2002 ANNUAL REPORT

CANYON FUEL COMPANY, LLC
SUFCO MINE
ACT/041/002

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File in:
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*To enter text, click in the box and type your response. If a box already contains an entry select the entry and type the replacement. You can use the **tab** key to move from one field to the next. To select a check box, click in the box or type an x.*

GENERAL INFORMATION

Permittee Name	Canyon Fuel Company, LLC
Mine Name	SUFCO Mine
Operator Name (If other then permittee)	
Permit Expiration Date	05/20/2007
Permit Number	C/041/002
Authorized Representative Title	Kenneth E. May, Mine Manager
Phone Number	(435) 286-4880
Fax Number	(435) 286-4499
E-mail Address	mdavis@archcoal.com
Mailing Address	397 South 800 West, Salina, UT 84654
Resident Agent	C. T. Corporation
Resident Agent Mailing Address	Corporation Trust Center 1209 Orange Street, Wilmington, DE
Number of Binders Submitted	2

IDENTIFICATION OF OTHER PERMITS

Identify other permits that are required in conjunction with mining and reclamation activities.

Permit Type	ID Number	Description	Expiration Date
MSHA Mine ID(s)	4200089	Minesite	
	1211UT090008901	Waste Rock Disposal Site	
MSHA Impoundment(s)			
NPDES/UPDES Permit(s)	UT0022918	Minesite Sediment Pond Major Industrial	April 30, 2006
	UTR000576	Multi-Sector Storm Water Permit	December 31, 2006
PSD Permit(s) (Air)	DAQE71498	Minesite Air Quality Approval Order	
	BAQE12688	Waste Rock Disposal Air Quality Approval Order	
Other			

CERTIFIED REPORTS

List the certified inspection reports as required by the rules and udder the approved plan that must be periodically submitted t the Division. Specify whether the information is included as Appendix A to this report or currently on file with the Division.

Certified Reports:	Required		Included or on file with DOGM		Comments
	Yes	No	Included	On File	
Excess Spoil Piles	☐	☒	☐	☐	
Refuse Piles	☒	☐	☐	☒	Certified Reports prev. submitted
Impoundments	☒	☐	☐	☒	Certified Reports prev. submitted
Other					
_____	☐	☐	☐	☐	
_____	☐	☐	☐	☐	

REPORTING OF OTHER TECHNICAL DATA

List other technical data and information as required under the approved plan, which must be periodically submitted to the Division. Specify whether the information is included as Appendix B to this report or currently on file with the Division.

Technical Data:	Required		Included or on file with DOGM		Comments
	Yes	No	Included	On file	
Climatological	☒	☐	☒	☐	Included on disk in Appendix B
Subsidence Monitoring	☒	☐	☒	☐	Included in Appendix B
Vegetation Monitoring	☒	☐	☒	☐	Included in Appendix B
Raptor Survey	☒	☐	☒	☐	Included in Appendix B
Soils Monitoring	☐	☒	☐	☐	
Water Monitoring	☐	☐	☐	☐	
First quarter	☐	☒	☐	☐	
Second quarter	☒	☐	☐	☒	Data previously submitted
Third quarter	☒	☐	☐	☒	Data previously submitted
Fourth quarter	☒	☐	☐	☒	Data previously submitted
Geological / Geophysical	☐	☒	☐	☐	
Engineering	☐	☒	☐	☐	
Non Coal Waste / Abandoned Underground Equipment*	☐	☒	☐	☐	No equipment has been abandoned underground during 2002
Other Data					
_____	☐	☐	☐	☐	
_____	☐	☐	☐	☐	
_____	☐	☐	☐	☐	
_____	☐	☐	☐	☐	

Reminder: If equipment has been abandoned during 2002, an amendment must be submitted that includes a map showing its location, a description of what was abandoned, whether there was any hazardous or toxic materials and any revision to the PHC as necessary.

LEGAL, FINANCIAL, COMPLIANCE AND RELATED INFORMATION

Change in administration or corporate structure can often bring about necessary changes to information found in the mining and reclamation plan. The Division is Requesting that each permittee review and update the legal, financial, compliance and related information in the plan as part of the annual report. Provide the department of Commerce, annual Report of Officers, or other equivalent information as necessary to ensure that the information provided in the plan is current. Provide any other change as necessary regarding land ownership, lease acquisitions, legal results from appeals of violations, or other changes as necessary to update information required in the mining and reclamation plan. Include and certified financial statements, audits or worksheets which may be required to meet bonding requirements. Specify whether the information is currently on file with the Division or included as Appendix C to the report.

Legal / Financial Update	**Required**		**Included or on File with DOGM**		**Comments**
	Yes	No	Included	On file	
Department of Commerce, Annual Report Officers	☒	☐	☒	☐	Included in Appendix C
Other					
	☐	☐	☐	☐	
	☐	☐	☐	☐	
	☐	☐	☐	☐	

MINE MAPS

Copies of mine maps, current and up-to-date through at least December 31, 2001, are to be provided to the Division as Appendix D to this report in accordance with the requirements of R 645-301-525.270. These map copies shall be made in accordance with 30 CFR 75.1200 as required by MSHA. Upon request, the Division shall keep mine maps confidential.

Map Number(s)	**Map Title/ Description**	**Confidential** Yes	No
	Mining Progress 2002-2003	☒	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐
		☐	☐

OTHER INFORMATION

Please provide any comments of further information to be included as part of the Annual Report. Any other attachments are to be provided as Appendix E to this report. If information is submitted as a group rather then by individual mine, please identify each of the mine's data in the list below.

Additional attachment to this report? **Yes** ☐ **No** ☒

APPENDIX A

Certified Reports

Excess Spoil Piles
Refuse Piles
Impoundments

As required under R645-301-514

CONTENTS

None - Certified Reports previously submitted.

APPENDIX B

Reporting of Technical Data

Including monitoring data, reports, maps, and other information
As required under the approved plan or as required by the Division

In accordance with the requirement of R645-310-130 and R645-301-140

CONTENTS

	----------SUFCO----------				----------Levan----------			
2002	--Temp--		----Pptn----		--Temp--		-----Pptn-----	
DD/MM/YY	Max	Min	Moist.	Snow	Max	Min	Moist.	Snow
01-Jan-02	29	13	0.15	3	37	29	0.12	
02-Jan-02	33	10		2	33	19		
03-Jan-02	33	8		2	37	19		
04-Jan-02	28	8		2	37	21		
05-Jan-02	36	7	T		30	9		
06-Jan-02	39	21			37	16		
07-Jan-02	42	26			48	28		
08-Jan-02	53	29			46	29		
09-Jan-02	40	29			46	29		
10-Jan-02	47	22			38	27		
11-Jan-02	47	20			39	18		
12-Jan-02	48	18			43	20		
13-Jan-02	51	25			39	17		
14-Jan-02	33	9			44	12		
15-Jan-02	35	13			31	21	T	
16-Jan-02	30	3			31	12		
17-Jan-02	26	4			31	4		
18-Jan-02	26	7			28	8	0.02	
19-Jan-02	26	-1			33	2		
20-Jan-02	19	2	0.35	4	33	11		
21-Jan-02	28	12		3	45	11		
22-Jan-02	32	15		1	42	11	0.02	
23-Jan-02	27	1			24	1		
24-Jan-02	19	8			30	2		
25-Jan-02	33	7			43	9		
26-Jan-02	33	8			47	28		
27-Jan-02	30	20			44	36		
28-Jan-02	34	21			41	26	0.27	
29-Jan-02	35	4	0.10	1	26	11		
30-Jan-02	30	-1		1	26	-3		
31-Jan-02	17	0.8		1	24	-2		
01-Feb-02	21	0			31	-1		2
02-Feb-02	23	5			31	4		1
03-Feb-02	32	8			32	4		1
04-Feb-02	35	9			33	4		
05-Feb-02	37	7			35	4		
06-Feb-02	34	7			39	2		
07-Feb-02	43	12			43	11		
08-Feb-02	35	13			40	25	0.07	

09-Feb-02	35	14				36	20		
10-Feb-02	29	4				38	7		
11-Feb-02	36	13				43	9		
12-Feb-02	41	18				37	15		
13-Feb-02	39	17				41	9		
14-Feb-02	35	24				37	26	T	
15-Feb-02	33	7				41	11		
16-Feb-02	38	10				51	21		
17-Feb-02	37	10				49	20		
18-Feb-02	35	20				38	20		
19-Feb-02	31	22	0.23	3		40	23	0.05	
20-Feb-02	35	23	0.32	5		40	19	0.19	
21-Feb-02	36	13	0.02	4		46	22		
22-Feb-02	47	11				55	24		
23-Feb-02	48	13				54	22		
24-Feb-02	47	25				47	26	0.06	
25-Feb-02	36	13				47	18		
26-Feb-02	28	6				41	12		
27-Feb-02	32	16				40	18		
28-Feb-02	37	17				50	18		
01-Mar-02	46	8	0.06	1		49	11	0.05	
02-Mar-02	17	-5				30	9		
03-Mar-02	20	0				35	9		
04-Mar-02	29	7				50	14		
05-Mar-02	44	12				56	21		
06-Mar-02	47	20				56	29		
07-Mar-02	47	28	0.19	2		51	32	0.48	
08-Mar-02	39	-3				48	19	0.04	
09-Mar-02	18	3				50	14		
10-Mar-02	32	5				53	20		
11-Mar-02	39	10	0.18	2		49	27		
12-Mar-02	43	20				58	32		
13-Mar-02	57	30				46	28	0.12	1
14-Mar-02	45	15	0.07	2.5		48	20	0.15	1
15-Mar-02	31	0.5				38	12		1
16-Mar-02	18	13				40	26	0.05	
17-Mar-02	28	15				33	22	0.25	1
18-Mar-02	29	g	0.01	T		35	20	T	
19-Mar-02	32	a				45	18		
20-Mar-02	43	u				61	25		
21-Mar-02	54	g				68	30		
22-Mar-02	56	e				70	34		
23-Mar-02	59					58	41		

24-Mar-02	48	b			55	33		0.13
25-Mar-02	43	r			46	28		0.09
26-Mar-02	43	o			56	25		
27-Mar-02	49	k			64	29		
28-Mar-02	55	e			64	29		
29-Mar-02	41	n			54	29		
30-Mar-02	51				53	25		
31-Mar-02	55				66	25		
01-Apr-02	64				71	31		
02-Apr-02	62				69	35		
03-Apr-02	61				68	33		
04-Apr-02	62				74	33		
05-Apr-02	65				74	39		
06-Apr-02	67				69	47		
07-Apr-02	57				64	38		
08-Apr-02	55				64	32		
09-Apr-02	56	T			73	37		
10-Apr-02	62	E			72	46		
11-Apr-02	59	M	0.01		66	33	T	
12-Apr-02	59	P.			70	47	T	
13-Apr-02	59				74	38		
14-Apr-02	67	G			78	42		
15-Apr-02	69	A			79	50	T	
16-Apr-02	59	U	0.01		70	30		0.16
17-Apr-02	46	G			55	30		0.20
18-Apr-02	47	E	0.02	1	47	29		0.04
19-Apr-02	45				48	29		0.09
20-Apr-02	45	B			44	20		0.47
21-Apr-02	32	R			43	28		0.06
22-Apr-02	49	O			64	30		
23-Apr-02	60	K			72	35		
24-Apr-02	66	E			74	33		
25-Apr-02	63	N			68	41		
26-Apr-02	63				66	40	T	
27-Apr-02	62				66	34		0.80
28-Apr-02	50				62	35		0.03
29-Apr-02	59				72	35		
30-Apr-02	68				70	43		
01-May-02	63				72	38		
02-May-02	52				62	31	T	
03-May-02	61				67	36	T	
04-May-02	61				70	41	T	
05-May-02	60				73	36		

06-May-02	67					76	39		
07-May-02	71	44				79	45		
08-May-02	66	29				78	24	T	
09-May-02	48	20				70	26		
10-May-02	57					64	36		
11-May-02	61	31				62	40		0.28
12-May-02	48	32				67	33		
13-May-02	61					77	37		
14-May-02	68					78	48		
15-May-02	69	T				75	46		
16-May-02	70	E				75	45		
17-May-02	74	M				81	41		
18-May-02	74	P.				84	41		
19-May-02	77					85	47		
20-May-02	75	G				81	52		
21-May-02	71	A				84	38		0.15
22-May-02	47	U	0.05	1.5		55	32		0.01
23-May-02	50	G				57	35	T	
24-May-02	58	E				65	30		
25-May-02	60					74	36		
26-May-02	69	B				82	44		
27-May-02	69	R				81	47		
28-May-02	74	O				85	48		
29-May-02	79	K				88	48		
30-May-02	82	E				93	50		
31-May-02	87	N				94	58		
01-Jun-02	85					93	54		0.04
02-Jun-02	75					81	49		0.03
03-Jun-02	69		0.12			69	51		0.01
04-Jun-02	57	T	0.28			75	41		
05-Jun-02	67	E				82	45		
06-Jun-02	76	M				90	52		
07-Jun-02	82	P.				91	59		
08-Jun-02	83					84	62		
09-Jun-02	80	G				80	39		
10-Jun-02	57	A				69	31		
11-Jun-02	66	U				74	38		
12-Jun-02	71	G				82	35		
13-Jun-02	77	E				85	46		
14-Jun-02	81					91	54		
15-Jun-02	83	B				91	53		
16-Jun-02	83	R				92	54		
17-Jun-02	85	O				91	56		

18-Jun-02	85	K		90	53	
19-Jun-02	86	E		89	53	
20-Jun-02	79	N		89	51	
21-Jun-02	84			91	58	
22-Jun-02	84	S		85	55	
23-Jun-02	80	T		88	50	
24-Jun-02	84	I		94	55	
25-Jun-02	86	L		97	57	
26-Jun-02	88	L		97	58	
27-Jun-02	88			95	57	
28-Jun-02	86			95	55	
29-Jun-02	87			94	54	
30-Jun-02	86			96	60	
01-Jul-02	90			98	63	
02-Jul-02	90			96	62	
03-Jul-02	86			98	67	
04-Jul-02	77			94	57	
05-Jul-02	82	T		96	61	
06-Jul-02	84	E		97	62	
07-Jul-02	86	M		99	64	
08-Jul-02	89	P.		98	64	
09-Jul-02	93			97	60	
10-Jul-02	92	G		100	56	
11-Jul-02	89	A		100	65	
12-Jul-02	90	U		101	62	
13-Jul-02	92	G		103	60	
14-Jul-02	93	E		101	60	
15-Jul-02	91			96	65	
16-Jul-02	89	B	0.48	91	67	
17-Jul-02	80	R	0.14	92	59	0.25
18-Jul-02	76	O	0.25	90	57	0.16
19-Jul-02	76	K		88	58	
20-Jul-02	79	E		91	61	
21-Jul-02	80	N		91	59	
22-Jul-02	85			95	61	
23-Jul-02	80	S		94	64	
24-Jul-02	79	T	0.03	93	62	
25-Jul-02	84	I	0.03	92	62	
26-Jul-02	78	L		86	56	0.01
27-Jul-02	62	L	0.23	91	56	
28-Jul-02	81			86	57	
29-Jul-02	78			91	51	
30-Jul-02	84			97	56	

31-Jul-02	90				97	59	
01-Aug-02	89	T			97	59	
02-Aug-02	89	E			87	69	0.01
03-Aug-02	74	M		0.10	88	55	0.04
04-Aug-02	73	P.			89	56	
05-Aug-02	77				89	56	
06-Aug-02	79	G			87	51	
07-Aug-02	74	A			89	58	
08-Aug-02	79	U			88	50	
09-Aug-02	79	G			83	49	
10-Aug-02	79	E			88	46	
11-Aug-02	83				93	48	
12-Aug-02	87	S			90	54	
13-Aug-02	83	T			90	52	
14-Aug-02	82	I			89	50	
15-Aug-02	83	L			94	51	
16-Aug-02	87	L			96	54	
17-Aug-02	89				94	57	
18-Aug-02	89	B			91	59	
19-Aug-02	89	R			93	55	0.01
20-Aug-02	82	O		0.06	88	62	
21-Aug-02	73	K		0.05	87	58	
22-Aug-02		E			84	53	
23-Aug-02	74	N			85	54	
24-Aug-02	79				86	51	
25-Aug-02	80				89	51	
26-Aug-02	83				90	51	
27-Aug-02	84				88	52	
28-Aug-02	77				88	50	
29-Aug-02	79				85	59	
30-Aug-02	70				86	53	
31-Aug-02	71				86	50	
01-Sep-02	77				89	55	
02-Sep-02	81				89	51	
03-Sep-02	83				85	55	
04-Sep-02	72			0.15	91	56	
05-Sep-02	76				87	61	T
06-Sep-02	75		50	0.25	89	61	0.06
07-Sep-02	74		49	0.60	73	58	0.11
08-Sep-02	51		48	0.55	66	52	0.34
09-Sep-02	60		42	0.25	74	45	
10-Sep-02	64				74	43	
11-Sep-02	67				78	54	

12-Sep-02	55		0.72			64	54	
13-Sep-02	63	47	0.03			68	50	
14-Sep-02	68	T				77	47	
15-Sep-02	72	E				83	48	
16-Sep-02	72	M				83	56	
17-Sep-02	68	P.	0.50			81	44	
18-Sep-02	64		0.01			69	46	1.05
19-Sep-02	50	G	0.01			68	38	
20-Sep-02	70	A				75	40	
21-Sep-02	69	U				77	44	
22-Sep-02	70	G				78	39	
23-Sep-02	72	E				79	41	
24-Sep-02	72					83	43	
25-Sep-02	77	B				83	43	
26-Sep-02	71	R				74	41	
27-Sep-02	70	O				80	42	
28-Sep-02	70	K				71	47	
29-Sep-02	58	E				73	46	0.37
30-Sep-02	54	N	0.40			66	43	
01-Oct-02	57							
02-Oct-02	53	34	0.18					
03-Oct-02	46	30	0.98	3				
04-Oct-02	44	31						
05-Oct-02	43	30						
06-Oct-02	54							
07-Oct-02	59							
08-Oct-02	63							
09-Oct-02	64							
10-Oct-02	66							
11-Oct-02	65							
12-Oct-02	65							
13-Oct-02	58							
14-Oct-02	57							
15-Oct-02	61	29						
16-Oct-02	62							
17-Oct-02	63							
18-Oct-02	62							
19-Oct-02	62							
20-Oct-02	61							
21-Oct-02	59							
22-Oct-02	57	31						
23-Oct-02	46	29	0.15					
24-Oct-02	45	29	0.03					

25-Oct-02	42	26		
26-Oct-02	36	31		
27-Oct-02	41	32		
28-Oct-02	43	31	0.16	
29-Oct-02	47	23	0.02	
30-Oct-02	38	19		
31-Oct-02	46	24		
01-Nov-02	48	19		
02-Nov-02	41	16		
03-Nov-02	35	10		
04-Nov-02	32	14		
05-Nov-02	44	15		
06-Nov-02	48	22		
07-Nov-02	47	23		
08-Nov-02	47	27	0.90	
09-Nov-02	37	27		
10-Nov-02	37	27		
11-Nov-02	33	26	0.71	
12-Nov-02	33	15		
13-Nov-02	35	18		
14-Nov-02	44	28		
15-Nov-02	42	26		
16-Nov-02	40	20		
17-Nov-02	36	21		
18-Nov-02	44	22		
19-Nov-02	45	26		
20-Nov-02	34	29		
21-Nov-02	51	30		
22-Nov-02	51	28		
23-Nov-02	52	28		
24-Nov-02	52	28		
25-Nov-02	44	20	0.03	0.5
26-Nov-02	35	12		
27-Nov-02	37	18		
28-Nov-02	42	21		
29-Nov-02	42	22		
30-Nov-02	45	23		
01-Dec-02	41	26		
02-Dec-02	43	14		
03-Dec-02	36	21		
04-Dec-02	44	26		
05-Dec-02	45	18		
06-Dec-02	46	15		

07-Dec-02	37	19		
08-Dec-02	30	19		
09-Dec-02	43	16		
10-Dec-02	41	19		
11-Dec-02	42	25		
12-Dec-02	40	25		
13-Dec-02	38	20		
14-Dec-02	38	19		
15-Dec-02	36	19		
16-Dec-02	47	17		
17-Dec-02	36	24	0.36	9
18-Dec-02	32	17	0.06	1
19-Dec-02	25	9		
20-Dec-02	31	10		
21-Dec-02	27	9		
22-Dec-02	18	8		
23-Dec-02	21	9	0.01 T	
24-Dec-02	24	9		
25-Dec-02	27	9		
26-Dec-02	23	8		
27-Dec-02	31	-2		
28-Dec-02	29	10		
29-Dec-02	26	11		
30-Dec-02	27	14	0.06	1
31-Dec-02	36	-8	0.03	0.5

2002 SUBSIDENCE REPORT

CANYON FUEL COMPANY, LLC

SUFCO MINE

by

JOHN M. BLACK

CHIEF SURVEYOR

INTRODUCTION

Canyon Fuel Company LLC, SUFCO Mine's 2002 subsidence report is an update of annual subsidence data that has been accumulated since 1976 as the former Southern Utah Fuel Company. Prior to 1985, the data was derived from conventional survey methods. Since then, photogrammetric surveys have been employed to monitor the ground movement.

During 1985, the entire SUFCO Mine property was flown to establish a set of baseline photography and a grid of surface elevations. Where possible, an elevation was photogrammetrically determined on an approximate 200-foot grid. These original x, y and z locations serve as a comparative base for determining ground movement in the succeeding years. Other lease holdings that are acquired are flown for similar baseline information. Lease U-63214 was flown in 1991 and the 150-acre modification to lease U-63214 and lease UTU-76195 were flown in 1999.

Once each year around the end of August, another set of aerial photography is obtained. A new elevation is then found at the same x and y coordinates as all the originals within all areas considered to be active. The new, or current, elevations are compared to the originals and the difference between the two is used to generate a contour map. The result is the subsidence contour map included with each annual subsidence report.

The mine subsidence map accompanying this report shows surface control monuments, overburden contours, subsidence contours, surface tension cracks, a current outline of the mine, a one year mining projection and other miscellaneous items as explained in the legend.

SUBSIDENCE HISTORY

SUFCO Mine began operations that cause surface subsidence in June, 1976. Continuous miners were used to extract coal from pillars that were developed as part of a retreating panel. The panels were approximately 650 feet wide and varied in length up to 2,500 feet. The average mining height approached 11 feet and the extraction ratio averaged about 80%.

The resulting subsidence from these continuous miner panels averaged 4 feet in the plateau areas where overburden was 900 feet thick. In areas where panel boundaries were outside the escarpment and beyond the Castlegate Sandstone, subsidence increased with decreasing overburden thickness. The maximum subsidence measured to date, 8.5 feet, occurred in one of these areas. The overburden was only 600 feet thick.

Retreat mining continued in this manner until October, 1985, when a retreating longwall system was added. Longwall panels have ranged from 550 feet to 930 feet wide and up to 18,500 feet in length. Mining heights have varied from 8.5 feet to 12 feet.

Subsidence above the longwall panels has averaged 5 feet in the center of the panels. The overburden thickness has been from 1,800 feet to 1,000 feet (except outside the escarpment where overburden rapidly decreases). The maximum measured subsidence caused by longwall mining is seven feet. This occurred in two cases; 1. An area outside the escarpment very similar to the one mentioned above for the continuous miner panel and 2. Down the center of panels that are under plateaus with 1,000 feet of overburden, but this is not typical.

DORMANT AND ACTIVE AREAS

Dormant areas are those areas that have shown no movement for several consecutive years. Yearly digitizing of these areas will not be done, but photographic coverage can be obtained in the event that a need should arise for reevaluation. These areas may not be shown on the current subsidence map.

Active areas are those currently being mined or that have evidence of movement within a reasonable time period. Active areas are digitized and evaluated for subsidence yearly, until they meet the parameters of a dormant area.

2002 SUBSIDENCE

The 2001 subsidence map (Map 1) was updated using data from current photogrammetric monitoring. Each subsidence area is labeled as an independent block. A brief description of each follows:

AREA 1

This was SUFCO Mine's first subsidence area. Undermining began in June, 1976, and continued into 1979. The area is composed of five continuous miner panels that averaged 650 feet in width. Mining height averaged 11 feet with about an 80% extraction ratio.

Subsidence ranged from 4.5 feet to a maximum of 8.5 feet. It was first detected in 1976 and continued until 1985. No surface movement was detected in this entire area from 1986 to 1989. Area 1 was not digitized for the 1990 subsidence report and is considered dormant.

AREA 2

This is another continuous miner area. The panels here were irregular shaped and the extraction ratio was modest. Undermining ceased in 1984.

Maximum subsidence has been measured at 2 feet. The area has been stable since 1985 and has not been monitored since 1989. This area is dormant.

AREA 3

This area is another continuous miner section, but the extracted area is a portion of mains with protective barriers instead of a panel. Coal recovery was moderate with mined areas which were subcritical. Undermining ceased in 1983.

Maximum subsidence was measured at 2 feet. Because of the limited extraction and subcritical areas, the subsidence occurred slowly with small changes noticeable until 1987. The area appeared stable in 1988 and 1989. It has not been monitored since 1989 and is considered dormant.

AREA 4

This subsidence area is comprised of three continuous miner panels. The mining height averaged 11 feet with a good extraction ratio. Undermining ceased in 1985.

Maximum subsidence was 5 feet with no detectable change in 1989. This area was monitored again in 1993, 1994 and 1995 with no detectable changes. This area was monitored for ten years after undermining ceased. The last detectable subsidence was in 1988. Therefore, this area will be considered dormant.

AREA 5

The four continuous miner panels that make up this area were mined from September, 1978, to November, 1981. Mining height averaged 11 feet with an 80% extraction ratio.

Maximum subsidence was 5 feet with no detectable changes from 1985 through 1991. This area has not been monitored since 1991, and will also remain dormant.

AREA 6

Area 6 is SUFCO Mine's first longwall induced subsidence area. It is comprised of nine longwall panels varying from 540 feet to 700 feet in width and 1,700 feet to 3,900 feet in length. Also, there is a section of recovered mains between two of the longwall blocks. Undermining began in Area 6 during October, 1985, and continued through the mains recovery in March, 1990.

Maximum subsidence measured in areas bounded by the plateau is five feet. There is a location on the map that shows seven feet; but this area is outside the escarpment where the overburden is only 600 feet thick. The subsided escarpment is intentional and is part of a study agreed upon by SUFCO Mine, the Division of Oil, Gas and Mining, the Bureau of Land Management and the U. S. Forest Service. This particular section of escarpment was removed from the "no subsidence zone" to study the effects of longwall mining on the escarpment.

Area 6 has shown no significant changes since 1992. It has been determined that this area is dormant.

AREA 7

Area 7 was originally planned for no subsidence. Pillars were made to support the overburden but began to fail in the north end in 1984 when the underground workings were flooded. The failures progressed towards the south and by 1986, subsidence was detected over the area.

The map shows up to seven feet of subsidence. There was no additional subsidence movement detected from 1988 to 1994. Therefore, this area will also be considered dormant.

AREA 8

Undermining this area began in June, 1983, and was sporadic until 1992. Continuous miners were used with extraction ratios over 80% and average mining heights of 10 feet. This area stayed active longer than most due to its proximity to an adjacent active longwall block.

Maximum subsidence is five feet. No noticeable vertical movement has been detected since 1993. This area is dormant.

AREA 9

This area is a longwall mining area that is composed of four panels. The first began in June, 1989 and the block was finished in January 1992. The mining height averaged about 11 feet and the maximum subsidence is five feet. There has been no indication of movement since 1996. This area is determined to be dormant.

AREA 10

Area ten is a longwall mining block that began in January 1992. Mining was completed in August 2001. The entire surface area above this block was digitized for base-line elevations during 1991. Maximum subsidence shown to date is seven feet. This area did not indicate any movement this year and will be monitored for another year to determine its stability.

The experimental mining practice area discussed under "Area 6" was extended, with regulatory approval, to the east side of the canyon under the Southwest corner of "Area 10". An extensive pre-mining survey of this location was conducted late in 1992. A detailed survey of the post-mining subsidence effects was provided in the 1993 report.

AREA 11

Area eleven is an extension of the last longwall panel in area ten. It extends into a 150-acre modification to lease U-63214. An elevation baseline was established in 1999. Mining under this area began in January 1999 with gateroad development. Longwall mining took place from May 2000 thru September 2000. Subsidence to date shows a maximum of six feet. Monitoring will continue as in area 10.

AREA 12

Area twelve is the first longwall mining block on the acquired lease UTU-76195. Do to a mine plan change at the start of 2003, this area now consists of six longwall panels. An elevation baseline was established in 1999. Gateroad development began in March 2000. Longwall mining began in September 2001. The first longwall panel mining was completed September 2002. This area is being monitored.

AREA 13

Area thirteen is the second longwall mining block on the acquired lease UTU-76195.As in Area 12 this area was also modified and now contains one longwall panel. An elevation baseline was established in 1999.

DRAW ANGLE SURVEYS

Several draw angle surveys have been performed during the past years. Completed surveys have been over continuous miner areas and have been oriented both parallel and perpendicular to the long axis of the panel. The average of all measurements is 15°. Individual measurements ranged from 10° to 21°.

New longwall draw angle data was obtained in 1995. Draw angle points were installed in May 1986, on the southern end of the first panel in "Area 6". As shown on the subsidence map, survey lines were placed parallel and perpendicular to the axis of the panel. Undermining of this panel was completed in June 1986. Measurements were taken in 1995 and indicate an angle 15.25° for the perpendicular line. An angle for the parallel line was not obtained because the mains underlying the survey line were partially extracted. These findings coincide with the average of 15° as stated above.

SUBSIDENCE TENSION CRACKS

Tension cracks have occurred above most of the subsidence areas. Most have been located by survey and are shown on the map. Their lengths vary from a few feet to five hundred feet. Most are oriented either parallel to the natural jointing pattern or to the boundaries of the underground excavation. Vertical displacement along the cracks is uncommon and horizontal displacement varies from hairline to several inches in width.

The U. S. Forest Service completed a tension crack study in 1978. They monitored twenty-two different cracks (located in Area 1) with widths varying from 1/8 inch to six inches. Results show that most cracks self-heal, or close, from 13% to 100% of their original width.

DETAILED LONGWALL SUBSIDENCE PROFILE

In 1998 a project was initiated to monitor longwall subsidence in relation to the advancing face. Preparation consisted of first installing two monitoring points outside the subsidence area. Then two base lines were established one 3000 feet long running parallel down the center and the second 1300 feet long perpendicular across the 967 feet wide panel. Markers were installed along these lines on 100 feet spacing using approximately 2.5 feet long rebar with an aluminum cap or a hardened nail drilled into the exposed rock. Initial horizontal and vertical readings were obtained by shooting each marker with a Topcon GTS-3 distance meter from the monitoring points.

Monitoring was done weekly to gather new readings on markers behind and up to 500 feet ahead of the advancing face. The data collected reveals that vertical movement starts approximately 150 feet ahead of the face with 15 hundredths of a foot of subsidence at the face. It then drops off quickly to 4 feet at 600 feet behind the face and gradually levels off at 4 to 5 feet. Horizontal readings indicate the ground initially moves about 30 hundredths of a foot away from the face, then back toward the face 80 hundredths of a foot.

CONCLUSION

Areas 1, 2, 3, 4, 5, 6, 7, 8, 9 are all considered to be dormant. Photographic coverage can be obtained if circumstances deem it necessary. Longwall mining of area 10 was completed in August 2001. There was active longwall mining in area 12 causing subsidence. Yearly monitoring of Areas 10, 11, and 12 will continue until it has been determined that subsidence has ceased (on an area-by-area basis).

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Vegetation Monitoring of the Waste Rock Disposal

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17 July 2002

INTRODUCTION

This report describes the 11*th* of July 2002 sampling and monitoring of Canyon Fuels Company -- Sufco Mine (SUFCO) waste rock disposal (WRD) site and Demonstration Plot (DEM). The WRD site was sampled previously during 1992, 1994, 1995, 1996, 1998, 2000, and 2001. This year represents the eighth year of monitoring the WRD and the fifth year of sampling and monitoring the DEM plot.

The WRD site is composed of three parts; the smooth east side first lift, a pitted second lift contiguous to the west, and a third pitted lift contiguous to the west, which was evidently treated to reseeding in 1999. A fourth lift is now being filled with waste rock and will be reclaimed subsequently and the status of the revegetation included in subsequent reports. The DEM plot is located immediately east of the SUFCO main office building at the Convulsion Canyon mine. The currently reclaimed lifts of the WRD represent two different treatments and at least three different seed mixtures. The lifts have been sampled separately and the results are compared below. The second, pitted lift was treated and reclaimed in 1994, the third lift in 1998. Comparison data for the three lifts are included in Table 1 and Table 2 respectively. Results of the DEM measurements are included in Table 3. Comparison data for 1992, 1994, 1995, 1996, 1998, 2000, 2001, and 2002 WRD, and the 1992 reference site are included in Table 4.

Vegetation was measured during 2002, when it should have been at or near the height of the growing season, but the current year has been one of historic low precipitation, which is reflected in the vegetative cover. The DEM plot has suffered most from the drought. It is situated on a steep hillside, and was essentially brown and in dormant condition when measured.

Methods

Sampling techniques complied with Division of Oil Gas and Mining (DOGM) vegetation guidelines (February 1992), and were discussed with Paul Baker (Reclamation Specialist DOGM) in 1992. Sampling was conducted by Drs. Stanley L. Welsh and Ronald J. Kass of Endangered Plant Studies.

Percent cover was estimated by the ocular method for all plots. A 75 m tape was stretched across the longest axis of each treatment type on the WRD and on the DEM. Random numbers were generated and the corresponding numbers were used to locate the 1m ^{2} quadrats along the 75 m transect. After sampling a minimum of 15 quadrats, sample adequacy was computed; minimal sample size for the each WRD treatment was N=15. A t-value=1.645 and d-value=0.1 were used as coefficients to calculate sample adequacy.

Results

WRD-First Lift--Treatment Smooth (2002)

Total mean plant cover was 59.5% (s = 11.2) N(min)=9. Grasses accounted for 58.8 of the total vegetative cover, or 98.8% of the species composition. The remaining cover and composition was accounted for by forb species. Shrubs contributed 0.5% to the cover and <0.1% of the composition (Table 1).

WRD-Second Lift--Treatment Pitted (2002)

Total mean plant cover was 56.5%(s = 3.9) N(min=1). Grasses accounted for 50% comprising 76.3% of the species composition. Forbs accounted for 3.0%, representing 4.5% of the species composition, and shrubs contributed 12.5%, or 19.0% of the species composition (Table 2).

WRD-Third Lift--Treatment Pitted (2002)

Total man plant cover was 56 (s = 9.5) N(min)=2. Grasses accounted for 36.0% of the total live cover and 64.1% of the species composition. Forbs represented 6.0% of the cover and 10.5 percent of the species composition. Shrubs contributed 14% of the cover and 25% of the species composition (Table 3).

DEM-Demonstration Plot (2002)

Total mean plant cover was 47.3% (s = 11.37) N(min)=9. Grasses accounted for 42.5% of the cover, and represented 89.6% of the species composition. Forbs accounted for only 2.5% of the cover and 5.2% of the species composition. Shrubs accounted for 2.3% of the cover and 4.8% of the species composition (Table 4).

Table 1. Percent cover and species composition of WRD 1st lift, smooth (2002).

	% cover	% composition
Bare ground	17.8	
Litter	22.7	
Grasses		
Elymus cinereus	8.5	14.2
Elymus lanceolatus	4.0	6.7
Elymus smithii	44.3	74.5
Elymus spicatus	2.0	3.4
Grass totals	58.8	98.8
Forbs		
Machaeranthera canescens	0.2	<0.1
Melilotus officinalis		
Penstemon strictus		
Sphaeralcea coccinea		
Viguiera multiflora		
Forb totals	0.2	T
Shrubs		
Rosa woodsii	0.5	<0.1
Shrub totals	0.5	<0.1
Live Cover Total	59.5	100.0

Table 2. Percent cover and species composition for WRD second lift, pitted (2002).

	% cover	% composition
Bare ground	17.5	
Litter	17.0	
Grasses		
Agropyron cristatum	1.0	1.5
Dactylis glomerata	9.5	14.5
Elymus cinereus	8.0	12.2
Elymus lanceolatus	4.0	6.1
Elymus smithii	16.5	25.2
Elymus spicatus	11.0	16.8
Grass totals	50.0	76.3
Forbs		
Achillea millefolium		
Astragalus drummondii		
Cirsium vulgare		
Linum perenne	2.5	3.8
Viguiera multiflora	0.5	>0.7
Forb totals	3.0	4.5
Shrubs		
Amelanchier utahensis		
Artemisia tridentata	9.5	14.5
Chrysothamnus nauseosus	3.0	4.5
Shrub totals	12.5	19.0
Live Cover Totals	65.5	99.8

Table 3. Percent cover and species composition for WRD third lift, pitted (2002).

	% cover	% composition
Bare ground	28.5	
Litter	12.5	
Grasses		
Agropyron cristatum	3.5	6.3
Bromus carinatus		
Elymus hispidus	4.0	7.2
Elymus junceus	0.5	0.8
Elymus lanceolatus	22.0	39.3
Elymus smithii	4.0	7.2
Elymus spicatus	2.0	3.5
Grass totals	36.0	64.1
Forbs		
Achillea millefolium	2.0	3.5
Linum perenne	2.0	3.5
Melilotus officinalis		
Penstemon strictus	2.0	3.5
Forb totals	6.0	10.5
Shrubs		
Artemisia tridentata		
Chrysothamnus nauseosus	14.0	25.0
Shrub totals	14.0	25.0
Live Cover Totals	56.0	99.8

Table 4. Percent cover and species composition for DEM-Demonstration plot (2002).

	% cover	% composition
Bare ground	32.0	
Litter	19.0	
Grasses		
Agropyron cristatum	9.0	19.0
Bromus inermis	1.3	2.7
Elymus cinereus	11.3	23.9
Elymus hispidus	7.0	14.8
Elymus junceus	2.5	5.3
Elymus lanceolatus	9.3	19.6
Elymus smithii	1.4	2.9
Stipa hymenoides	0.7	1.4
Grass totals	42.5	89.6
Forbs		
Linum perenne	1.8	3.8
Medicago sativa	0.7	1.4
Forb totals	2.5	5.2
Shrubs		
Chrysothamnus nauseosus	0.3	0.7
Eriogonum corymbosum	1.7	3.6
Gutierrezia sarothrae	0.3	0.7
Shrub totals	2.3	4.8
Live Cover Totals	47.3	99.8

Table 5. Percent cover and species richness for 1st lift 1992-1998, 2nd lift 1995-1998, and 1992 reference site.

Years Variables	1992 1st li	1994 1st li	1995 2nd li	1995 1st li	1996 2nd li	1996 1st li	1998 2nd li	1998 1st li	Ref. site
Bare ground	35.4	28.6	31.8	16.7	26.7	21.0	20.3	14.5	8.8
Litter	8.3	12.2	8.3	12.3	20.4	32.9	8.7	8.0	24.0
Grasses	45.1	30.3	36.7	68.7	41.9	44.9	51.9	76.5	30.1
Forbs	11.2	27.0	20.9	1.1	8.1	0.8	8.3	0.0	0.2
Shrubs	0.0	2.0	2.3	1.0	2.9	0.4	10.8	0.5	36.8
Totals	56.3	59.4	59.7	71.0	52.9	46.1	71.0	77.1	67.2
Species richness	14	16	20	19	13	6	14	5	7

Table 6A. Percent cover and species richness for 1st, 2nd, and 3rd lifts, 2000 and 2001.

Years Variables	2000 1st lift	2001 1st lift	2000 2nd lift	2001 2nd lift	2000 3rd lift	2001 3rd lift
Bare ground	10.7	15.33	24.6	14.80	41.0	22.86
Litter	27.4	20.67	16.0	19.27	10.6	12.00
Grasses	57.7	62.00	42.9	42.53	26.6	54.66
Forbs	3.9	1.99	12.1	15.72	21.3	8.87
Shrubs	1.0	0.00	4.3	7.67	0.6	1.6
Totals	61.9	63.99	59.4	65.92	48.5	65.14
Species richness	13	10	20	16	11	12

Table 6B. Percent cover and species richness for 1st, 2nd, and 3rd lifts, 2002.

Years Variables	2002 1st lift		2002 2nd lift		2002 3rd lift	
Bare ground	17.8		17.5		28.5	
Litter	22.7		17.0		12.5	
Grasses	58.8		50.0		36.0	
Forbs	0.2		3.0		6.0	
Shrubs	0.5		12.5		14.0	
Totals	59.5		65.5		56.0	
Species richness	6		10		10	

Table 7. Percent cover and species richness for Demonstration plot, 1996-2001.

Variables	1996	1998	2000	2001	2002
Bare ground	15.0	15.4	26.1	15.00	32.0
Litter	36.0	12.8	17.7	15.33	19.0
Grasses	39.7	64.3	50.8	58.00	42.5
Forbs	4.5	3.7	2.3	5.00	2.5
Shrubs	4.3	3.7	3.1	2.67	4.8
Percent live cover	49.0	71.6	56.2	69.67	47.3

Discussion

The 13 July 2002 determinations of plant cover and species richness follows a record-breaking dry growing season. The vegetative cover reflects to a large extent the weather regime of the current year. Despite the drought conditions the two different treatments, smooth for the 1st lift, and pitted for the 2nd and 3rd lifts have responded well in the reclamation attempt. Total live cover for the first lift vegetation continues at a high level, starting at 56.3% in 1992, 59.4% in 1994, 71.0% in 1995, falling to 46.1% in the drought year of 1996, and rising to 77.1% during the wet spring of 1998. Despite the dry spring of 2000 the percent live cover stood at 61.9 percent, a second dry year in 2001 stood at almost 64 percent, and the exceptionally dry year of 2002 measured some 59.5 percent. The trend over the eight measurements has averaged slightly below that of the reference site's 67.2%, whose vegetative cover would be expected to vary with the weather pattern also.

Total live cover for the second lift was 59.7% when first measured in 1995, dropped to 52.9% during the drought year of 1996, and responded at 71.0% during the wet spring of 1998. During 2000 and 2001, both years of dry spring weather, the second lift vegetative cover measured 59.4 and 65.92 respectively. And, in spite of the drought of 2002, the vegetative cover has remained remarkably near that of 2002, standing at 65.5 This lift too averages near the reference site total live cover.

Lift 3 was first measured for vegetative cover in 2000, and stood at 48.5 in that year, 61.4 in 2001, and 56.0 in 2002. The more freshly dimpled surface, which evidently held the minimal precipitation received for a longer period had the best appearance overall of the three lifts in 2002. Grasses were greener and species richness most closely approached that of preceding years than for the other lifts.

The east portion, i.e., Lift 1, was graded to a smooth surface prior to planting before 1992--that of Lifts 2 and 3, were treated to a basin-lifting technique that resulted in a dimpled surface. Effects of the 1996 drought were especially apparent on the smooth surface of Lift 1, but recovery during the wet year of 1998 was readily apparent, and the site has continued to gain or remain relatively stable during 2000, 2001, and 2002. Both kinds of treatment have responded well in spite of the drought interludes of 1996, 2000, 2001, and 2002. Seed mixtures were evidently different for each of the lifts. Shrubs are doing better on the dimpled 2nd and 3rd lifts than on the smooth first lift treatment, on which grasses provide most of the live cover. Only the first lift treatment had lower species richness than for the reference site in 1998, but exceeds the reference site in richness in both 2000 and 2001.

A possible solution to increasing shrubs in the long term, as emphasized in the 1995 and 1996 reports, might involve harvesting of mature inflorescences of big sagebrush and perhaps rabbitbrush from below the reference site and broadcasting them on both lifts one and two. That should provide an abundant seed source on site. Substantial germination of sagebrush seeds might increase the potential for shrub intermix among the other grass and forb vegetation. Lack of forbs on the first lift quadrats is a result of sampling in large part, but represents the continued decline in forbs following their initial success. Such a decline is predictable.

The third lift, dimpled as was the second, evidently was reclaimed with a different seed mix than was utilized on either lifts one or two. Yellow sweet clover formed a large percentage of the total live cover on that lift in 2000, but was less important in 2001 and was missing in the 2002 survey. This lift is recovering

nicely, however.

The demonstration site, on a steep slope (58%) immediately east of the loadout area in Convulsion Canyon, was measured this year for the fourth time. Despite the steepness of the slope and the use of very raw substrate, the success of the revegetation attempt is readily apparent. Total live cover percentage was measured at 49.0 in 1996, 71.6 during the wetter than normal year 1998, 67.2 in the dry year of 2000, and 69.7 in the relatively dry year of 2001. Drought of 2002 affected the demonstration site more dramatically than for the waste rock lifts 1, 2, and 3. Total live cover, which was difficult to determine because of the parched condition of the plants, was only 47.3%, a distinct decline from even the first year of survey. Reclamation of this slope proceeds well. There is still evidence of creep of the soil mantle at the upper edge of the slope, but general stability of the remainder continues to be encouraging. Establishment of the native buckwheat, *Eriogonum corymbosum*, is of interest. This plant is evident as a dominant on the adjoining, untreated slope. It is a common component of vegetation along the coal measures in Utah.

PINES TRACT VEGETATION STUDY

Prepared by
Keith W. ZoBell
July 26,2002

The main purpose of the "Pines Tract Vegetation Study" is to determine if coal mining has had any affect on the "Link Canyon Trial Columbine" (*Aquiligia flavenscens var. rubicunda)* and the riparian areas within the Pines Tract coal lease.

On July 17, 2002 the Pines Tract area was visited by Keith W. ZoBell (Environmental Specialist), and Mike Davis (Mining Engineer for Canyon Fuel Company, LLC- SUFCO Mine). The purpose of this trip was to revisit all photo points that have been established, and to retake photos at each site and to determine the general vegetative growth and plant vigor condition at each photo site.

The weather records showed that the Pines Tract Area continued to receive much below average precipitation during the winter on 2001-2002. This is the fourth year that the area has been in a drought condition. This drought condition continues to exhibit itself in reduced flows in the seeps, springs and streams as well as a reduction in vigor and growth of the vegetation in the general area. The small pond in the "Grotto" area where photo points 1,2,3,8&9 are located was completely dry (See photo section). This is the first time this has been observed in almost twenty years that I have been visiting this area. The Pines tract was grazed first in the grazing sequence this year. Due to the shortage of water grazing was very heavy in and around all water sources.

At photo points 1,2&3 the growth of the Link Canyon Trail Columbine was poor to fair. The plants that were growing where they would receive some shade had some inflorescence growth of 8-10 inches. The plants that received little or no shade had poor inflorescence growth to none with a total plant growth of 3-6 inches. At the "Hanging Fern Gardens" at photo point 8 there was no live moss and only a few 6-8 inch ferns still living. At photo point 9 there was some moss and short fern along some of the moist cracks in the cliff face. The total living moss and fern are only a fraction of what existed before the start of the drought.

In Box Canyon at photo point 6 the riparian area had been heavily grazed. All plants and forbs were grazed down to ground level including all grass species, Juncus species, with the shrubs of Rose, Potentilla and Aspen saplings having all current and last years growth removed. Since the cattle had been removed from the area approximately ten days earlier, there has been some regrowth along the narrow moist riparian area of the stream of the Carex species. At photo point 7 the stream was dry and all the vegetation had been heavily grazed. No evidence of any living Link Canyon Trail Columbine plants could be found at this site. At photo point 5 the stream was dry. The area had been heavily grazed. Two Link Canyon Trail Columbine plants were found. They both had very small crowns with vegetative growth of 1-2 tall and no inflorescence. There was no

riparian vegetation at this site. At photo point 4 the Link Canyon Trail Columbine plants are growing in a partially shaded area. The plants did not show any evidence of having been grazed. This is probably due to the plants growing some distance from water. The plants had some inflorescence with a foliage growth of 6-8 inches.

At photo point 10 an enclosure has been built around the moist riparian area. The area outside the enclosure has been heavily grazed. All grasses, carex, and forbs have been grazed to the point that identification could not be made. The sagebrush and Rose shrubs have also been heavily grazed. There has been some regrowth in the moist riparian area. A water pump has been installed in the riparian area to pump water up and out of the canyon for the grazing livestock.

Overall the vegetation in the study area has low growth and vigor. This is probably due to this being the fourth consecutive year of drought conditions and very little moisture being received during the winter of 2001-2002. If the drought continues we can expect to see a decline in the vegetative growth, vigor and density in the study area. No detrimental vegetative affect could be attributed to mining. These sites should be visited again next year at approximately the same time of year so as to duplicate the growth and vigor of the plants.

Photo Point 1A

Photo Point 1B

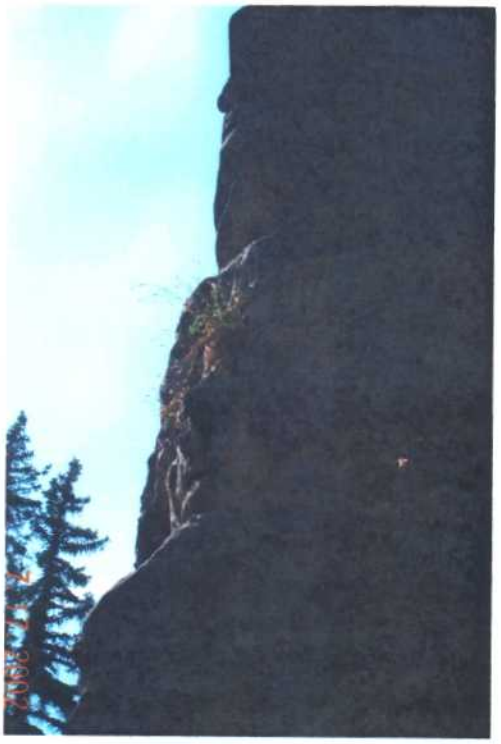


Photo Point 1C

Photo Point 2

Photo Point 3

Photo Point 8

Photo Point 9A

Photo Point 9B

Dry Grotto

Photo Point 6

Photo Point 7

Photo Point 5

Photo Point 4

Photo Point 10

Photo Point 10 Close Up

Pump at Photo Point 10

- CONFIDENTIAL INFORMATION -

2002 Raptor Survey report has been removed from the Annual Report and is located in the Canyon Fuel Company, LLC – Sufco Mine Confidential MRP Binder located at:

Division of Oil, Gas & Mining
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Changes Noted During 2002 Water Monitoring

Pines 303

Since the summer of 2001, the flow at spring Pines 303 has diminished to the point that it is no longer measurable. This spring is located to the north of any longwall mining and issues from the Blackhawk Formation about 100 feet above the mined coal seam. The spring is located in the bottom of the Box Canyon drainage and issues only a few feet above the creek bed. Flows from this spring have been measured at slightly greater than 3 gpm to less than 1 gpm. It was noted in the Pines Tract EIS that the flow from the spring appeared to be influenced by seasonal precipitation events. It was also predicted in the EIS that this spring could be impacted by mining and subsidence in the Pines Tract since it is fed by a channel sandstone located just above the coal seam. Longwall mining has occurred to the south and slightly up dip of the spring.

The cause of the change in discharge from Pines 303 may or may not be related to mining induced subsidence. The Pines Tract has been experiencing below normal precipitation totals for the last several years. Many of the springs in the Sufco mine area have shown steady declines in flow over the past several years. These springs are located both inside and outside areas that have been undermined. Sufco will continue to monitor Pines 303 as required by the M&RP and note and report when flow returns to the spring. Since the spring is located near the bottom of the creek drainage where the Box Canyon Creek is perennial, it is anticipated that the reduction in spring flow will not adversely affect wildlife or riparian vegetation.

Pines 407

Monitoring point 407 is located in the main fork of Box Canyon Creek just upstream of the confluence of the main and east fork of Box Canyon Creek. The monitoring point consists of a 3-inch fiberglass flume equipped with stilling well. The flume captures all of the surface flows in the main fork. A transducer with a data logger has been placed in the stilling well and records the elevation of the head of the water as it passes through the flume. The transducer has been calibrated to correlate with the measuring veneer at the mouth of the flume throat. Head measurements are recorded by the transducer once an hour. The transducer does not function from early November through early April since the creek is typically frozen or ice covered.

In the late fall of 2001, a steady increase in flow was noted in the main fork (Figure 1). The flow of the creek at Pines 407 appeared to have continued to increase through the winter of 2001 and 2002 since the initial and sustained flows measured at the site were above the previous year's flows (Figure 2). The flow measured at Pines 407 in the summer of 2001 was generally between 40 and 50 gpm while during the summer of 2002, the flow was generally between 100 and 150 gpm. This appears to indicate an increase of two- to three-fold in the stream flow.

Springs monitored in the Main Fork of Box Creek to not appear to indicate a significant increase in discharge over the same period of time when flow appears to have increased in the creek at Pines 407. Sufco plans to investigate the section of the creek between Pines 407 and the base of the Castlegate Sandstone, where most of the springs are

located. The purpose of the investigation will be to determine the source of the increased discharge to the creek.

The increase in flow in the Main Fork of the Box Canyon is not entirely unexpected since the Pines EIS addressed the issue of increasing the hydraulic conductivity of the formations overlying the coal seam as the coal is mined and the area subsided. The area south of the creek between the confluence of the Main and East Forks and to the east of the upper Main Fork has been longwalled. It is likely that the flows in the Main Fork of the Box Canyon will return to "normal" as the increased discharge from the perched aquifers dissipates and these aquifers equilibrate to their new hydrologic conditions. Sufco will continue to monitor and report the flow of the creek monitored at Pines 407. The increased flow does not appear to have caused noticeable impacts to the stream bed since the stream is well armored with large cobbles and boulders, is on or very close to bedrock, and the stream frequently experiences significantly greater periodic flows related to runoff events from spring snow melt and from heavy summer thunderstorms.

FIGURE 1
PINES 407 AVERAGE DAILY FLOW 2001

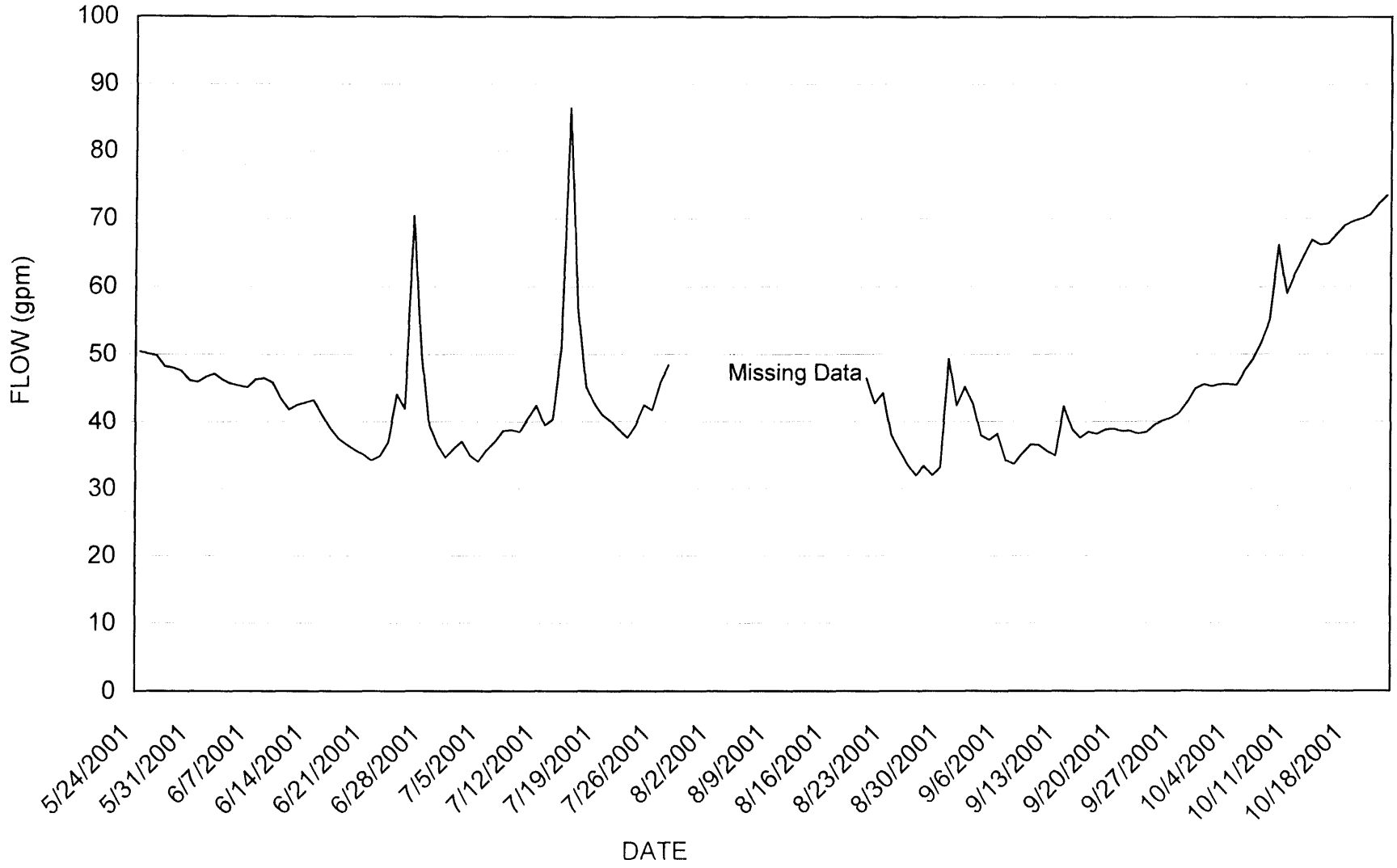
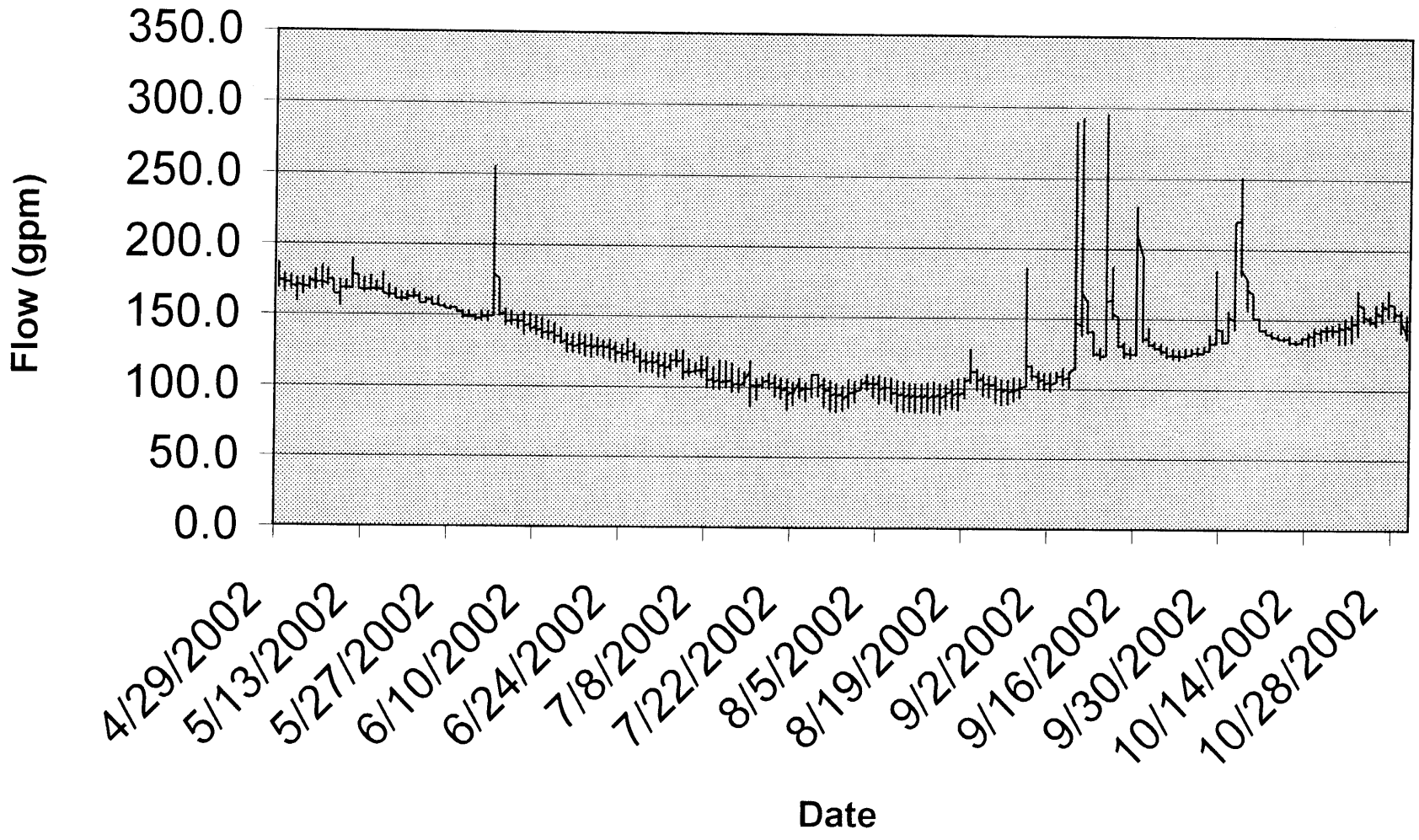


FIGURE 2
PINES 407 DAILY FLOW 2002



APPENDIX C

Legal Financial, Compliance and Related Information

Annual Report of Officers
As submitted to the Utah Department of Commerce

Other change in ownership and control information
As required under R645-301-110

CONTENTS

Canyon Fuel Company, LLC
2002 Annual Report

Officers and Directors

The following lists describe the officers and directors of Canyon Fuel Company, LLC, Arch Western Resources, LLC, Arch Coal, Inc., Itochu Corporation, and Itochu Coal International, Inc. The addresses for the officers, directors, representatives to the management board listed are the same as those of the respective business entities as listed above, for which the individuals are officers, directors or representatives.

ADDRESSES:

Canyon Fuel Company, LLC
6955 South Union Park Center, Suite 540
Midvale, UT 84047

Arch Western Resources, LLC
City Place One, Suite 300
St. Louis, MO 63141

Arch Coal, Inc.
City Place One, Suite 300
St. Louis, MO 63141

Delta Housing, Inc.
515 South Flower Street
Los Angeles, CA 90071

Atlantic Richfield Company
515 South Flower Street
Los Angeles, CA 90071

ITOCHU Coal International Inc.
555 17th Street, Suite 845
Denver, Colorado 80202

ITOCHU Corporation, 5-1
Kita-Aoyama 2-Chome
Minato-ku, Tokyo 107-77, Japan

CANYON FUEL COMPANY, LLC:

Directors:

Robert W. Shanks Effective: 06/01/1998	Chairman
Masayoshi Araya Effective: 06/01/2001	
Yuzo Hirono Effective: 12/14/1999	
Steven F. Leer Effective: 06/01/1998	
Kenneth G. Woodring Effective: 12/01/2000	
Thomas A. Lockhart Effective: 02/24/2003	
John W. Eaves Effective: 12/01/2000	Alternative Representative
Joe Y. Nakazawa Effective: 06/01/2001	Alternative Representative
Tsutomu Niwa Effective: 10/09/2001	Alternative Representative

Officers

Richard D. Pick Effective: 06/01/1998	President, Chief Executive Officer and General Manager
Robert J. Messey Effective: 10/09/2001	Chief Financial Officer
James E. Florczak Effective: 05/25/1999	Vice President, Finance
John W. Eaves Effective: 06/23/1998	Vice President, Marketing
Robert G. Jones Effective: 03/08/2000	Vice President, General Counsel and Assistant Secretary

Janet L. Hogan — Secretary
Effective: 10/11/2000

William H. Rose — Assistant Secretary
Effective: 06/01/1998

ARCH COAL, INC.: 2/03/03

Directors:

James R. Boyd — Chairman
Effective: 07/01/1997

Frank M. Burke
Effective: 09/07/2000

Robert G. Potter
Effective: 04/26/2001

Theodore D. Sands
Effective: 02/25/1999

Michael A. Perry
Effective: 09/28/1998

Douglas H. Hunt
Effective: 04/04/1995

Steven F. Leer
Effective: 07/1/1997

James L. Parker
Effective: 07/01/1997

Officers:

Steven F. Leer — President and Chief Executive Officer
Effective: 07/1/1997

Kenneth G. Woodring — Executive Vice President-Mining Operations
Effective: 07/01/1997

C. Henry Besten, Jr. — Vice President - Strategic Marketing
Effective: 07/01/1997

Larry R. Brown Effective: 07/01/1997	Vice President & Chief Information Officer
John W. Eaves Effective: 07/01/1997	Executive Vice President/COO
David B. Peugh Effective: 07/01/1997	Vice President - Business Development
Robert W. Shanks Effective: 07/01/1997	Vice President - Operations
William H. Rose Effective: 04/22/1998	Vice President - Tax Planning
Robert J. Messey Effective: 12/1/2000	Vice President, Chief Financial Officer
Robert G. Jones Effective: 10/16/2000	Vice President, General Counsel and Secretary
James E. Florczak Effective: 08/17/1998	Vice President, Finance, Treasurer
Deck S. Slone Effective: 04/26/2001	Vice President
Bradley M. Allbritten Effective: 03/1/2000	Vice President, Marketing
Janet L. Hogan Effective: 10/16/2000	Assistant Secretary
John W. Lorson Effective: 04/9/1999	Controller
Charles David Steele Effective: 06/22/1998	Internal Auditor
Shiela Feldman Effective: 02/03/2003	Vice President, Human Resources

ARCH WESTERN RESOURCES, LLC 1/10/03

Directors:

Patrick A. Kriegshauser
Effective: 05/07/98

David B. Peugh
Effective: 05/07/98

Jeffry N. Quinn
Effective: 05/07/98

Officers:

Robert W. Shanks Effective: 06/28/98	President - Operations
David B. Peugh Effective: 05/17/98	Vice President
William H. Rose Effective: 05/07/98	Assistant Secretary
Robert G. Jones Effective: 03/01/00 and 6/2/98	Vice President and Assistant Secretary
Janet L. Hogan Effective: 3/17/98	Secretary
James E. Florczak Effective: 05/15/98	Vice President, Finance, Treasurer

ITOCHU Coal International Inc. Representatives to the Management Board:

Akio Shigetomi
Effective: 11/30/1996

Masayoshi Araya
Effective: 11/30/1996

Yuzo Hirono
Effective: 12/31/1999

Alternates:

Tsutomu Niwa
Effective: 6/01/2001

Yutaka Nakazawa
Effective: 12/20/1996

ITOCHU CORPORATION 9/1/02

Name	Title	Date of Appointment
Minoru Murofushi	Chairman	April 1998
Masahisa Naitoh	Vice Chairman	April 2000
Uichiro Niwa	President, CEO	April 1998
Hiroshi Sumie	Executive Vice President	April 2000
Makoto Kato	Executive Vice President	April 2001
Yushin Okazaki	Executive Vice President	April 2001
Sumitaka Fujita	Executive Vice President	April 2001
Mitsuaki Fukuda	Sr. Managing Director	April 2000
Akira Yokota	Sr. Managing Director	April 2001
Kouhei Watanabe	Managing Director	April 2002
Hiroshi Ueda	Managing Director	April 2002
Motonori Toyota	Managing Director	June 2001

ITOCHU COAL INTERNATIONAL INC.

Masayoshi Araya Effective: Dec. 1999	Chairman of the Board
Yuzo Hirono Effective: Dec. 1999	President and Chief Executive Officer
Tsutomu Niwa Effective: June 1996	Chief Financial Officer
Dietz Fry Effective: March 1997	Vice President, Finance and Administration
Yutaka Nakazawa Effective: Dec. 1996	Vice President Commercial and Secretary
Hiroshi Akiba Effective: Feb. 2000	Assistant Secretary

APPENDIX D

Mine Maps

As required under R645-302-525-270

CONTENTS

Mining Progress Map 2002

APPENDIX E

Other Information

In accordance with the requirements of R645-301 and R645-302

CONTENTS

None