83	5			
N83-5-4-1	5-24-83	1			

1 point for each past violation, up to one year
5 points for each past violation in a CO, up to one year
No pending notices shall be counted

TOTAL HISTORY POINTS 6

II. SERIOUSNESS (either A or B)

NOTE: For assignment of points in Parts II and III, the following applies. Based on the facts supplied by the inspector, the Assessment Officer will determine within which category the violation falls. Beginning at the mid-point of the category, the AO will adjust the points up or down, utilizing the inspector's and operator's statements as guiding documents.

Is this an Event (A) or Hindrance (B) violation? Hindrance

A. Event Violations MAX 45 PTS

1. What is the event which the violated standard was designed to prevent? Environmental Harm

2. What is the probability of the occurrence of the event which a violated standard was designed to prevent?

PROBABILITY	RANGE	MID-POINT
None	0	
Insignificant	1-4	2
Unlikely	5-9	7
Likely	10-14	12
Occurred	15-20	17

ASSIGN PROBABILITY OF OCCURRENCE POINTS 17

PROVIDE AN EXPLANATION OF POINTS Environmental harm occurred

3. Would or did the damage or impact remain within the exploration or permit area? No

	RANGE	MID-POINT
Within Exp/Permit Area	0-7*	4
Outside Exp/Permit Area	8-25*	16

*In assigning points, consider the duration and extent of said damage or impact, in terms of area and impact on the public or environment.

ASSIGN DAMAGE POINTS 16

PROVIDE AN EXPLANATION OF POINTS _____

B. Hindrance Violations MAX 25 PTS

1. Is this a potential or actual hindrance to enforcement? _____

	RANGE	MID-POINT
Potential hindrance	1-12	7
Actual hindrance	13-25	19

Assign points based on the extent to which enforcement is hindered by the violation.

ASSIGN HINDRANCE POINTS _____

PROVIDE AN EXPLANATION OF POINTS _____

TOTAL SERIOUSNESS POINTS (A or B) 33

III. NEGLIGENCE MAX 30 PTS

A. Was this an inadvertent violation which was unavoidable by the exercise of reasonable care? IF SO - NO NEGLIGENCE;
OR Was this a failure of a permittee to prevent the occurrence of a violation due to indifference, lack of diligence, or lack of reasonable care, or the failure to abate any violation due to the same? IF SO - NEGLIGENCE;
OR Was this violation the result of reckless, knowing, or intentional conduct? IF SO - GREATER DEGREE OF FAULT THAN NEGLIGENCE.

		MID-POINT
No Negligence	0	
Negligence	1-15	8
Greater Degree of Fault	16-30	23

STATE DEGREE OF NEGLIGENCE Greater negligence than ordinary

ASSIGN NEGLIGENCE POINTS 23

PROVIDE AN EXPLANATION OF POINTS Material was deposited off the mine site knowingly.

IV. GOOD FAITH MAX -20 PTS. (either A or B)

A. Did the operator have onsite the resources necessary to achieve compliance of the violated standard within the permit area? IF SO -EASY ABATEMENT

Easy Abatement Situation

Immediate Compliance -11 to -20*
(Immediately following the issuance of the NOV)

Rapid Compliance -1 to -10*
(Permittee used diligence to abate the violation)

Normal Compliance 0
(Operator complied within the abatement period required)

*Assign in upper or lower half of range depending on abatement occurring in 1st or 2nd half of abatement period.

B. Did the permittee not have the resources at hand to achieve compliance OR does the situation require the submission of plans prior to physical activity to achieve compliance? IF SO - DIFFICULT ABATEMENT SITUATION

Difficult Abatement Situation

Rapid Compliance -11 to -20*
(Permittee used diligence to abate the violation)

Normal Compliance -1 to -10*
(Operator complied within the abatement period required)

Extended Compliance 0
(Permittee took minimal actions for abatement to stay within the limits of the NOV or the violated standard, or the plan submitted for abatement was incomplete)

EASY OR DIFFICULT ABATEMENT? N.A. ASSIGN GOOD FAITH POINTS _____

PROVIDE AN EXPLANATION OF POINTS _____

V. ASSESSMENT SUMMARY FOR N83-6-11-1

I. TOTAL HISTORY POINTS	6
II. TOTAL SERIOUSNESS POINTS	33
III. TOTAL NEGLIGENCE POINTS	23
IV. TOTAL GOOD FAITH POINTS	-
TOTAL ASSESSED POINTS	62
TOTAL ASSESSED FINE	$1540.

ASSESSMENT DATE 1-14-85 ASSESSMENT OFFICER Ronald W. Daniels RW Daniels

_____ PROPOSED ASSESSMENT X FINAL ASSESSMENT

7313Q

SOLDIER CREEK COAL COMPANY

INVOICE NUMBER	INVOICE DATE	DESCRIPTION	GROSS AMOUNT	DISCOUNT	NET AMOUNT
000000	VENDOR	STATE OF UT-OIL,GAS,MINE		CHECK DATE	2/28/85
N83-6-11	2/28/85	STATE VIOLATION	1,540.00		1,540.00
CHECK NO:	5425	TOTALS	1,540.00		1,540.00

SOLDIER CREEK COAL CO.

TELEPHONE (801) 637-6360

P.O. BOX I
PRICE, UTAH 84501

97-52
1243

ZIONS FIRST NATIONAL BANK
45 S. CARBON AVE.
PRICE, UTAH 84501

CHECK DATE	CHECK NUMBER
2/28/85	5425

THOUSAND FIVE HUNDRED FORTY AND 00/100

CHECK AMOUNT
*******1,540.00

PAY TO THE ORDER OF

STATE OF UT-OIL,GAS,MINE
4241 STATE OFFICE BUILD
SALT LAKE CITY, UTAH
84114

NOT NEGOTIABLE

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

February 27, 1985

MAR 1 1985
SC3

CERTIFIED RETURN RECEIPT REQUESTED
P 402 457 362

Mr. Dave Spillman
Soldier Creek Coal Company
P. O. Box I
Price, Utah 84501

Dear Mr. Spillman:

RE: Finalized Assessment for State Violation No. N84-6-10-1
ACT/007/018, Folder #8, Carbon County, Utah

The civil penalty for the above referenced violation has been finalized. This assessment has been finalized as a result of a review of all pertinent data and facts which were not available on the date of the proposed assessment, due to the length of the abatement period.

Within fifteen (15) days of your receipt of this letter, you or your agent may make a written appeal to the Board of Oil, Gas and Mining. To do so, you must have escrowed the assessed civil penalty with the Division within a maximum of 30 days of receipt of this letter, but in all cases prior to the Board Hearing. Failure to comply with this requirement will result in a waiver of your right of further recourse.

If no timely appeal is made, this assessed civil penalty must be tendered to the Division within thirty (30) days of your receipt of this letter.

Thank you for your cooperation.

Sincerely,

Mary Ann Wright
Assessment Officer

re

cc: Donna Griffin, OSM Albuquerque Field Office
B. Roberts, Attorney Generals Office
9099Q

WORKSHEET FOR FINAL ASSESSMENT OF PENALTIES
UTAH DIVISION OF OIL, GAS AND MINING

COMPANY/MINE Soldier Creek/Soldier Canyon NOV # N84-6-10-1

PERMIT # ACT/007/018 VIOLATION 1 OF 1

Nature of violation: Discharge transferred to an unapproved point.

	Proposed Assessment	Final Assessment
(1) History/Prev. Vio.	0	0
(2) Seriousness		
(a) Probability of Occurrence	0	0
Extent of Damage	8	8
(b) Hindrance to Enforcement		
(3) Negligence	12	12
(4) Good Faith	0	0
TOTAL	20	20
	TOTAL ASSESSED FINE	$ 200

3. Narrative:
(Brief explanation for any changes made in assignment of points and any additional information that was available after the proposed assessment.)

Assessment Officer Mary Ann Wright

Assessment Date February 27, 1985 Mary Ann Wright

re
0109Q

SCOTT M. MATHESON
Governor

GORDON E. HARMSTON
Executive Director, NATURAL RESOURCES

CLEON B. FEIGHT
Director

STATE OF UTAH
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS, AND MINING
1588 West North Temple
Salt Lake City, Utah 84116
(801) 533-5771

OIL, GAS, AND MINING BOARD

CHARLES R. HENDERSON
Chairman

JOHN L. BELL
C. RAY JUVELIN
THADIS W. BOX
MAXILIAN A. FARBMAN
EDWARD T. BECK
E. STEELE McINTYRE

Vacation or Termination of Notice or Order

To the Following Permitee or Operator:

Name: Soldier Creek Coal Co

Mailing Address: P.O. Box 1 Price UT 84501

State Permit No. ACT/007/018

Utah Coal Mining and Reclamation Act, Section 40-10-1 et. seq., Utah Code Annotated (1953):

Notice of Violation No. N 83-6-4-1 ___ Y ___ TV dated Oct 24, 1983 19___.

Cessation Order No. C ___ Y ___ TV dated ___ 19___.

Violation No. 1 is hereby ✓ Terminated ___ Vacated because:

Violation No. ___ is hereby ___ Terminated ___ Vacated because:

Violation No. ___ is hereby ___ Terminated ___ Vacated because:

Date of Service: Oct 24, 1983

Signature of Authorized Representative: Barton D. Cole

Time of Service or Mailing: the 24th from office ___ a.m. ___ p.m.

Name and I.D. No.: Barton D. Cole

Received 2-12-85

SOLDIER CREEK COAL COMPANY

61

INVOICE NUMBER	INVOICE DATE	DESCRIPTION	GROSS AMOUNT	DISCOUNT	NET AMOUNT
000000	VENDOR	STATE OF UT-OIL,GAS&MINE		CHECK DATE	3/13/85
N84-6-10-1	3/07/85	STATE VIOLATION	200.00		200.00
CHECK NO	5488	TOTALS	200.00		200.00

SOLDIER CREEK COAL CO.

TELEPHONE (801) 637-6360

P.O. BOX I
PRICE, UTAH 84501

97-52
1243

ZIONS FIRST NATIONAL BANK
45 S. CARBON AVE.
PRICE, UTAH 84501

CHECK DATE	CHECK NUMBER
3/13/85	5488

Two hundred and no/100

CHECK AMOUNT
**********200.00

PAY TO THE ORDER OF

STATE OF UT-OIL,GAS&MINE
4241 STATE OFFICE BUILD
SALT LAKE CITY, UTAH
84114

NOT NEGOTIABLE

AUTHORIZED SIGNATURE

AUTHORIZED SIGNATURE

March 12, 1985

MAR 14 1985
SC3

TO: Coal File, Inspection and Enforcement Folder

FROM: David Lof, Mining Field Specialist

RE: Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder #7, Carbon County, Utah

DATE:	February 21, 1985
TIME:	1:40 - 4:30 p.m.
WEATHER:	Sunny and mild
COMPANY OFFICIALS:	Rick Olsen, Dave Spillman
STATE OFFICIALS:	David Lof
ENFORCEMENT ACTION:	None

Compliance With Permanent Performance Standards

UMC 771 et al Permits

The following permits and approvals were reviewed in the operators mine office:

1. The operators interim approval letter from the Division dated January 17, 1979.

2. A July 14, 1983 letter from the Division approving the construction of the sewage lagoons.

3. An August 7, 1984 letter from the Division approving a runoff control plan modification submitted by the operator on July 6, 1984.

4. An October 16, 1984 letter from the Division approving the operators vegetation field trial/test plots plan.

5. The following BLM Right-of-Ways (ROW):

   A. U-53806 issued November 6, 1984 for the waste rock disposal site.

   B. U-50167 issued June 2, 1982 for the sewage lagoons.

   C. U-33855 issued October 17, 1976 for the mine haul road.

   D. U-52071 issued February 9, 1983 for the sediment pond area.

UMC 817.11 Signs and Markers:

Mine identifications signs were posted along the county road above and below the mine site as required. The sewage lagoons site which is down the canyon from the main mine site is fenced to prevent access.

Signs posted along the fence warn people of the nature of the material in the lagoons and identify the site as part of Soldier Creek's operations. However, there was not a mine identification sign per say. Therefore, I asked the operator to post a mine identification sign on the west side of the pond near the gate.

UMC 817.41 -.51 Hydrologic Balance

All disturbed area runoff controls for the mine yard and parking area appeared to be adequately maintained. There was no evidence of any disturbed area runoff from these areas bypassing the sediment pond.

Sediment Pond Inlet

There was some disturbed area runoff bypassing the sediment pond inlet and going down the slope into the sediment pond causing some erosion on the down slope. While discussing this with Mr. Spillman, he showed me the runoff control modification approved August 7, 1984, which will address this problem when it is implemented this spring.

Binwall

As noted in Ken Wyatt's memo for his November 1984 complete inspection, the operator needs to maintain drainage controls to prevent further settling and erosion of the binwall fill material. The operator's runoff control plan modification approved August 7, 1984 addresses this area also.

Exhaust Shaft and Fan Area

This area was covered with at least one foot of snow. There has been no activity except for the use of the substation. Mr. Olsen indicated to me that the area is covered by a gravel base which is suppose to control the sediment from the area.

Pond Inspections

The operator had quarterly sediment pond and sewage lagoon inspection reports through December 18, 1984.

Pond Certification

The operator had annual pond certification reports for both the sediment pond and sewage lagoon embankments. The reports were dated January 12, 1984 and certified by Tom Paluso, who is a Registered Professional Engineer, employed by Soldier Creek Coal Company. His state of Utah certification number is #4028. Mr. Spillman indicated that they are going to wait until spring this year before they certify the embankments, so that a more accurate assessment can be made.

UMC 817.52 Surface and Ground Water Monitoring

The EPA issued the operator NPDES permit UT-0023680 on October 29, 1982. This permit covers discharges of mine water and sediment pond overflow into Soldier Creek. The permit will expire on September 30, 1987.

Surface water and NPDES data was available through January 1985. There were no apparent problems with the analysis except that the operator had failed to analyze for Total Manganese. I told Mr. Spillman that UMC 817.42 (a)(7) requires the operator to meet certain total Manganese effluent limitations. Therefore, they must analyze total Manganese for each sample taken of mine water discharge and sediment pond discharge.

UMC 817.61 Use of Explosives

Examination of the explosive magazines, found the magazines locked and signs posted as required. I asked Mr. Spillman if there had been any recent blasting activity. He said that they had not done any blasting on the surface since the fan and rock slope were constructed approximately two years ago.

UMC 817.71-.73 Disposal of Underground Development Waste and Excess Spoil and Nonacid and Nontoxic Forming Coal Processing Waste.

The operator has proposed a waste rock disposal site in their MRP. The site has not yet been approved nor has it been disturbed. It is located west of the sewage lagoon site. The site is on BLM land for which the operator holds ROW U-53806 issued November 6, 1984.

UMC 817.89 Disposal of Noncoal Waste

An inspection of the noncoal waste bins found no unauthorized materials being disposed of.

re

cc: Donna Griffin, OSM
Dave Spillman, Soldier Creek Coal Company
Joe Helfrich, DOGM

Statistics:

Vehicle: EX 49611, 543 miles
Per Diem: 1 person X 2 days 9 hours = $119.90
Grant: A&E
0166Q-1-3

April 11, 1985

TO: Coal File, Inspection and Enforcement File

FROM: David Lof, Mining Field Specialist

RE: Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, #7, Carbon County, Utah

On March 21, 1985, I conducted a partial inspection at the above-mentioned mine site. I conducted the inspection after the operator's normal working hours, therefore, I was unaccompanied on the inspection.

Mine Identification Sign

During my February 21, 1985 complete inspection, I requested that the operator post a mine identification sign on the west side of the sewage lagoon ponds near the gate to the ponds. The operator did have signs posted on the fence warning people of the nature of the material in the lagoons and identifying the site as part of Soldier Creek's operations, but it did not have all the information required on a mine identification sign. At the time of this inspection, the operator had not installed a mine identification sign as requested.

Runoff Controls

The disturbed area runoff diversion around the mine site was properly maintained as was the cross-culvert inlet on the northwest side of the road.

Most, if not all snow cover, was gone from the mine site.

There was no discharge from the undisturbed bypass culvert at the time of the inspection.

btb
cc: ~~Dave Spillman~~
Donna Griffin
Joe Helfrich
Statistics:
See Knight Mine memo dated April 11, 1985
0379R-18

APR 15 1985
SCS

Jim Walker

MAY 09 1985

May 6, 1985

TO: Coal File, Inspection and Enforcement Folder

FROM: David Lof, Mining Field Specialist

RE: Soldier Canyon Mine, ACT/007/018, Folder #7. Carbon County, Utah

DATE:	April 18, 1985
TIME:	12:30 - 4:00 p.m.
WEATHER:	Overcast and mild; to raining and cool
COMPANY OFFICIALS:	Tom Paluso
STATE OFFICIALS:	David Lof
ENFORCEMENT ACTION:	NOV N85-4-15-1

Compliance With Permanent Performance Standards

UMC 771 et al Permits

The following permits were reviewed in the operator's mine office :

1. The operator's interim approval letter from the Division dated January 17, 1979.
2. A September 3, 1982 letter from the Division granting conditional approval of the operator's ventilation shaft and the underground stream crossing.
3. A May 17, 1983 letter from the Division approving drainage diversion improvements on the mine yard.
4. A July 14, 1983 letter from the Division approving the construction of the operator's sewage lagoons.
5. An August 7, 1984 letter from the Division approving a runoff control modification submitted by the operator on July 6, 1984.

UMC 817.11 Signs and Markers

Mine identification signs are posted along the county road above and below the mine site as required.

The sewage lagoon site which is down the canyon from the main mine site has signs posted along its fence identifying the site as part of Soldier Creek's operation and warning people of the nature of the material within the lagoons. During my last complete inspection on February 21, 1985, I asked the operator to post a mine identification sign on the west side of the pond near the gate.

At the time of this inspection a mine identification sign had not been posted near the sewage lagoon gate.

I asked Mr. Paluso about this and he informed me that they had ordered a sign and had not received it yet. He showed me a purchase request form dated March 19, 1985 for the puchase of a mine identification sign from Tony Koss of Price.

Perimeter markers were properly posted around the permitted disturbed area boundary.

UMC 817.21-.23 Topsoil

What little topsoil the operator has removed and stored for redistribution upon final reclamation is stored on the southern slope of the material storage pad south of the sediment pond. The stockpile is identified by a topsoil sign and was well vegetated.

UMC 817.41-.51 Hydrologic Balance

The disturbed area runoff controls for the mine yard, parking area and material storage area by the pond were adequately maintained.

Sediment Pond Inlet

As was mentioned in my March 12, 1985 memorandum for my February 1985 inspection some disturbed area runoff had been bypassing the sediment pond inlet and going down the slope into the sediment pond. This runoff has caused excessive erosion all along the downslope from the road to the sediment pond. The operator received approval on August 7, 1984 for a runoff control modification plan which addresses this problem, however in the approval letter a date for the implementation of these plans was not given. I informed Mr. Paluso that the plans had to be implemented by June 30, 1985 or enforcement action would be taken.

Bin Wall

The runoff control modification plan which was approved by the Division on August 7, 1984 also addresses settling and erosion of the bin wall fill material. The June 30, 1985 deadline for implementation of the above mentioned approved plans also applies to the drainage controls proposed for the bin wall.

Sediment Pond, NOV N85-4-15-1

While inspecting the sediment pond, I found two problems with the pond's embankment.

1. The top of the sediment pond embankment was only 6 feet wide at its narrowest point. According to the plans for the sediment pond which were approved by the Division on November 23, 1979, the top width of the embankment is suppose to be 9.5 feet.

2. According to the operator's approved plan the combined side slopes of the sediment pond embankment should not be less than one to five with neither slope steeper than one to two. The inside slopes of the sediment pond were O.K. but the outside slope, especially the east side adjacent to Soldier Creek, does not comply with the regulations nor the approved plan. It is almost vertical at some points and is highly eroded due to Soldier Creek.

Because of the problems with the sediment pond's embankment Notice of Violation N85-4-15-1 was issued, it reads as follows:

Nature of the Violation

Failure to mine in accordance with an approved interim permit. Failure to construct and maintain the sediment pond embankment to ensure the proper top width. Failure to construct and maintain the sediment pond embankment to ensure proper side slope gradient.

Provisions of the Regulations, Act or Permit Violated

UCA 40-10-22(1)(c)
UMC 771. 19
UMC 817.46 (l)
UMC 817.46 (m)

Portion of the Operation to Which Notice Applies

Sediment pond embankment.

Remedial Action Required

A. Submit complete plans to the Division to bring the sediment pond into compliance with UMC 817.46 (l) and UMC 817.46 (m).

B. Implement said plans upon Division approval.

Time for Abatement

A. May 20, 1985

B. Complete the implementation of the approved plans within 30 days of receipt of approval from the Division.

The violation was issued from the Division office on May 2, 1985.

Pond Inspections

The operator had quarterly sediment pond and sewage inspection reports through March 25, 1985. These reports did not indicate any problems with either pond.

UMC 817.52 Surface and Groundwater Monitoring

The operator is currently operating under NPDES permit UT-0023680 issued by EPA on October 29, 1982. This permit is for the mine water discharge and sediment pond overflow into Soldier Creek. The permit is scheduled to expire on September 30, 1987.

Surface water and mine water discharge data was available through March 15, 1985. There were no apparent problems with the data which were reviewed. The operator started analyzing their mine water discharge samples for Total Manganese in February 1985 as requested during my February 1985 complete inspection.

Mine water was discharging into Soldier Creek at the time of my inspection at a rate of approximately several CFS. I was not able to get a sample at the discharge point because it is inaccessible. I asked Mr. Paluso how they sampled their mine water discharge and he informed me that there is a valve in the mine water pipe just inside the mine workings from which they take their samples.

UMC 817.57 Stream Buffer Zones

Stream buffer zone signs were posted along Soldier Creek as required.

UMC 817.71-.73 Disposal of Underground Development Waste and Excess Spoil, and Nonacid and Nontoxic Forming Coal Processing Waste

Mr. Paluso informed me that they are currently disposing of all their underground development waste underground in the cross cuts within the stream crossing buffer area.

UMC 817.121-.126 Subsidence Control

Sitpulation 9-2-82-4-CY was attached to the conditional approval for the ventilation shaft and underground stream crossing dated September 3, 1982. This stipulation required that a subsidence monitoring plan for the underground stream crossing be submitted to the Division by October 1, 1982,and the data be submitted annually.

On September 29, 1982, the Division received a subsidence monitoring plan from the operator. I asked Dave Spillman of Soldier Creek Company if they had submitted their 1984 subsidence data yet? He showed me a rough draft of a letter he was working on regarding their subsidence monitoring for the stream crossing area for the year 1984.

On April 26, 1985, the Division received the operator's annual subsidence monitoring report for the underground stream crossing. The operator reported that they had not found any visual evidence of existing or potential subsidence in the entries beneath Soldier Creek.

re

cc: Donna Griffin, OSM
Tom Paluso, Soldier Creek Coal CO.
Joe Helfrich, DOGM

Statistics:

Vehicle: EX 45428 - 562 miles
Per Diem: 1 person X 3 days, 3.5 hours = 143.85
Grant: A&E

0243Q-4-8

RECEIVED
JUN 24 1985
SC3

Dave Spillman

June 18, 1985

TO: Coal File, Inspection and Enforcement Folder

FROM: David Lof, Mining Field Specialist

RE: Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder #7, Carbon County, Utah

On May 31, 1985, I conducted a partial inspection at the above mentioned mine site. I was accompanied on this inspection by Dave Spillman, of Soldier Creek Coal Company. At the beginning of my inspection it was raining and cool, as the inspection progressed the weather cleared and warmed up.

Mine Identification Sign

During my February 21, 1985 complete inspection, I requested that the operator post a mine identification sign on the west side of the sewage lagoon ponds near the gate to the ponds. During my April 18, 1985 complete inspection, Tom Paluso of Soldier Creek Coal Company, showed me a purchase request form dated March 19, 1985 for the purchase of a mine identification sign. At the time of this inspection, I found that the operator had received and properly posted a complete mine identification sign on the gate of the sewage lagoon ponds.

Sediment Pond Inlet and Bin Wall Construction

During my April 18, 1985 complete inspection, I informed Mr. Paluso that the sediment pond inlet and binwall runoff controls which were approved by the Division on August 7, 1984 must be constructed by June 30, 1985. At the time of this inspection, Mr. Spillman informed me that the operator had contracted H. E. Lowdermilk Construction Company to do the work.

Sediment Pond, NOV N85-4-15-1

This violation was issued on May 2, 1985 for the operators failure to mine in accordance with their approved interim permit and for failure to construct and maintain the sediment pond embankment to ensure proper embankment top width and side slope gradient. The operator was required to submit complete plans to the Division to bring the sediment pond in compliance with UMC 817.46 (l) and UMC 817.46 (m) by May 20, 1985 and to complete the implementation of the plans within 30 days of Division approval.

On May 20, 1985 the Division received information from the operator regarding the sediment pond embankment. This information was reviewed and a deficiency letter sent from the Division on May 30, 1985. The letter required that all information requested be submitted to the Division on or before July 1, 1985.

Runoff Controls

Mr. Spillman and I walked the entire length of the disturbed area runoff diversion around the perimeter of the mine site. It was properly maintained, however, there was a small amount of material which had been deposited in the diversions which could be cleaned out.

We inspected the inlet to the undisturbed culvert in the Canyon above the mine site. It appeared to be constructed according to plans and properly maintained.

re

cc: Dave Spillman, Soldier Creek Coal
Donna Griffin, OSM
Joe Helfrich, DOGM

Statistics:

Vehicle: EX 45429, 346 miles
Per Diem: None
Grant: A&E
0243Q-38-39

Dave Spillman

July 3, 1985

RECEIVED
JUL 15 1985
SC3

TO: Coal File, Inspection and Enforcement Folder

FROM: David Lof, Mining Field Specialist

RE: Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder #7, Carbon County, Utah

On June 13, 1985, I conducted a partial inspection at the above mentioned mine site.

Sediment Pond Inlet and Binwall Construction

During my April 18, 1985 complete inspection, I informed Tom Paluso of Soldier Creek Coal Company, that the sediment pond inlet and binwall runoff controls which were approved by the Division on August 7, 1984 must be constructed by June 30, 1985.

At the time of this inspection, I found that the operators contractor (H. E. Lowdermilk Construction Company) was working on the runoff controls for the binwall. The contractor was in the process of installing conveyor belting along the edge of the binwalls to prevent runoff from going through the binwalls and displacing fill from behind the binwall. In addition, they were in the process of constructing a culvert downspout system which will collect runoff from the top of the binwalls and convey it in a controlled manner to the sediment pond. Due to the work being done, there was an accumulation of excess fill which I told the operator they could use to fill in the rills and gullies on the downslope from the road to the sediment pond. Dave Spillman, of Soldier Creek Coal Company who inspected the project with me assured me that Lowdermilk would have the work completed by June 30, 1985.

Sediment Pond, NOV N85-4-15-1

This violation was issued on May 2, 1985 for the operators failure to mine in accordance with their approved interim permit, and for failure to construct and maintain the sediment pond embankment to ensure proper embankment top width and side slope gradient. The operator was required to submit complete plans to the Division to bring the sediment pond in compliance with UMC 817. 46 (1) and UMC 817.46 (m) by May 20, 1985 and to complete the implementation of the plans within 30 days of Division approval.

On May 20, 1985, the Division received information from the operator reqarding the sediment pond embankment. This information was reviewed and deficiency letter was sent from the Division on May 30, 1985. The letter required that all information requested by submitted to the Division on, or before, July 1, 1985.

When I arrived at the mine site, Dave Spillman and Tom Paluso were in the process of surveying the sediment pond for the purpose of responding to the May 30, 1985 letter. They told me that they had

some problems and concerns with some of the information requested in the deficiency letter. I recommended to them that they call the Division Technical staff members who prepared the deficiency letter and discuss their concerns with them since I was not familiar enough with the concerns which the Technical staff wanted addressed.

While discussing the sediment pond embankment with Mr. Spillman and Mr. Paluso, they told me that they would probably propose a plan to widen and extend the embankment at its narrowest point into the stream channel. They explained that they would pull some of the riprap from the stream toward the sediment pond embankment and bring in fill material to place on top of the riprap inorder to widen the embankment.

Runoff Controls

The disturbed area runoff diversion along the perimeter of the mine site was adequately maintained to control the design runoff event. However, there was still a small amount of material which had been deposited in the diversion that should be cleaned out. I pointed this out to Mr. Spillman at the time of the inspection.

Fugitive Dust

The only apparent fugitive dust problem area on the mine site is in the coal loading yard. The problem is with dust accumulated on the yard surface itself, not with the loading facilities (tipple). I suggested to Mr. Spillman that they water the loading yard area a couple of times a day using either a water truck, rain bird sprinkler system, or the equivalent.

re

cc: Dave Spillman, Soldier Creek Coal
Donna Griffin, OSM,
Joe Helfrich, DOGM

Statistics:

Vehicle : EX 49611, 491 miles
Per Diem: 1 person X 1 day 6 hours = $53.00
Grant: A&E

0290Q 1-2

August 15, 1985

RECEIVED
AUG 22 1985
SC3

TO: Coal File, Inspection and Enforcement Folder

FROM: David Lof, Mining Field Specialist

RE: Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder #7, Carbon County, Utah

DATE:	July 26, 1985
TIME:	11:00 a. m. - 3:00 p.m.
WEATHER:	Hot and mostly clear
COMPANY OFFICIAL:	Tom Paluso
STATE OFFICIAL:	David Lof
ENFORCEMENT ACTION:	None

Compliance With Permanent Performance Standards

UMC 771 et al Permits

The following permits were reviewed in the operator's mine office:

1. The operator's permit approval from OSM dated May 31, 1985. There were no special conditions attached to the permit.

2. The Division's final permit approval letter dated June 3, 1985. There was one stipulation attached to the Division's approval letter that required that the operator post additional surety with the Division to ensure reclamation if OSM's bond estimate was not consistent with Division policy and was insufficient.

UMC 817.11 Signs and Markers

Mine identification signs were posted along the county road near the mine site and at the sewage lagoon site as required.

Perimeter markers were properly posted around the permitted disturbed area boundary.

UMC 817.21-.23 Topsoil

The operator does have some topsoil stored for redistribution upon final reclamation. This material is located on the southern slope of the material storage pad south of the sediment pond. It is well vegetated and a sign is posted on the stockpile identifying it as topsoil.

UMC 817.41-.51 Hydrologic Balance

In general, the runoff controls for the mine site appeared to be adequately maintained.

Sediment Pond Inlet

The operator had completed the construction of the new sediment pond inlet which was approved by the Division on August 7, 1984 as part of a runoff control modification plan. The inlet appeared to be in accordance with design specifications and the operator's contractor had done a very good job.

Binwall

The operator had completed the construction of drainage controls for the binwall which were approved by the Division on August 7, 1984. These drainage controls also appeared to be in compliance with design specifications and the contractor had done a very good job of implementing the plans.

Sediment Pond, NOV N85-4-15-1

This violation was issued on May 2, 1985 for the operator's failure to mine in accordance with their approved interim permit, and for failure to construct and maintain the sediment pond embankment to insure proper embankment top width and sideslope gradient. The operator was required to submit complete plans to the Division to bring the sediment pond into compliance with UMC 817.46 (l) and (m) by May 20, 1985 and to complete the implementation of the plans within 30 days of Division approval.

On May 20, 1985, the Division received information from the operator regarding the sediment pond embankment. This information was reviewed and a deficiency letter sent on May 30, 1985. The letter required that the additional information requested be submitted to the Division on or before July 1, 1985.

The operator submitted the additional information requested on July 1, 1985. The Division Technical staff is presently reviewing the submittal.

Pond Inspections

The operator had both their sediment pond and sewage lagoon dams and embankments certified by a qualified registered professional engineer as required by UMC 817.49 (h). The certifications were dated June 27, 1985 and both were stamped and signed by Tom Paluso who is a Registered Professional Engineer. The report on the sewage lagoon indicated that there were no problems, however, some minor settling had occurred between the two cells.

The sediment pond certification states that the initial storage volume of the sediment pond was 3.4 acre feet and that the existing storage volume is 3.0 acre feet. The certification also makes note of erosion on the stream side of the embankment and the plans which were submitted to the Division for the correction of this problem (N85-4-15-1).

UMC 817.52 Surface and Ground Water Monitoring

The operator is currently operating under NPDES permit UT-0023680 issued by EPA on October 29, 1982. This permit is for the mine water discharge and sediment pond overflow into Soldier Creek. The permit is scheduled to expire on September 30, 1987. The operator had surface water monitoring data available through June 4, 1985. there were no apparent problems with the data which were reviewed.

According to Mr. Paluso the operator has started to sample in accordance with their new sampling regime as approved in their permit. However, as of the time of the inspection, they had not received any of their sample results from the laboratory.

UMC 817.71-.73 Disposal of Underground Development Waste and Excess Spoil and Nonacid and Nontoxic Forming Coal Processing Waste.

According to Mr. Paluso the operator is currently disposing of all their underground development waste underground in the cross cuts within the stream crossing buffer area. According to the Technical Analysis for the mine plan, dated December 1984, the operator has proposed to permit a waste rock disposal site to accomodate the disposal of waste rock material. It is my understanding at this time that the operator has submitted all of the information for the permitting of the site, however, it is not covered by a reclamation bond, therefore it is not permitted.

UMC 817.95 Air Resources Protection

The operator has a small fugitive dust problem in their main storage area, north of their shop. This was discussed with the operator during a previous inspection. At the time of this inspection Mr. Paluso informed me that they had used calcium chloride on the area once, but it had only lasted about one week. He explained that they were considering regrading the yard area and using magnesium chloride on the surface instead of calcium chloride because it lasts longer.

UMC 817.121-.126 Subsidence Control

According to the operator's permit, they have committed to continue monitoring their subsidence surface monuments, which they established in 1980, on an annual basis. The monitoring will be performed using aerial photography for points over the mine workings and ground surveys for points along Soldier Creek.

UMC 817.181 Support Facilities and Utility Installations

I reviewed the approved plans for the operators sewage lagoons in their mine office and then went to the lagoon site to check the compliance of the as-built lagoons with the approved plans. The

as-built lagoons matched the approved designs quite well with a few minor exceptions. The only work needed to be done at the lagoon site is the maintenance of the ditch along the west side of the access road to the sewage lagoons. Mr. Paluso committed to having this completed prior to my next inspection.

re

cc: Donna Griffin, OSM
Tom Paluso, Soldier Creek Coal Co.
Joe Helfrich, DOGM

Statistics:

Vehicle: EX49611 - 370 miles
Per Diem: 1 person X 1 day 7 hours = $56.07
Grant: A&E
0326Q-15-18

September 19, 1985

TO: Coal File, Inspection and Enforcement Folder

FROM: David Lof, Mining Field Specialist

RE: Soldier Creek Coal Company, Soldier Canyon Mine, ACT/007/018, Folder #7, Carbon County, Utah

On August 30, 1985 a partial inspection was conducted at the above mentioned mine site.

Sediment Pond, NOV N85-4-15-1

On September 3, 1985 the Division sent the operator a deficiency letter regarding plans submitted on July 1, 1985 for abatement of the NOV. The letter required that additional information on riprap design be submitted to the Division by September 20, 1985.

Sewage Lgoon Site

During my July 26, 1985 complete inspection, I asked the operator to maintain the ditch along the west side of the access road to the sewage lagoons prior to my next inspection. At the time of this inspection, I found that the operator had made a poor attempt at maintaining the ditch. I informed Dave Spillman of Soldier Creek that if the ditch did not meet design specifications in two weeks that a violation would be issued.

re

cc: Donna Griffin, OSM
Dave Spillman, Soldier Creek
Joe Helfrich, DOGM
Ken May, DOGM

Statistics:

Vehicle: EX 49611 - - 609 miles
Per Diem: 1 person X 2 days, 15 hours = $123.14
Grant: A&E

0348Q-3

SEP 23 1985

Dave Spillman

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

OCT 1 3 1985

INSPECTION REPORT

Permittee and/or Operators Name: Soldier Cx. Coal Co.
Business Address: P.O. Box I Price, Ut 84501
Mine Name: Soldier Canyon Mine Permit Number: ACT/007/018
Type of Mining Activity: Underground X Surface ___ Other ___
County: Carbon
Company Official(s): Dave Spillman
State Official(s): David Lof & Holland Shepherd
Inspection Date and Time: 9/11/85
Partial: X Complete: ___ Date of Last Inspection: 8/30/85
Weather Conditions: Raining and Cool
Acreage: Permitted ___ Disturbed ___ Regraded ___ Seeded ___ Bonded ___
Enforcement Action: None

COMPLIANCE WITH PERMITS AND PERFORMANCE STANDARDS

	YES	NO	N/A	Comments
1. PERMITS	( )	( )	( )	( )
2. SIGNS AND MARKERS	( )	( )	( )	( )
3. TOPSOIL	( )	( )	( )	( )
4. HYDROLOGIC BALANCE:				
a. STREAM CHANNEL DIVERSIONS	( )	( )	( )	( )
b. DIVERSION'S	(X)	( )	( )	( )
c. SEDIMENT PONDS AND IMPOUNDMENTS	(X)	( )	( )	(X)
d. OTHER SEDIMENT CONTROL MEASURES	(X)	( )	( )	( )
e. SURFACE AND GROUNDWATER MONITORING	( )	( )	( )	( )
f. EFFLUENT LIMITATIONS	( )	( )	( )	( )
5. EXPLOSIVES	( )	( )	( )	( )
6. DISPOSAL OF DEVELOPMENT WASTE AND SPOIL	( )	( )	( )	( )
7. COAL PROCESSING WASTE	( )	( )	( )	( )
8. NONCOAL WASTE	( )	( )	( )	( )
9. PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL VALUES	( )	( )	( )	( )
10. SLIDES AND OTHER DAMAGE	( )	( )	( )	( )
11. CONTEMPORANEOUS RECLAMATION	( )	( )	( )	( )
12. BACKFILLING AND GRADING	( )	( )	( )	( )
13. REVEGETATION	( )	( )	( )	( )
14. SUBSIDENCE CONTROL	( )	( )	( )	( )
15. CESSATION OF OPERATIONS	( )	( )	( )	( )
16. ROADS				
a. CONSTRUCTION	( )	( )	( )	( )
b. DRAINAGE CONTROLS	( )	( )	( )	( )
d. SURFACING	( )	( )	( )	( )
e. MAINTENANCE	( )	( )	( )	( )
17. OTHER TRANSPORTATION FACILITIES	( )	( )	( )	( )
18. SUPPORT FACILITIES AND UTILITY INSTALLATIONS	(X)	( )	( )	(X)

INSPECTION REPORT
(Page 2)

Permit Number: ACT/007/018 Date of Inspection: 9/11/85

COMMENTS

(Comments are Numbered to Correspond with Topics Listed Above)

4.c. NOV N85-4-15-1 — THE DIVISION SENT THE OPERATOR A DEFICIENCY LETTER ON 9/3/85 REQUIRING ADDITIONAL INFO. ON RIPRAP DESIGN TO BE SUBMITTED BY 9/20/85. INFO. WAS REC'D BY DIVISION ON 9/20/85, TECHNICAL STAFF IS REVIEWING.

18. THE OPERATOR HAS MAINTAINED THE DIVERSION DITCH ON THE WEST SIDE OF THE ROAD TO THE SEWAGE LAGOONS AND INSTALLED A NEW CROSS CULVERT ALONG THE ROAD AS REQUESTED DURING LAST INSPECTION.

GENERAL COMMENTS

— STARTED UP THE "NEW" FAN ALONG THE COUNTY ROAD IN MID-AUGUST DUE TO METHANE PROBLEM IN 3RD NORTH MINE SECTION
— NO MINE WATER DISCHARGE AT EITHER DISCHARGE PT.
— ALL DISTURBED AREA RUNOFF CONTROLLED
— NEWLY CONSTRUCTED CONTROLS ON THE BIN WALL WERE WORKING AS PER DESIGN

Copy of this Report:
Mailed to: DONNA GRIFFIN, OSM AND DAVID SPILLMAN, SOLDIER CK. COAL CO.
Given to: JOE HELFRICH, DOGM AND KEN WAY, DOGM

Inspectors Signature and Number: David Lof #4 10/10/85

0365Q 1-2

Dear Spelman

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

RECEIVED NOV 1 1985 DGM

INSPECTION REPORT

Permittee and/or Operators Name: Soldier Creek Coal Co
Business Address: P.O. Box I Price, Ut 84501
Mine Name: Soldier Canyon Mine Permit Number: ACT/007/018
Type of Mining Activity: Underground X Surface ___ Other ___
County: Carbon
Company Official(s): Tom Pollico
State Official(s): David Lee
Inspection Date and Time: Oct 31, 1985 10:50 – 2:00
Partial: ___ Complete: X Date of Last Inspection: 9/11/85
Weather Conditions: Clear & mild
Acreage: Permitted ___ Disturbed ___ Regraded ___ Seeded ___ Bonded ___
Enforcement Action: ___

COMPLIANCE WITH PERMITS AND PERFORMANCE STANDARDS

	YES	NO	N/A	Comments
1. PERMITS	X			
. SIGNS AND MARKERS	X			
3. TOPSOIL	X			
4. HYDROLOGIC BALANCE:				
a. STREAM CHANNEL DIVERSIONS	X			
b. DIVERSION'S	X			
c. SEDIMENT PONDS AND IMPOUNDMENTS	X			X
d. OTHER SEDIMENT CONTROL MEASURES	X			
e. SURFACE AND GROUNDWATER MONITORING				X
f. EFFLUENT LIMITATIONS	X			
5. EXPLOSIVES			X	
6. DISPOSAL OF DEVELOPMENT WASTE AND SPOIL			X	
7. COAL PROCESSING WASTE			X	
8. NONCOAL WASTE	X			
9. PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL VALUES	X			
10. SLIDES AND OTHER DAMAGE			X	
11. CONTEMPORANEOUS RECLAMATION			X	
12. BACKFILLING AND GRADING			X	
13. REVEGETATION			X	
14. SUBSIDENCE CONTROL	X			
15. CESSATION OF OPERATIONS			X	
16. ROADS				
a. CONSTRUCTION	X			
b. DRAINAGE CONTROLS	X			
d. SURFACING	X			
e. MAINTENANCE	X			
17. OTHER TRANSPORTATION FACILITIES			X	
18. SUPPORT FACILITIES AND UTILITY INSTALLATIONS	X			

INSPECTION REPORT
(Page 2)

Permit Number: ACT/007/018 Date of Inspection: 10/31/85

COMMENTS

(Comments are Numbered to Correspond with Topics Listed Above)

4.c. SEDIMENT PONDS AND IMPOUNDMENTS

NOV N85-4-15-1 — THE DIVISION ~~IS~~ IS STILL IN THE PROCESS OF REVIEWING THE OPERATOR'S 9/30/85 SUBMITAL RE: ABATEMENT OF THE VIOLATION. DURING MY INSPECTION I TOLD MR. PALUSO OF SEVERAL CONCERNS DIVISION HYDROLOGIST DAVE HOOPER TOLD ME HE HAD WITH THE PLAN.

1. MANNING'S n VALUE GIVEN IN THE PLAN WAS FELT TO BE TOO LOW
2. THE OPERATOR NEEDS TO INCORPORATE A FILTER BLANKET INTO THE DESIGN. MR. HOOPER SUGGESTED THAT THEY CONSIDER A FABRIC FILTER BLANKET
3. THE OPERATOR NEEDS TO REFERENCE THE HYDRAULIC SLOPE OF THE STREAM
4. ACCORDDING TO MR. HOOPER THERE IS A DISCREPANCY IN THE CHANNEL WIDTH AS SHOWN IN FIGURES 2 & 3
5. THE PLANS NEED A PE CERTIFICATION
6. THE LONGITUDINAL EXTENT OF THE RIPRAP NEEDS TO BE STATED IN THE PLAN
7. THERE IS A QUESTION RE: THE SOURCE OF THE RIPRAP TO BE USED

THESE CONCERNS WERE DISCUSSED WITH MR. PALUSO SO THAT THE OPERATOR CAN START TO ADDRESS THEM PRIOR TO ACTUAL RECEIPT OF A DEFICIENCY LETTER

4e. SURFACE AND GROUNDWATER MONITORING

AT THE TIME OF MY INSPECTION ALL OF THE OPERATORS FIELD MEASUREMENT INFORMATION (pH, CONDUCTIVITY, DO, WATER TEMP. AND WATER QUANTITY) WAS NOT AVAILABLE FOR INSPECTION PARTLY DUE TO POOR RECORD KEEPING PRACTICES AND PARTLY DUE TO EQUIPMENT MALFUNCTION. THE OPERATOR WAS ASKED TO SUBMIT COPIES OF ALL THEIR SURFACE + GROUNDWATER MONITORING DATA (BOTH LAB + FIELD) FOR THE PERIOD JULY 1985 THROUGH OCTOBER 1985 TO MYSELF BY 11/8/85 SO THAT I CAN ACCURATELY DETERMINE THE PRESENT COMPLIANCE STATUS OF THEIR WATER MONITORING PROGRAM. A FOLLOWUP MEMO WILL BE WRITTEN TO DOCUMENT THE STATUS OF THE OPERATORS PROGRAM.

Copy of this Report:
Mailed to: DAVE SPILLMAN, SNIDER CREEK COAL CO. AND DONNA GRIFFIN OSM
Given to: KEN MAY, DOGM & JOE HEFRICH, DOGM AND BART KALE, DOGM

Inspectors Signature and Number: David Lof #4 Nov. 6, 1985

0365Q 1-2

Dave Spillman

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

RECEIVED
DEC 03 1985
DIVISION OF OIL, GAS & MINING

INSPECTION REPORT

Permittee and/or Operators Name: Soldier Creek Coal Company
Business Address: P.O. Box 1
Mine Name: Soldier Canyon Mine Permit Number: ACT/007/018
Type of Mining Activity: Underground ✓ Surface ___ Other ___
County: Carbon
Company Official(s): Dave Spillman
State Official(s): Holland Shepherd, Dave Duce
Inspection Date and Time: 11-13-85 9:00 - 11:00 am
Partial: ✓ Complete: ___ Date of Last Inspection: 10-31-85
Weather Conditions: cold - snowing
Acreage: Permitted ___ Disturbed ___ Regraded ___ Seeded ___ Bonded ___
Enforcement Action: none

COMPLIANCE WITH PERMITS AND PERFORMANCE STANDARDS

	YES	NO	N/A	Comments
1. PERMITS			✓	
2. SIGNS AND MARKERS	✓			
3. TOPSOIL			✓	
4. HYDROLOGIC BALANCE:				
a. STREAM CHANNEL DIVERSIONS			✓	
b. DIVERSION'S				
c. SEDIMENT PONDS AND IMPOUNDMENTS	✓			✓
d. OTHER SEDIMENT CONTROL MEASURES	✓			✓
e. SURFACE AND GROUNDWATER MONITORING			✓	
f. EFFLUENT LIMITATIONS			✓	
5. EXPLOSIVES			✓	
6. DISPOSAL OF DEVELOPMENT WASTE AND SPOIL	✓			
7. COAL PROCESSING WASTE	✓			
8. NONCOAL WASTE			✓	
9. PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL VALUES			✓	
10. SLIDES AND OTHER DAMAGE			✓	
11. CONTEMPORANEOUS RECLAMATION			✓	
12. BACKFILLING AND GRADING			✓	
13. REVEGETATION	✓			
14. SUBSIDENCE CONTROL			✓	
15. CESSATION OF OPERATIONS			✓	
16. ROADS				
a. CONSTRUCTION			✓	
b. DRAINAGE CONTROLS			✓	
d. SURFACING			✓	
e. MAINTENANCE			✓	
17. OTHER TRANSPORTATION FACILITIES			✓	
18. SUPPORT FACILITIES AND UTILITY INSTALLATIONS			✓	

INSPECTION REPORT

Permit Number: ACT/007/018 Date of Inspection: 11-13-85

COMMENTS

(Comments are Numbered to Correspond with Topics Listed Above)

4.c. The Division's previous inspector, Dave Hof, issued an NOV (85-4-15-1) regarding construction of Soldier Creek's sediment pond. The mine's plan for abatement is currently under technical review by DOGM. The 90 day deadline for abatement has expired as a result of administrative delay, according to Mr. Hof.

4.d. The inspectors and operator observed ice build up at the base opening of the outlet pan, located directly above Soldier Creek. Discussion was made regarding the potential for uncontrolled sediment loading into the natural drainage; if large quantities of water & dust condense out during the winter months turning to ice, then later melting and running into the creek. The inspector warned the operator that if the situation developed to the degree that compliance standards where no longer being met, a violation would be issued.

C / of this Report:
Mailed to: Dave Spillman, Donna Griffin
Given to: Bart Kale

Inspectors Signature and Number: Wm Shepherd #7

0365Q 1-2

Dave Spillman

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

RECEIVED DEC 18 1985 DOGM

INSPECTION REPORT

Permittee and/or Operators Name: Soldier Creek Coal Company
Business Address: P.O. Box I Price UT 84501
Mine Name: Soldier Canyon Mine Permit Number: ACT/007/018
Type of Mining Activity: Underground X Surface ___ Other ___
County: Carbon
Company Official(s): Dave Spillman
State Official(s): Barton Kale
Inspection Date and Time: Dec. 3, 1985 11:30 - 12:45
Partial: ✓ Complete: ___ Date of Last Inspection: 11-13-85
Weather Conditions: Snowing lightly
Acreage: Permitted ___ Disturbed ___ Regraded ___ Seeded ___ Bonded ___
Enforcement Action: None

COMPLIANCE WITH PERMITS AND PERFORMANCE STANDARDS

	YES	NO	N/A	Comments
1. PERMITS				
2. SIGNS AND MARKERS				
3. TOPSOIL				
4. HYDROLOGIC BALANCE:				
a. STREAM CHANNEL DIVERSIONS	✓			
b. DIVERSION'S	✓			
c. SEDIMENT PONDS AND IMPOUNDMENTS	✓			
d. OTHER SEDIMENT CONTROL MEASURES	✓			✓
e. SURFACE AND GROUNDWATER MONITORING	✓			
f. EFFLUENT LIMITATIONS	✓			
5. EXPLOSIVES				
6. DISPOSAL OF DEVELOPMENT WASTE AND SPOIL				
7. COAL PROCESSING WASTE				
8. NONCOAL WASTE	✓			
9. PROTECTION OF FISH, WILDLIFE AND RELATED ENVIRONMENTAL VALUES				
10. SLIDES AND OTHER DAMAGE				
11. CONTEMPORANEOUS RECLAMATION				
12. BACKFILLING AND GRADING				
13. REVEGETATION				
14. SUBSIDENCE CONTROL				
15. CESSATION OF OPERATIONS				
16. ROADS				
a. CONSTRUCTION				
b. DRAINAGE CONTROLS				
d. SURFACING				
e. MAINTENANCE				
17. OTHER TRANSPORTATION FACILITIES				
18. SUPPORT FACILITIES AND UTILITY INSTALLATIONS				

INSPECTION REPORT
(Page 2)

Permit Number: ACT/007/018 Date of Inspection: Dec 3, 1985

COMMENTS

(Comments are Numbered to Correspond with Topics Listed Above)

4D) A partial inspection was conducted at the above mentioned mine site. A recent snow storm left a substantial amount of snow on the ground and accounted for limited visibility.

The new ventilation exhaust fan was inspected due to a past concern that condensation from warm air leaving the vent could cause a flow of water out of the fan. A small trickle of water was noted and frozen below. The operator was informed that this area is now a concern to be contended or and it was requested that ~~[illegible]~~ sediment controls be in place below the fan vent before any melting took place and frozen ~~[illegible]~~ water laden with contamination melted off site. The operator was informed that the inspector would look at installed controls during the next inspection.

The inspector watch snow removal operations and no problems were noted.

Copy of this Report:
Mailed to: Donna Griffin, Dave Spellman
Given to: Joe Helfrich

Inspectors Signature and Number: Barton D. Gale #6 Dec 9, 1985

0365Q 1-2

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

QUARTERLY POND INSPECTION

Pond Being Inspected: Sewage Lagoon

Date of Inspection: 3-20-85

Person(s) Making Inspection: David Spillman

Any Structural Weakness, Erosion and Other Hazardous Conditions Noted: The sewage lagoon embankment appeared to be in satisfactory structural condition. No problems were noted during inspection.

Any Routine Maintenance Required: None

Comments: The water level was approximately 2 feet below design maximum. Also level should be the maximum level for this year since the ice covering is now mostly melted, allowing for evaporation to begin.

APPROVAL: _____ DATE: _____

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

QUARTERLY POND INSPECTION

Pond Being Inspected: Surface Facility Sedimentation Pond

Date of Inspection: 3-20-85

Person(s) Making Inspection: David Spillman

Any Structural Weakness, Erosion and Other Hazardous Conditions Noted: The sediment pond embankment appeared to be in satisfactory structural condition. Only a minimal amount of water was impounded at the time of inspection.

Any Routine Maintenance Required: The annual cleaning of garbage and debris deposited during snow removal operations will be required within the next couple of months depending on weather conditions.

Comments:

APPROVAL: DATE:

ANNUAL POND CERTIFICATION REPORT

Soldier Creek Coal Company
Soldier Canyon Mine
P.O. Box I
Price, Utah 84501
ACT/007/018

Date: June 27, 1985

Pond Identification: Surface Facility Sedimentation Pond

Initial Storage Capacity as Constructed: 3.4 acre-feet

Existing Storage Capacity: approximately 3.00 acre-feet

Existing and Required Monitoring Procedures and Instrumentation:
No discharge for the previous year

Existing Stability and Structural Condition of the Dam or Embankment:
Some erosion has occurred on the stream side of the embankment. This has not affected stability yet.

Comments: All embankments are constructed of noncombustible material.
Plans to correct erosions problems on the stream side of the embankment have been submitted to the Division for final approval.

Registered Professional Engineer
No. 4028
J. THOMAS PALUSO
State of Utah

J.T. Paluso
Chief Engineer

ANNUAL POND CERTIFICATION REPORT

Soldier Creek Coal Company
Soldier Canyon Mine
P.O. Box I
Price, Utah 84501
ACT/007/018

ate: June 27, 1985

ond Identification: Sewage lagoon

iitial Storage Capacity as Constructed: 2.1 acre-feet

xisting Storage Capacity: 2.1 acre-feet

xisting and Required Monitoring Procedures and Instrumentation:
lo discharge for the previous year.

xisting Stability and Structural Condition of the Dam or Embankment:
M(settling has occurred between cells. This will not have an affect on the operation of the lagoon.

omments: All embankments are constructed of noncombustible material.
Weeds along the top of the lagoon were sprayed.

Registered Professional Engineer
No. 4028
J. THOMAS PALUSO
State of Utah

T 4028

J.T. Paluso
Chief Engineer

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

QUARTERLY POND INSPECTION

Pond Being Inspected: Sewage Lagoon

Date of Inspection: September 25, 1985

Person(s) Making Inspection: David Spillman

Any Structural Weakness, Erosion and Other Hazardous Conditions Noted: The sewage lagoon embankment appeared to be in good structural condition. The water level was well below design maximum.

Any Routine Maintenance Required: On September 9, 1985, maintenance work was implemented on the borrow ditch and associated culvert, located on the west side of the access immediately adjacent to the lagoon facility

Comments:

APPROVAL: DATE:

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

QUARTERLY POND INSPECTION

Pond Being Inspected: Surface Facility Sedimentation Pond

Date of Inspection: September 25, 1985

Person(s) Making Inspection: David Spillman

Any Structural Weakness, Erosion and Other Hazardous Conditions Noted: The sediment pond embankment appeared to be in satisfactory structural condition. There was no noticeable increase of embankment erosion caused by Soldier Creek. Reinforcement of the embankment has been proposed as abatement to DOGM's NOV N85-4-15-1. Final abatement plans were submitted on 9-16-85.

Any Routine Maintenance Required:

Comments: The drainage ditch and culvert installed in June for erosion control appears to be working well.

APPROVAL: DATE:

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box 1
Price, Utah 84501

QUARTERLY POND INSPECTION

Pond Being Inspected: Surface Facility Sedimentation Pond

Date of Inspection: December 30, 1985

Person(s) Making Inspection: David Spillman

Any Structural Weakness, Erosion and Other Hazardous Conditions Noted: The sediment pond embankment appeared to be in satisfactory structural condition. There has been no noticeable change in the narrow embankment for which NOV N85-4-15-1 was issued. Final abatement of this violation remains unresolved at this time.

Any Routine Maintenance Required: None

Comments: Water level was low. All inlet and outlet structures appeared to be in excellent condition.

APPROVAL: _____ DATE: _____

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box 1
Price, Utah 84501

QUARTERLY POND INSPECTION

Pond Being Inspected: Sewage Lagoon

Date of Inspection: December 21, 1985

Person(s) Making Inspection: David Spillman

Any Structural Weakness, Erosion and Other Hazardous Conditions Noted: at the time of this inspection, the sewage lagoon embankment appeared to be in excellent structural condition. There were no signs of deterioration or excessive erosion in and around the sewage lagoon.

Any Routine Maintenance Required: None

Comments: The southern most cell's water level was approx. 8" higher than the northern cell. Also there appeared to be adequate volumes remaining to contain the expected inflows of waste water this winter season.

APPROVAL: _____ DATE: _____

Appendix 3

1. Copies of all laboratory analyses
2. Drawing D186
3. Drawing D198
4. Copy of the approval letter for and additional discharge point 003
5. Copy of the letter concerning December's non-compliance sample of point 003
6. Copy of Banning's NPDES permit approval letter
7. Copy of the approval letters to drop Spring 535 from our monitoring program

Date: February 14, 1985

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 1/28/85
Date Received: 2/4/85
Your P.O. No: 28866

Attn: Mr. Christopher P. Allen

Sample I.D. 18-1 Mine Discharge

Lab No.: 85-0745-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	629	pH (units)	8.1
Alkalinity (as $CaCO_3$)	630	Solids, Dissolved	810
Iron, Total	0.36	Solids, Suspended	8
Oil & Grease	<1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: February 14, 1985

BOOKCLIFFS COMMERCIAL LABORATORIES

WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company

Address: P.O. Box I
Price, Utah 84501

Sample Date: 1/25/85

Date Received: 2/4/85

Your P.O. No: 28866

Attn: Mr. Christopher P. Allen

Sample I.D. 18-2 ~~Mine Discharge~~ DDS 2-18-85

Lab No.: 85-0746-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	437	pH (units)	8.1
Alkalinity (as $CaCO_3$)	434	Solids, Dissolved	620
Iron, Total	0.42	Solids, Suspended	34
Oil & Grease	<1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: February 14, 1985

BOOKCLIFFS COMMERCIAL LABORATORIES

WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company

Address: P.O. Box I
Price, Utah 84501

Sample Date: 1/25/85

Date Received: 2/4/85

Your P.O. No: 28866

Attn: Mr. Christopher P. Allen

Sample I.D. E-22

Lab No.: 85-0747-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	372	pH (units)	8.1
Alkalinity (as $CaCO_3$)	372	Solids, Dissolved	485
Iron, Total	0.98	Solids, Suspended	44
Oil & Grease	<1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: March 14, 1985

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 2/26/85
Sample Time: 1:30
Date Received: 3/1/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 28866

Sample I.D. 18-1

Lab No.: 85-1205-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Oil & Grease	<1
Alkalinity (as $CaCO_3$)	624	pH (units)	8.2
Iron, Total	0.34	Solids, Dissolved	860
Manganese, Total	0.02	Solids, Suspended	<4

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: March 14, 1985

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 2/26/85
Sample Time: 1:00
Date Received: 3/1/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 28866

Sample I.D. 18-2

Lab No.: 85-1206-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.2
Alkalinity (as $CaCO_3$)	453	Solids, Dissolved	640
Iron, Total	1.20	Solids, Suspended	168
Oil & Grease	<1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: March 14, 1985

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 2/26/85
Sample Time: 12:40
Date Received: 3/1/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 28866

Sample I.D. E-22

Lab No.: 85-1207-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.3
Alkalinity (as $CaCO_3$)	389	Solids, Dissolved	495
Iron, Total	1.31	Solids, Suspended	112
Oil & Grease	<1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 3/29/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 3/14/85
Sample Time: 02:00
Date Received: 3/20/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29003

Sample I.D. 18-1 Mine Discharge

Lab No.: 85-1650-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Oil & Grease	<1
Alkalinity (as $CaCO_3$)	630	pH (units)	8.3
Iron, Total	0.41	Solids, Dissolved	795
Manganese, Total	<0.02	Solids, Suspended	8

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 3/29/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 3/15/85
Sample Time: 02:40
Date Received: 3/20/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29003

Sample I.D. 18-2

Lab No.: 85-1651-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.3
Alkalinity (as $CaCO_3$)	316	Solids, Dissolved	445
Iron, Total	7.70	Solids, Suspended	416
Oil & Grease	<1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 3/29/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 3/15/85
Sample Time: 01:50
Date Received: 3/20/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29003

Sample I.D. E-22

Lab No.: 85-1652-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.3
Alkalinity (as $CaCO_3$)	333	Solids, Dissolved	450
Iron, Total	20.1	Solids, Suspended	1,470
Oil & Grease	<1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: June 3, 1985

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 4/26/85
Sample Time: 11:00
Date Received: 5/3/85

Attn: Mr. Christopher P. Allen

Sample I.D.	Lab No.	Manganese, Total mg/l
18-1 Mine Discharge	85-2948-W	0.03

* Parameter requested 5/29/85

Ralph V. Poulsen

Ralph V. Poulsen, Director

BOOKCLIFFS
COMMERCIAL LABORATORIES

Date: 5/17/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 4/30/85
Sample Time: 02:40
Date Received: 5/03/85

Attn: Mr. Christopher P. Allen

Sample I.D. E-22

Lab No.: 85-2947-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.1
Alkalinity (as $CaCO_3$)	266	Solids, Dissolved	364
Iron, Total	3.31	Solids, Suspended	298
Oil & Grease	-1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 5/17/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 4/26/85
Sample Time: 11:00
Date Received: 5/03/85

Attn: Mr. Christopher P. Allen

Sample I.D. 18-1 Mine Discharge

Lab No.: 85-2948-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.1
Alkalinity (as $CaCO_3$)	581	Solids, Dissolved	948
Iron, Total	0.18	Solids, Suspended	-4
Oil & Grease	1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 5/17/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 4/30/85
Sample Time: None
Date Received: 5/03/85

Attn: Mr. Christopher P. Allen

Sample I.D. 18-2

Lab No.: 85-2949-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.1
Alkalinity (as $CaCO_3$)	562	Solids, Dissolved	386
Iron, Total	2.79	Solids, Suspended	226
Oil & Grease	-1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 6/27/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 6/03/85
Sample Time: 02:30
Date Received: 6/11/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29369

Sample I.D. E-22

Lab No.: 85-4087-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	7.9
Alkalinity (as $CaCO_3$)	274	Solids, Dissolved	338
Iron, Total	0.50	Solids, Suspended	66
Oil & Grease	*		

* No Sample Received

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 6/27/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 6/04/85
Sample Time: 01:30
Date Received: 6/11/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29369

Sample I.D. 18-2

Lab No.: 85-4088-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.0
Alkalinity (as $CaCO_3$)	302	Solids, Dissolved	390
Iron, Total	0.23	Solids, Suspended	42
Oil & Grease	1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 6/27/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 5/08/85
Date Received: 6/11/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29369

Sample I.D. Banning Discharge

Lab No.: 85-4089-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	8.0
Alkalinity (as $CaCO_3$)	324	Solids, Dissolved	2,670
Iron, Total	0.02	Solids, Suspended	6
Manganese, Total	-0.01		
Oil & Grease	-1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 6/27/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 5/28/85
Sample Time: 01:45
Date Received: 6/11/95

Attn: Mr. Christopher P. Allen

Your P.O. No: 29369

Sample I.D. 18-1 Mine Discharge

Lab No.: 85-4090-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	pH (units)	7.9
Alkalinity (as $CaCO_3$)	620	Solids, Dissolved	800
Iron, Total	0.11	Solids, Suspended	4
Manganese, Total	0.01		
Oil & Grease	-1		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 6/27/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 6/05/85
Date Received: 6/11/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29369

Sample I.D. Ivie Creek-West

Lab No.: 85-4091-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Calcium	230	Manganese	-0.01
Carbonate (as $CaCO_3$)	0	Potassium	9
Chloride	110	Sodium	292
Hardness (as $CaCO_3$)	1,670	Solids, Dissolved	2,840
Iron	-0.02	Solids, Suspended	50
Magnesium	265	Sulfate	1,750

NOTE: Metals are Dissolved

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 6/27/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 6/05/85
Sample Time: 12:30
Date Received: 6/11/85

Attn: Mr. Christopher P. Allen

Your P.O. No: 29369

Sample I.D. Ivie Creek-East

Lab No.: 85-4092-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Calcium	215	Manganese	-0.01
Carbonate (as $CaCO_3$)	0	Potassium	8
Chloride	104	Sodium	302
Hardness (as $CaCO_3$)	1,550	Solids, Dissolved	2,770
Iron	-0.02	Solids, Suspended	134
Magnesium	245	Sulfate	1,670

NOTE: Metals are Dissolved

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 7/19/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 7/01/85
Date Received: 7/05/85
Sample Time: 02:00

Attn: Mr. Christopher P. Allen
Sample I.D.: G-88

Your P.O. No: 29369
Lab No.: 85-4677-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Magnesium	38
Alkalinity (as $CaCO_3$)	274	Manganese	-0.01
Aluminum	0.06	Mercury	-0.0002
Arsenic	0.001	Molybdenum	-0.05
Barium	0.10	Nickel	-0.02
Bicarbonate (as $CaCO_3$)	274	Nitrogen, Ammonia	-0.02
Boron	0.07	Nitrogen, Nitrate	-0.02
Cadmium	-0.005	Nitrogen, Nitrite	-0.02
Calcium	36	Oil & Grease	-1
Carbonate (as $CaCO_3$)	0	Phosphorus, Ortho	-0.02
Chloride	-1	Potassium	1
Chromium	-0.01	Selenium	0.004
Copper	-0.02	Sodium	34
Fluoride	0.48	Solids, Dissolved	292
Hardness (as $CaCO_3$)	247	Sulfate	23
Iron, Dissolved	-0.02	Sulfide as S	2
Iron, Total	0.14	Zinc	2.07
Lead	0.05	Cations (meq/l)	6.44
		Anions (meq/l)	5.96
		Cat./Anion Balance(%)	3.83

Note: Metals are Total unless noted

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 7/19/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 6/27/85
Date Received: 7/05/85
Sample Time: 01:30

Attn: Mr. Christopher P. Allen
Sample I.D.: G-89

Your P.O. No: 29369
Lab No.: 85-4678-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Magnesium	32
Alkalinity (as $CaCO_3$)	458	Manganese	0.01
Aluminum	0.05	Mercury	0.0024 *
Arsenic	-0.001	Molybdenum	-0.05
Barium	0.36	Nickel	-0.02
Bicarbonate (as $CaCO_3$)	458	Nitrogen, Ammonia	0.34
Boron	0.14	Nitrogen, Nitrate	-0.02
Cadmium	-0.005	Nitrogen, Nitrite	-0.02
Calcium	21	Oil & Grease	11 **
Carbonate (as $CaCO_3$)	0	Phosphorus, Ortho	-0.02
Chloride	7	Potassium	3
Chromium	-0.01	Selenium	-0.002
Copper	-0.02	Sodium	179
Fluoride	0.30	Solids, Dissolved	600
Hardness (as $CaCO_3$)	184	Sulfate	72
Iron, Dissolved	-0.02	Sulfide as S	13
Iron, Total	-0.02	Zinc	104
Lead	0.05	Cations (meq/l)	11.6
		Anions (meq/l)	10.9
		Cat./Anion Balance(%)	3.38

* Possible Interference
** Sulfur Interference
Note: Metals are Total unless noted

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 7/19/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 6/28/85
Date Received: 7/05/85
Sample Time: 03:00

Attn: Mr. Christopher P. Allen
Sample I.D.: G90 (S8-1)

Your P.O. No: 29369
Lab No.: 85-4679-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Magnesium	35
Alkalinity (as $CaCO_3$)	303	Manganese	0.01
Aluminum	0.22	Mercury	-0.0002
Arsenic	0.001	Molybdenum	-0.05
Barium	0.12	Nickel	-0.02
Bicarbonate (as $CaCO_3$)	303	Nitrogen, Ammonia	0.15
Boron	0.05	Nitrogen, Nitrate	-0.02
Cadmium	-0.005	Nitrogen, Nitrite	-0.02
Calcium	59	Oil & Grease	-1
Carbonate (as $CaCO_3$)	0	Phosphorus, Ortho	-0.02
Chloride	-1	Potassium	1
Chromium	-0.01	Selenium	-0.002
Copper	-0.02	Sodium	12
Fluoride	0.31	Solids, Dissolved	312
Hardness (as $CaCO_3$)	292	Sulfate	14
Iron, Dissolved	-0.02	Sulfide as S	-0.2
Iron, Total	0.40	Zinc	0.307
Lead	0.05	Cations (meq/l)	6.37
		Anions (meq/l)	6.35
		Cat./Anion Balance(%)	0.16

Note: Metals are Total unless noted

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 7/19/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 6/28/85
Date Received: 7/05/85
Sample Time: 11:20

Attn: Mr. Christopher P. Allen
Sample I.D.: S31-1

Your P.O. No: 29369
Lab No.: 85-4680-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Magnesium	35
Alkalinity (as $CaCO_3$)	263	Manganese	0.01
Aluminum	0.10	Mercury	0.0024 *
Arsenic	-0.001	Molybdenum	-0.05
Barium	0.18	Nickel	-0.02
Bicarbonate (as $CaCO_3$)	263	Nitrogen, Ammonia	0.15
Boron	0.06	Nitrogen, Nitrate	-0.02
Cadmium	-0.005	Nitrogen, Nitrite	-0.02
Calcium	54	Oil & Grease	-1
Carbonate (as $CaCO_3$)	0	Phosphorus, Ortho	-0.02
Chloride	2	Potassium	1
Chromium	-0.01	Selenium	-0.002
Copper	-0.02	Sodium	15
Fluoride	0.32	Solids, Dissolved	318
Hardness (as $CaCO_3$)	279	Sulfate	37
Iron, Dissolved	-0.02	Sulfide as S	-0.2
Iron, Total	0.09	Zinc	0.637
Lead	0.03	Cations (meq/l)	6.26
		Anions (meq/l)	6.09
		Cat./Anion Balance(%)	1.32

Note: Metals are Total unless noted
* Possible Interference

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 7/19/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. Christopher P. Allen

Sample Date: 6/28/85
Date Received: 7/05/85
Sample Time: 01:35
Your P.O. No: 29369

Sample I.D. E-22

Lab No. 85-4681-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	297	Sodium	49
Calcium	44	Solids, Dissolved	408
Carbonate (as $CaCO_3$)	0	Solids, Suspended	52
Chloride	8	Sulfate	58
Iron, Total	0.14	Cations (meq/l)	7.93
Magnesium	43	Anions (meq/l)	7.38
Oil & Grease	-1	Cat./Anions Balance(%)	3.60
Potassium	2		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 7/19/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. Christopher P. Allen

Sample Date: 6/28/85
Date Received: 7/05/85
Sample Time: 02:05
Your P.O. No: 29369

Sample I.D. 18-2

Lab No. 85-4682-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	338	Sodium	83
Calcium	34	Solids, Dissolved	468
Carbonate (as $CaCO_3$)	0	Solids, Suspended	46
Chloride	11	Sulfate	68
Iron, Total	0.20	Cations (meq/l)	9.09
Magnesium	44	Anions (meq/l)	8.50
Oil & Grease	-1	Cat./Anions Balance(%)	3.38
Potassium	5		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 7/19/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. Christopher P. Allen

Sample Date: 6/28/85
Date Received: 7/05/85
Sample Time: 12:35
Your P.O. No: 29367

Sample I.D. 18-1

Lab No. 85-4683-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Oil & Grease	-1
Alkalinity (as $CaCO_3$)	673	Solids, Dissolved	856
Iron, Total	0.27	Solids, Suspended	-4
Manganese, Total	0.01		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 8/12/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 7/24/85

Date Received: 7/30/85

Attn: Mr. J.T. Paluso

Your P.O. No:

Sample I.D. 18-2

Lab No.: 85-5167-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	290	Sodium	71
Calcium	39	Solids, Dissolved	462
Carbonate (as $CaCO_3$)	0	Solids, Suspended	-4
Chloride	23	Sulfate	103
Iron, Total	1.31	Cations (meq/l)	9.25
Magnesium	50	Antion (meq/l)	8.61
Oil & Grease	-1	Cat/Anion Bal.(%)	3.61
Potassium	3		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 8/12/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 7/24/85

Date Received: 7/30/85

Attn: Mr. J.T. Paluso

Your P.O. No:

Sample I.D. E-22

Lab No.: 85-5168-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	300	Sodium	58
Calcium	35	Solids, Dissolved	386
Carbonate (as $CaCO_3$)	0	Solids, Suspended	106
Chloride	12	Sulfate	66
Iron, Total	1.21	Cations (meq/l)	7.72
Magnesium	41	Antion (meq/l)	7.72
Oil & Grease	-1	Cat/Anion Bal.(%)	0.04
Potassium	2		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 8/12/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. J.T. Paluso

Sample Date: 7/24/85
Date Received: 7/30/85

Your P.O. No:

Sample I.D. 18-1

Lab No. 85-5169-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Oil & Grease	-1
Alkalinity (as $CaCO_3$)	667	Solids, Dissolved	832
Iron, Total	0.17	Solids, Suspended	4
Manganese, Total	0.01		

Ralph V. Poulsen

Ralph V. Poulsen, Director

SAMPLES ANALYZED FOR TOTAL ZINC

FOR

SOLDIER CREEK COAL COMPANY

Lab No.	Sample I.D.	Sample Date	Original Total Zinc mg/l	Retest Total Zinc mg/l
85-4677-W	G-88	7/01/85	2.07	*
85-4678-W	G-89	6/27/85	1.04	*
85-4679-W	G-90 (58-1)	6/28/85	0.307	*
85-4680-W	S31-1	6/28/85	0.637	*

* Sample disposed of before re-test could be completed.

Ralph V. Poulsen

Ralph V. Poulsen

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. J.T. Paluso
Sample I.D.: E-22 Stream

Sample Date: 8/29/85
Date Received: 9/05/85
Sample Time: 09:00
Your P.O. No: 29369
Lab No.: 85-5906-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Magnesium	49
Alkalinity (as $CaCO_3$)	335	Manganese	0.02
Aluminum	0.10	Mercury	0.0007 *
Arsenic	-0.001	Molybdenum	-0.05
Barium	0.17	Nickel	-0.02
Bicarbonate (as $CaCO_3$)	335	Nitrogen, Ammonia	0.05
Boron	0.07	Nitrogen, Nitrate	-0.02
Cadmium	-0.005	Nitrogen, Nitrite	-0.02
Calcium	38	Oil & Grease	-1
Carbonate (as $CaCO_3$)	0	Phosphorus, Ortho	-0.02
Chloride	13	Potassium	2
Chromium	-0.01	Selenium	-0.002
Copper	-0.02	Sodium	37
Fluoride	0.42	Solids, Dissolved	422
Hardness (as $CaCO_3$)	297	Sulfate	60
Iron, Dissolved	-0.02	Sulfide as S	0.2
Iron, Total	0.09	Zinc	-0.01
Lead	-0.02	Cations (meq/l)	7.60
		Anions (meq/l)	8.32
		Cat./Anion Balance(%)	4.56

Note: Metals are Total unless noted
* Sample Analyzed twice to varify value

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. J.T. Paluso

Sample Date: 8/29/85
Date Received: 9/05/85
Sample Time: 11:30
Your P.O. No: 29369

Sample I.D.: 18-2 Stream

Lab No.: 85-5907-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Magnesium	47
Alkalinity (as $CaCO_3$)	318	Manganese	0.03
Aluminum	-0.05	Mercury	-0.0002
Arsenic	-0.001	Molybdenum	-0.05
Barium	0.16	Nickel	-0.02
Bicarbonate (as $CaCO_3$)	318	Nitrogen, Ammonia	0.04
Boron	0.07	Nitrogen, Nitrate	-0.02
Cadmium	-0.005	Nitrogen, Nitrite	-0.02
Calcium	33	Oil & Grease	1
Carbonate (as $CaCO_3$)	0	Phosphorus, Ortho	-0.02
Chloride	13	Potassium	2
Chromium	-0.01	Selenium	0.006
Copper	-0.02	Sodium	82
Fluoride	0.46	Solids, Dissolved	440
Hardness (as $CaCO_3$)	276	Sulfate	86
Iron, Dissolved	-0.02	Sulfide as S	-0.2
Iron, Total	0.06	Zinc	-0.01
Lead	-0.02	Cations (meq/l)	9.16
		Anions (meq/l)	8.53
		Cat./Anion Balance(%)	3.58

Note: Metals are Total unless noted

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/28/85
Sample Time: 11:50
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. G-88 Spring

Lab No.: 85-5908-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	259	Sodium	35
Calcium	32	Solids, Dissolved	270
Carbonate (as $CaCO_3$)	0	Solids, Suspended	2
Chloride	1	Sulfate	27
Iron, Total	0.14	Zinc, Total	-0.01
Magnesium	36	Cations (meq/l)	6.12
Oil & Grease	-1	Antion (meq/l)	5.78
Potassium	1	Cat/Anion Bal.(%)	2.88

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/29/85
Sample Time: 08:30
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. G-89 Sulfur Spring

Lab No.: 85-5909-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	484	Sodium	187
Calcium	15	Solids, Dissolved	608
Carbonate (as $CaCO_3$)	0	Solids, Suspended	-2
Chloride	40	Sulfate	6
Iron, Total	0.02	Zinc, Total	-0.01
Magnesium	31	Cations (meq/l)	11.6
Oil & Grease	-1	Antion (meq/l)	10.9
Potassium	3	Cat/Anion Bal.(%)	2.98

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/28/85
Sample Time: 12:55
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. G-90 (S8-1) Spring

Lab No.: 85-5910-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	324	Sodium	12
Calcium	68	Solids, Dissolved	330
Carbonate (as $CaCO_3$)	0	Solids, Suspended	104
Chloride	-1	Sulfate	21
Iron, Total	2.59	Zinc, Total	0.02
Magnesium	38	Cations (meq/l)	7.15
Oil & Grease	-1	Antion (meq/l)	6.92
Potassium	4	Cat/Anion Bal.(%)	1.61

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/29/85
Sample Time: 10:15
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. S31-1

Lab No.: 85-5911-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	206	Sodium	18
Calcium	37	Solids, Dissolved	264
Carbonate (as $CaCO_3$)	10	Solids, Suspended	4
Chloride	3	Sulfate	47
Iron, Total	0.15	Zinc, Total	-0.01
Magnesium	37	Cations (meq/l)	5.70
Oil & Grease	-1	Antion (meq/l)	5.39
Potassium	1	Cat/Anion Bal.(%)	2.80

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. J.T. Paluso

Sample Date: 8/30/85
Date Received: 9/05/85
Sample Time: 02:40
Your P.O. No: 29369

Sample I.D. 18-1 New

Lab No. 85-5912-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Oil & Grease	-1
Alkalinity (as $CaCO_3$)	636	Solids, Dissolved	806
Iron, Total	0.49	Solids, Suspended	2
Manganese, Total	0.02		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501
Attn: Mr. J.T. Paluso

Sample Date: 8/30/85
Date Received: 9/05/85
Sample Time: 01:40
Your P.O. No: 29369

Sample I.D. 18-1 Old

Lab No. 85-5913-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Acidity (as $CaCO_3$)	0	Oil & Grease	-1
Alkalinity (as $CaCO_3$)	642	Solids, Dissolved	800
Iron, Total	0.49	Solids, Suspended	6
Manganese, Total	0.02		

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/30/85
Sample Time: 08:50
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. UG-Shaft

Lab No.: 85-5914-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	437	Sodium	74
Calcium	96	Solids, Dissolved	804
Carbonate (as $CaCO_3$)	0	Solids, Suspended	-2
Chloride	15	Sulfate	280
Iron, Total	0.02	Cations (meq/l)	14.7
Magnesium	77	Antion (meq/l)	15.0
Potassium	13	Cat/Anion Bal.(%)	1.12

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/30/85
Sample Time: 10:30
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. UG-2N Area

Lab No.: 85-5915-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	528	Sodium	147
Calcium	48	Solids, Dissolved	620
Carbonate (as $CaCO_3$)	0	Solids, Suspended	-2
Chloride	7	Sulfate	51
Iron, Total	-0.02	Cations (meq/l)	12.4
Magnesium	38	Antion (meq/l)	11.8
Potassium	15	Cat/Anion Bal.(%)	2.26

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/30/85
Sample Time: 11:00
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. UG-2N2E

Lab No.: 85-5916-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	606	Sodium	275
Calcium	14	Solids, Dissolved	802
Carbonate (as $CaCO_3$)	59	Solids, Suspended	-2
Chloride	29	Sulfate	49
Iron, Total	0.08	Cations (meq/l)	15.8
Magnesium	30	Antion (meq/l)	15.1
Potassium	22	Cat/Anion Bal.(%)	2.23

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/30/85
Sample Time: 09:20
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. UG-3N

Lab No.: 85-5917-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	343	Sodium	54
Calcium	36	Solids, Dissolved	386
Carbonate (as $CaCO_3$)	0	Solids, Suspended	-2
Chloride	-1	Sulfate	41
Iron, Total	0.02	Cations (meq/l)	7.91
Magnesium	42	Antion (meq/l)	7.72
Potassium	11	Cat/Anion Bal.(%)	1.18

Ralph V. Poulsen

Ralph V. Poulsen, Director

Date: 9/20/85

BOOKCLIFFS COMMERCIAL LABORATORIES
WATER ANALYSIS REPORT

Client: Soldier Creek Coal Company
Address: P.O. Box I
Price, Utah 84501

Sample Date: 8/30/85
Sample Time: 12:55
Date Received: 9/05/85

Attn: Mr. J.T. Paluso

Your P.O. No: 29369

Sample I.D. UG-MN3N Area

Lab No.: 85-5918-W

Parameter	Concentration mg/l	Parameter	Concentration mg/l
Bicarbonate (as $CaCO_3$)	653	Sodium	238
Calcium	39	Solids, Dissolved	790
Carbonate (as $CaCO_3$)	0	Solids, Suspended	2
Chloride	28	Sulfate	72
Iron, Total	0.57	Cations (meq/l)	15.6
Magnesium	32	Antion (meq/l)	15.4
Potassium	20	Cat/Anion Bal.(%)	0.68

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. J.T. Paluso
P.O. No.:

Sample ID: UG-2N (AREA)
Sample Date Time: 09/27/85 03:00

Lab No.: 85-WI/06722
Date Received: 10/04/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	648.	mg/l
Bicarbonate as CaCO3	648.	mg/l
Boron, dissolved	.55	mg/l
Calcium, dissolved	40.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	31.	mg/l
Fluoride	3.42	mg/l
Hardness as CaCO3	244.	mg/l
Magnesium, dissolved	35.	mg/l
Nitrogen, ammonia	1.03	mg/l
Nitrogen, nitrate	.01	mg/l
Nitrogen, nitrite	.01	mg/l
Oil and Grease		mg/l
Phosphorus, ortho	-.02	mg/l
Potassium, dissolved	19.	mg/l
Sodium, dissolved	235.	mg/l
Sulfate	76.	mg/l
Sulfide as S	.4	mg/l
Cations (sum)	15.70	meq/l
Anions (sum)	15.42	meq'l
Cation-Anion Balance	.90	%
Solids, total dissolved	794.	mg/l
Aluminum, total	-.05	mg/l
Arsenic, total	-.001	mg/l
Barium, total	.68	mg/l
Cadmium, total	-.005	mg/l
Chromium, total	-.01	mg/l
Copper, total	-.02	mg/l
Iron, dissolved	.44	mg/l
Iron, total	.43	mg/l
Lead, total	-.02	mg/l
Manganese, total	.02	mg/l
Mercury, total	-.0002	mg/l
Molybdenum, total	-.05	mg/l
Nickel, total	-.02	mg/l
Selenium, total	.006	mg/l
Zinc, total	-.01	mg/l

Remarks: OG BOTTLE BROKEN IN SHIPMENT

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. J.T. Paluso
P.O. No.:

Sample ID: UG-2N2E
Sample Date Time: 09/27/85 02:30

Lab No.: 85-WI/06723
Date Received: 10/04/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	534.	mg/l
Bicarbonate as CaCO3	534.	mg/l
Boron, dissolved	.46	mg/l
Calcium, dissolved	49.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	11.	mg/l
Fluoride	1.30	mg/l
Hardness as CaCO3	287.	mg/l
Magnesium, dissolved	40.	mg/l
Nitrogen, ammonia	1.16	mg/l
Nitrogen, nitrate	.01	mg/l
Nitrogen, nitrite	.01	mg/l
Oil and Grease		mg/l
Phosphorus, ortho	-.02	mg/l
Potassium, dissolved	14.	mg/l
Sodium, dissolved	138.	mg/l
Sulfate	47.	mg/l
Sulfide as S	18.	mg/l
Cations (sum)	12.17	meq/l
Anions (sum)	11.98	meq'l
Cation-Anion Balance	.79	%
Solids, total dissolved	618.	mg/l
Aluminum, total	-.05	mg/l
Arsenic, total	-.001	mg/l
Barium, total	3.54	mg/l
Cadmium, total	-.005	mg/l
Chromium, total	-.01	mg/l
Copper, total	-.02	mg/l
Iron, dissolved	-.02	mg/l
Iron, total	.02	mg/l
Lead, total	-.02	mg/l
Manganese, total	-.01	mg/l
Mercury, total	-.0002	mg/l
Molybdenum, total	-.05	mg/l
Nickel, total	-.02	mg/l
Selenium, total	-.002	mg/l
Zinc, total	-.01	mg/l

Remarks: OG BOTTLE BROKEN IN SHIPMENT

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. J.T. Paluso
P.O. No.:

Sample ID: UG'3N
Sample Date Time: 09/27/85 12:50

Lab No.: 85-WI/06724
Date Received: 10/04/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	356.	mg/l
Bicarbonate as CaCO3	356.	mg/l
Boron, dissolved	.29	mg/l
Calcium, dissolved	41.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	3.	mg/l
Fluoride	1.30	mg/l
Hardness as CaCO3	291.	mg/l
Magnesium, dissolved	46.	mg/l
Nitrogen, ammonia	.73	mg/l
Nitrogen, nitrate	.01	mg/l
Nitrogen, nitrite	.01	mg/l
Oil and Grease	0.	mg/l
Phosphorus, ortho	-.02	mg/l
Potassium, dissolved	11.	mg/l
Sodium, dissolved	53.	mg/l
Sulfate	39.	mg/l
Sulfide as S	2.4	mg/l
Cations (sum)	8.44	meq/l
Anions (sum)	8.02	meq'l
Cation-Anion Balance	2.55	%
Solids, total dissolved	386.	mg/l
Aluminum, total	.74	mg/l
Arsenic, total	-.001	mg/l
Barium, total	1.89	mg/l
Cadmium, total	-.005	mg/l
Chromium, total	-.01	mg/l
Copper, total	-.02	mg/l
Iron, dissolved	-.02	mg/l
Iron, total	.11	mg/l
Lead, total	-.02	mg/l
Manganese, total	-.01	mg/l
Mercury, total	-.0002	mg/l
Molybdenum, total	-.05	mg/l
Nickel, total	-.02	mg/l
Selenium, total	-.002	mg/l
Zinc, total	.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. J.T. Paluso
P.O. No.:

Sample ID: UG-SHAFT
Sample Date Time: 09/27/85 01:15

Lab No.: 85-WI/06725
Date Received: 10/04/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	404.	mg/l
Bicarbonate as CaCO3	404.	mg/l
Boron, dissolved	.17	mg/l
Calcium, dissolved	93.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	16.	mg/l
Fluoride	.80	mg/l
Hardness as CaCO3	540.	mg/l
Magnesium, dissolved	75.	mg/l
Nitrogen, ammonia	.55	mg/l
Nitrogen, nitrate	.01	mg/l
Nitrogen, nitrite	.01	mg/l
Oil and Grease	7.	mg/l
Phosphorus, ortho	-.02	mg/l
Potassium, dissolved	12.	mg/l
Sodium, dissolved	67.	mg/l
Sulfate	274.	mg/l
Sulfide as S	11.3	mg/l
Cations (sum)	14.06	meq/l
Anions (sum)	14.28	meq'l
Cation-Anion Balance	-.78	%
Solids, total dissolved	778.	mg/l
Aluminum, total	-.05	mg/l
Arsenic, total	-.001	mg/l
Barium, total	.06	mg/l
Cadmium, total	-.005	mg/l
Chromium, total	-.01	mg/l
Copper, total	-.02	mg/l
Iron, dissolved	.03	mg/l
Iron, total	.02	mg/l
Lead, total	-.02	mg/l
Manganese, total	.03	mg/l
Mercury, total	-.0002	mg/l
Molybdenum, total	-.05	mg/l
Nickel, total	-.02	mg/l
Selenium, total	-.002	mg/l
Zinc, total	-.01	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. J.T. Paluso
P.O. No.:

Sample ID: UG-MN3W (AREA)
Sample Date Time: 09/27/85 02:00

Lab No.: 85-WI/06726
Date Received: 10/04/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	684.	mg/l
Bicarbonate as CaCO3	552.	mg/l
Boron, dissolved	.91	mg/l
Calcium, dissolved	14.	mg/l
Carbonate as CaCO3	132.	mg/l
Chloride	31.	mg/l
Fluoride	1.66	mg/l
Hardness as CaCO3	166.	mg/l
Magnesium, dissolved	32.	mg/l
Nitrogen, ammonia	.04	mg/l
Nitrogen, nitrate	.35	mg/l
Nitrogen, nitrite	.01	mg/l
Oil and Grease	0.	mg/l
Phosphorus, ortho	-.02	mg/l
Potassium, dissolved	21.	mg/l
Sodium, dissolved	257.	mg/l
Sulfate	45.	mg/l
Sulfide as S	-.2	mg/l
Cations (sum)	15.18	meq/l
Anions (sum)	15.49	meq'l
Cation-Anion Balance	-1.01	%
Solids, total dissolved	788.	mg/l
Aluminum, total	-.05	mg/l
Arsenic, total	-.001	mg/l
Barium, total	1.11	mg/l
Cadmium, total	-.005	mg/l
Chromium, total	-.01	mg/l
Copper, total	-.02	mg/l
Iron, dissolved	-.02	mg/l
Iron, total	.02	mg/l
Lead, total	-.02	mg/l
Manganese, total	-.01	mg/l
Mercury, total	-.0002	mg/l
Molybdenum, total	-.05	mg/l
Nickel, total	-.02	mg/l
Selenium, total	-.002	mg/l
Zinc, total	-.01	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. J.T. Paluso
P.O. No.:

Sample ID: 18-1 SHAFT
Sample Date Time: UNKNOWN

Lab No.: 85-WI/06720
Date Received: 10/04/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	366.	mg/l
Bicarbonate as CaCO3	366.	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Solids, total dissolved	944.	mg/l
Solids, total suspended	-2.	mg/l
Iron, total	.97	mg/l
Manganese, total	.02	mg/l

Remarks: OG BOTTLE BROKEN IN SHIPMENT

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. J.T. Paluso
P.O. No.:

Sample ID: 18-1 BELT
Sample Date Time: 09/27/85 02:49

Lab No.: 85-WI/06721
Date Received: 10/04/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	644.	mg/l
Bicarbonate as CaCO3	644.	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Solids, total dissolved	802.	mg/l
Solids, total suspended	-2.	mg/l
Iron, total	.43	mg/l
Manganese, total	.02	mg/l

Remarks: OG BOTTLE BROKEN IN SHIPMENT

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-1 SHAFT
Sample Date Time: 10/28/85 10:00

Lab No.: 85-WI/07177
Date Received: 11/01/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	366.	mg/l
Bicarbonate as CaCO3	366.	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Oil and Grease	-1.	mg/l
Solids, total dissolved	898.	mg/l
Solids, total suspended	-2.	mg/l
Iron, total	1.72	mg/l
Manganese, total	.03	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-1 BELT
Sample Date Time: 10/29/85 09:05

Lab No.: 85-WI/07178
Date Received: 11/01/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	630.	mg/l
Bicarbonate as CaCO3	630.	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Oil and Grease	1.	mg/l
Solids, total dissolved	800.	mg/l
Solids, total suspended	2.	mg/l
Iron, total	.39	mg/l
Manganese, total	.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-2
Sample Date Time: 10/28/85 12:30

Lab No.: 85-WI/07179
Date Received: 11/01/85

Parameters

Alkalinity as CaCO3	332.	mg/l
Bicarbonate as CaCO3	332.	mg/l
Calcium, dissolved	40.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	19.	mg/l
Hardness as CaCO3	321.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	54.	mg/l
Oil and Grease	-1.	mg/l
Potassium, dissolved	2.	mg/l
SAR in water	2.33	
Sodium, dissolved	95.	mg/l
Sulfate	128.	mg/l
Cations (sum)	10.66	meq/l
Anions (sum)	9.86	meq'l
Cation-Anion Balance	3.90	%
Solids, total dissolved	476.	mg/l
Solids, total suspended	2.	mg/l
Iron, total	.06	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: E-22
Sample Date Time: 10/28/85 01:50

Lab No.: 85-WI/07180
Date Received: 11/01/85

Parameters

Alkalinity as CaCO3	352.	mg/l
Bicarbonate as CaCO3	352.	mg/l
Calcium, dissolved	39.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	16.	mg/l
Hardness as CaCO3	311.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	52.	mg/l
Oil and Grease	-1.	mg/l
Potassium, dissolved	1.	mg/l
SAR in water	2.35	
Sodium, dissolved	94.	mg/l
Sulfate	97.	mg/l
Cations (sum)	10.38	meq/l
Anions (sum)	9.52	meq'l
Cation-Anion Balance	4.32	%
Solids, total dissolved	440.	mg/l
Solids, total suspended	-2.	mg/l
Iron, total	.04	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: G-88
Sample Date Time: 11/22/85 09:15

Lab No.: 85-WI/07707
Date Received: 11/26/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	300.	mg/l
Bicarbonate as CaCO3	300.	mg/l
Boron, dissolved	.04	mg/l
Calcium, dissolved	39.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	5.	mg/l
Fluoride	.43	mg/l
Hardness as CaCO3	262.	mg/l
Magnesium, dissolved	40.	mg/l
Nitrogen, ammonia	.09	mg/l
Nitrogen, nitrate	.01	mg/l
Nitrogen, nitrite	.01	mg/l
Oil and Grease	1.	mg/l
Phosphate	-.1	mg/l
Potassium, dissolved	1.	mg/l
Sodium, dissolved	46.	mg/l
Sulfate	33.	mg/l
Sulfide as S	-.2	mg/l
Cations (sum)	7.28	meq/l
Anions (sum)	6.83	meq'l
Cation-Anion Balance	3.19	%
Solids, total dissolved	314.	mg/l
Aluminum, total	.32	mg/l
Arsenic, total	-.001	mg/l
Barium, total	.10	mg/l
Cadmium, total	.009	mg/l
Chromium, total	-.01	mg/l
Copper, total	-.02	mg/l
Iron, dissolved	.16	mg/l
Iron, total	.33	mg/l
Lead, total	-.02	mg/l
Manganese, total	.01	mg/l
Mercury, total	-.0002	mg/l
Molybdenum, total	-.05	mg/l
Nickel, total	-.02	mg/l
Selenium, total	.004	mg/l
Zinc, total	.03	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: G-89
Sample Date Time: 11/22/85 02:55

Lab No.: 85-WI/07708
Date Received: 11/26/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	482.	mg/l
Bicarbonate as CaCO3	482.	mg/l
Boron, dissolved	.10	mg/l
Calcium, dissolved	24.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	19.	mg/l
Fluoride	.28	mg/l
Hardness as CaCO3	195.	mg/l
Magnesium, dissolved	33.	mg/l
Nitrogen, ammonia	0.32	mg/l
Nitrogen, nitrate	.01	mg/l
Nitrogen, nitrite	.01	mg/l
Oil and Grease	4.	mg/l
Phosphate	-.1	mg/l
Potassium, dissolved	3.	mg/l
Sodium, dissolved	208.	mg/l
Sulfate	130.	mg/l
Sulfide as S	-.2	mg/l
Cations (sum)	13.14	meq/l
Anions (sum)	12.90	meq'l
Cation-Anion Balance	.92	%
Solids, total dissolved	604.	mg/l
Aluminum, total	.08	mg/l
Arsenic, total	-.001	mg/l
Barium, total	.41	mg/l
Cadmium, total	-.005	mg/l
Chromium, total	-.01	mg/l
Copper, total	-.02	mg/l
Iron, dissolved	.07	mg/l
Iron, total	.09	mg/l
Lead, total	-.02	mg/l
Manganese, total	.02	mg/l
Mercury, total	.0008	mg/l
Molybdenum, total	-.05	mg/l
Nickel, total	-.02	mg/l
Selenium, total	.003	mg/l
Zinc, total	.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-1 (SHAFT) 003
Sample Date Time: 11/22/83 12:30

Lab No.: 85-WI/07709
Date Received: 11/26/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	370.	mg/l
Bicarbonate as CaCO3	370.	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Oil and Grease	1.	mg/l
Solids, total dissolved	888.	mg/l
Solids, total suspended	8.	mg/l
Iron, total	1.10	mg/l
Manganese, total	.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-1 (BELT) 001
Sample Date Time: 11/22/85 13:50

Lab No.: 85-WI/07710
Date Received: 11/26/85

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	558.	mg/l
Bicarbonate as CaCO3	558.	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Oil and Grease	1.	mg/l
Solids, total dissolved	876.	mg/l
Solids, total suspended	6.	mg/l
Iron, total	.02	mg/l
Manganese, total	-.01	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: UG-3N BELT (DRIPPER)
Sample Date Time: 11/22/85 11:20

Lab No.: 85-WI/07711
Date Received: 11/26/85

Parameters

Alkalinity as CaCO3	650.	mg/l
Bicarbonate as CaCO3	650.	mg/l
Calcium, dissolved	50.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	17.	mg/l
Hardness as CaCO3	285.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	39.	mg/l
Potassium, dissolved	15.	mg/l
SAR in water	5.19	
Sodium, dissolved	199.	mg/l
Sulfate	16.	mg/l
Cations (sum)	14.84	meq/l
Anions (sum)	13.81	meq'l
Cation-Anion Balance	3.60	%
Solids, total dissolved	708.	mg/l
Iron, total	-.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: UG-MN3W (AREA)
Sample Date Time: 11/22/85 14:20

Lab No.: 85-WI/07712
Date Received: 11/26/85

Parameters

Alkalinity as CaCO3	682.	mg/l
Bicarbonate as CaCO3	638.	mg/l
Calcium, dissolved	14.	mg/l
Carbonate as CaCO3	44.	mg/l
Chloride	30.	mg/l
Hardness as CaCO3	166.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	32.	mg/l
Potassium, dissolved	18.	mg/l
SAR in water	9.83	
Sodium, dissolved	288.	mg/l
Sulfate	35.	mg/l
Cations (sum)	16.46	meq/l
Anions (sum)	15.22	meq'l
Cation-Anion Balance	3.91	%
Solids, total dissolved	812.	mg/l
Iron, total	-.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: UG-3N
Sample Date Time: 11/22/85

Lab No.: 85-WI/07713
Date Received: 11/26/85

Parameters

Alkalinity as CaCO3	350.	mg/l
Bicarbonate as CaCO3	350.	mg/l
Calcium, dissolved	39.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	4.	mg/l
Hardness as CaCO3	282.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	45.	mg/l
Potassium, dissolved	9.	mg/l
SAR in water	1.60	
Sodium, dissolved	61.	mg/l
Sulfate	45.	mg/l
Cations (sum)	8.56	meq/l
Anions (sum)	8.06	meq'l
Cation-Anion Balance	3.01	%
Solids, total dissolved	386.	mg/l
Iron, total	-.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: UG-2N (AREA)
Sample Date Time: 11/22/85 14:00

Lab No.: 85-WI/07714
Date Received: 11/26/85

Parameters

Alkalinity as CaCO3	564.	mg/l
Bicarbonate as CaCO3	564.	mg/l
Calcium, dissolved	28.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	34.	mg/l
Hardness as CaCO3	234.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	40.	mg/l
Potassium, dissolved	19.	mg/l
SAR in water	7.88	
Sodium, dissolved	274.	mg/l
Sulfate	183.	mg/l
Cations (sum)	17.23	meq/l
Anions (sum)	16.08	meq'l
Cation-Anion Balance	3.45	%
Solids, total dissolved	880.	mg/l
Iron, total	.03	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: UG-3N8E
Sample Date Time: 11/22/85 11:50

Lab No.: 85-WI/07715
Date Received: 11/26/85

Parameters

Alkalinity as CaCO3	426.	mg/l
Bicarbonate as CaCO3	426.	mg/l
Calcium, dissolved	43.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	6.	mg/l
Hardness as CaCO3	280.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	42.	mg/l
Potassium, dissolved	11.	mg/l
SAR in water	2.89	
Sodium, dissolved	110.	mg/l
Sulfate	62.	mg/l
Cations (sum)	10.72	meq/l
Anions (sum)	9.99	meq'l
Cation-Anion Balance	3.52	%
Solids, total dissolved	506.	mg/l
Iron, total	.04	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: UG-SHAFT
Sample Date Time: 11/22/85

Lab No.: 85-WI/07716
Date Received: 11/26/85

Parameters

Alkalinity as CaCO3	416.	mg/l
Bicarbonate as CaCO3	416.	mg/l
Calcium, dissolved	99.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	15.	mg/l
Hardness as CaCO3	576.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	80.	mg/l
Potassium, dissolved	10.	mg/l
SAR in water	1.45	
Sodium, dissolved	79.	mg/l
Sulfate	255.	mg/l
Cations (sum)	15.25	meq/l
Anions (sum)	14.09	meq'l
Cation-Anion Balance	3.95	%
Solids, total dissolved	748.	mg/l
Iron, total	.03	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: UG-2N2E
Sample Date Time: 11/22/85 01:20

Lab No.: 85-WI/07717
Date Received: 11/26/85

Parameters

Alkalinity as CaCO3	552.	mg/l
Bicarbonate as CaCO3	552.	mg/l
Calcium, dissolved	52.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	10.	mg/l
Hardness as CaCO3	290.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	39.	mg/l
Potassium, dissolved	12.	mg/l
SAR in water	4.13	
Sodium, dissolved	160.	mg/l
Sulfate	39.	mg/l
Cations (sum)	13.15	meq/l
Anions (sum)	12.14	meq'l
Cation-Anion Balance	3.99	%
Solids, total dissolved	600.	mg/l
Iron, total	-.02	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-2
Sample Date Time: 12/30/85 14:45

Lab No.: 86-WI/00031
Date Received: 01/03/86

Parameters

Alkalinity as CaCO3	454.	mg/l
Bicarbonate as CaCO3	454	mg/l
Calcium, dissolved	39.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	25.	mg/l
Hardness as CaCO3	294.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	48.	mg/l
Oil and Grease	-1.	mg/l
Potassium, dissolved	9.	mg/l
SAR in water	4.31	
Sodium, dissolved	168.	mg/l
Sulfate	124.	mg/l
Cations (sum)	13.51	meq/l
Anions (sum)	12.38	meq'l
Cation-Anion Balance	4.36	%
Solids, total dissolved	610.	mg/l
Solids, total suspended	16.	mg/l
Iron, total	.23	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

Client : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: E-22
Sample Date Time: 12/30/85 13:45

Lab No.: 86-WI/00032
Date Received: 01/03/86

Parameters

Alkalinity as CaCO3	372.	mg/l
Bicarbonate as CaCO3	372	mg/l
Calcium, dissolved	31.	mg/l
Carbonate as CaCO3	0	mg/l
Chloride	17.	mg/l
Hardness as CaCO3	270.	mg/l
Hydroxide as CaCO3	0	mg/l
Magnesium, dissolved	47.	mg/l
Oil and Grease	-1.	mg/l
Potassium, dissolved	1.	mg/l
SAR in water	2.52	
Sodium, dissolved	94.	mg/l
Sulfate	99.	mg/l
Cations (sum)	9.57	meq/l
Anions (sum)	10.00	meq'l
Cation-Anion Balance	-2.20	%
Solids, total dissolved	502.	mg/l
Solids, total suspended	32.	mg/l
Iron, total	.69	mg/l

Remarks:

Ralph V. Poulsen

Ralph V. Poulsen, Director

nt : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-1 (BELT) 001
Sample Date Time: 12/10/85 14:40

Lab No.: 86-WI/00033
Date Received: 01/03/86

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	650.	mg/l
Bicarbonate as CaCO3	650	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Oil and Grease	-1.	mg/l
Solids, total dissolved	766.	mg/l
Solids, total suspended	2.	mg/l
Iron, total	.73	mg/l
Manganese, total	.03	mg/l

Remarks:

Ralph V. Poulsen

ph V. Poulsen, Director

ent : Soldier Creek Coal Company
Address : P.O. Box 1
Price, Utah 84501
Attn. : Mr. Christopher Allen
P.O. No.:

Sample ID: 18-1 (SHAFT) 003
Sample Date Time: 12/10/85 13:30

Lab No.: 86-WI/00034
Date Received: 01/03/86

Parameters

Acidity as CaCO3	0.	mg/l
Alkalinity as CaCO3	392.	mg/l
Bicarbonate as CaCO3	392	mg/l
Carbonate as CaCO3	0	mg/l
Hydroxide as CaCO3	0	mg/l
Oil and Grease	-1.	mg/l
Solids, total dissolved	1730.	mg/l
Solids, total suspended	8.	mg/l
Iron, total	.09	mg/l
Manganese, total	.01	mg/l

Remarks:

Ralph V. Poulsen

ph V. Poulsen, Director

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII
ONE DENVER PLACE — 999 18TH STREET — SUITE 1300
DENVER, COLORADO 80202-2413

AUG 1 1985

Ref: 8WM-C

Dave Spillman
Mine Engineer
Soldier Creek Coal Company
P.O. Box 1
Price, Utah 84501

Re: NPDES Permit UT-0023680

Dear Mr. Spillman:

In your letter dated March 13, 1985, you requested a new discharge point. Included with your letter was a map locating the new discharge point, Outfall 003. The March 13, 1985 map will be considered a Revised Area Map submitted pursuant to Part III. A.1 of your permit. You are hereby authorized to discharge from Outfall 003 subject to the limitations contained in Part I, A., of your permit.

If you have any questions, please contact Rob Walline at telephone (303) 293-1596.

Sincerely,

Patrick J. Godsil
Chief, Compliance Branch
Water Management Division

cc: Utah

RECEIVED
AUG 05 1985
SC3

SOLDIER CREEK COAL CO.

Telephone (801) 637-6360

P.O. Box I
Price, Utah 84501

January 24, 1986

Mr. Rob Walline
1 Denver Place, Suite 1300
999 18th Street
Denver, CO 80202-2413

Re: Noncompliance with T.D.S.
Soldier Creek Coal Company
N.P.D.E.S. Permit UT-0023680
Carbon County, Utah

Dear Mr. Walline:

Soldier Canyon Mine's December water analysis report for discharge point 003 showed a noncompliance with our total dissolved solids (T.D.S.) limitation. The noncompliance did not significantly increase the total outfall of T.D.S. and we remained well below the one ton (2,000 pounds) combined limit for all three discharge points. I have enclosed a copy of the analysis along with a copy of the discharge monitoring report.

If you have any questions or need additional information, please contact me.

Sincerely,

SOLDIER CREEK COAL COMPANY

Christopher P. Allen
Mine Engineer

CPA:pp
Enclosure
cc: Mr. Lowell P. Braxton - DOGM
Mr. David Wham - DOGM

Facility Name/Location (if different)

NAME Soldier Creek Coal Company

ADDRESS P.O. Bo

Price, UT 84501

FACILITY Discharge Culvert

LOCATION Carbon County, Utah

DISCHARGE MONITORING REPORT (DMR)

Approval expires 9-30-85

(2-16) PERMIT NUMBER: 0023680

(17-19) DISCHARGE NUMBER: 001

MONITORING PERIOD	YEAR	MO	DAY		YEAR	MO	DAY
FROM	85	10	01	TO	85	12	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
Flow	SAMPLE MEASUREMENT	0.1293	0.1702	MGD	*	*	*	MGD		1/30	Meter
	PERMIT REQUIREMENT	*	*		*	*	*			1/30	Meter
Solids, Total Suspended	SAMPLE MEASUREMENT	*	*	KG/DA	2.0	3.3	6.0	MG/L		1/30	GR
	PERMIT REQUIREMENT	*	*		*	25	70			1/30	GR
Iron, Total (as Fe)	SAMPLE MEASUREMENT	*	*	KG/DA	0.02	0.38	0.73	MG/L		1/30	GR
	PERMIT REQUIREMENT	*	*		*	*	2.0			1/30	GR
Solids, Total Dissolved	SAMPLE MEASUREMENT	*	*	KG/DA	766	814	876	MG/L		1/30	GR
	PERMIT REQUIREMENT	*	*		*	*	1,500			1/30	GR
pH	SAMPLE MEASUREMENT	*	*	KG/DA	7.74	*	8.14	SU		1/30	GR
	PERMIT REQUIREMENT	*	*		6.5	*	9.0			1/30	GR
Oil & Grease	SAMPLE MEASUREMENT	*	*	KG/DA	1.0	1.0	1.0	MG/L		1/30	GR
	PERMIT REQUIREMENT	*	*		*	*	10			1/30	GR
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Christopher P. Allen/
Mine Engineer

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C § 1001 AND 33 U.S.C § 1319. *(Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)*

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE		DATE		
801	637-6360	86	01	22
AREA CODE	NUMBER	YEAR	MO	DAY

COMMENT AND EXPLANATION OF ANY VIOLATIONS *(Reference all attachments here)*

PERMITTEE NAME/ADDRESS (Facility Name/Location if different)

NAME: Soldier Creek Coal Company

ADDRESS: P.O. Box I
Price, UT 84501

FACILITY: Sedimentation Pond

LOCATION: Carbon County, Utah

DISCHARGE MONITORING REPORT (DMR)

Approval expires 9-30-80

(2-16) PERMIT NUMBER: 0023680

(17-19) DISCHARGE NUMBER: 002

MONITORING PERIOD

	YEAR	MO	DAY		YEAR	MO	DAY
FROM	85	10	01	TO	85	12	31
	(20-21)	(22-23)	(24-25)		(26-27)	(28-29)	(30-31)

NOTE: Read instructions before completing this form.

PARAMETER (32-37)		(3 Card Only) QUANTITY OR LOADING (46-53) AVERAGE	(54-61) MAXIMUM	UNITS	(4 Card Only) QUALITY OR CONCENTRATION (38-45) MINIMUM	(46-53) AVERAGE	(54-61) MAXIMUM	UNITS	NO. EX. (62-63)	FREQUENCY OF ANALYSIS (64-68)	SAMPLE TYPE (69-70)
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT		NO	DISCHARGE							
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										
	SAMPLE MEASUREMENT										
	PERMIT REQUIREMENT										

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER

Christopher P. Allen/
Mine Engineer

TYPED OR PRINTED

I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN; AND BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT. SEE 18 U.S.C. § 1001 AND 33 U.S.C. § 1319. (Penalties under these statutes may include fines up to $10,000 and/or maximum imprisonment of between 6 months and 5 years.)

SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT

TELEPHONE: AREA CODE 801 NUMBER 637-6360

DATE: YEAR 86 MO 01 DAY 22

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here)

EPA Form 3320-1 (10-79) PREVIOUS EDITION TO BE USED (REPLACES EPA FORM T-40 WHICH MAY NOT BE USED.)