



Canyon Fuel Company, LLC  
SUFCO Mine  
397 South 800 West  
Salina, UT 84654  
(435) 286-4880 Fax: (435) 286-4499

May 25, 2004

Mr. Mark Page  
Regional Engineer  
Utah Division of Water Rights  
P. O. Box 718  
Price, Utah 84501-0718

*Incoming  
C/041/0002  
Copy Daron, Susan  
Steve Flake, PFO,  
DAM*

Re: Joint Permit Application for repair of subsidence cracks on the East Fork of Box Canyon  
in Sevier County

Dear Mr. Page:

Enclosed is a Joint Permit Application Form, supporting maps and drawings describing work which Canyon Fuel Company, LLC, would like to undertake in the East Fork of Box Canyon this year. Canyon Fuel Company, LLC proposes to repair subsidence cracks in the creek so that it can flow uninterrupted. Baseline data and monitoring reports of flows are enclosed.

Mining activity has occurred under this area resulting in small fracture and buckled zones where flow disappears for short distances and reappears down stream. The cracks will be repaired to ensure continuous flow of the stream.

Your help in getting the permit as soon as possible is greatly appreciated.

Please call Chris Hansen (435) 448-2669 or Mike Davis (435) 286-4421 of my staff if you have any questions.

Sincerely,

CANYON FUEL COMPANY, LLC  
SUFCO Mine

*Kenneth E. May*  
Kenneth E. May  
Mine Manager

cc: Mary Ann Wright – DOGM  
Tom Lloyd – Manti-LaSal Forest

*mon*  
JUN 01 2004 6:11/07

**JOINT PERMIT APPLICATION FORM**  
**U.S. ARMY CORPS OF ENGINEERS - FOR SECTIONS 404 AND 10**  
**UTAH STATE ENGINEER'S OFFICE - FOR NATURAL STREAM CHANNELS**

Application Number \_\_\_\_\_ / \_\_\_\_\_

(Assigned by): \_\_\_\_\_

Corps \_\_\_\_\_

State Engineer \_\_\_\_\_

Applicant's Name (Last, First M.I.) <b>Canyon Fuel Company, LLC Sufco Mine</b>		Authorized Agent <b>Kenneth E. May</b>		Telephone Number and Area Code <b>(435) 286-4400</b>	
Applicant's Address (Street, RFD, Box Number, City, State, Zip) <b>397 South 800 West Salina, Utah 84654</b>					
<b>PROJECT LOCATION</b>					
Quarter Section(s) <b>W1/2, N1/2</b>	Section <b>11, 14</b>	Township <b>21 South</b>	Range <b>5 East</b>		Base & Meridian <b>Salt Lake</b>
County <b>Sevier</b>	Watercourse to be altered <b>East Fork of Box Canyon</b>		Check one: <input type="checkbox"/> Within City Limits <input checked="" type="checkbox"/> Outside City Limits List town or nearest town: <b>Emery</b>		
Project location or address: <b>as above</b>					
Brief description of project: <b>Repair of subsidence cracks in the stream channel where they occur.</b>					
Purpose (justification) of project: <b>Sufco has undermined the East Fork of the Box Canyon with longwall panel 3LPE. Portions of the canyon are within the subsidence zone. Cracks and separation of sandstone units along bedding planes have occurred in portions of the bedrock where it forms the channel floor. Stream flow has entered some of these cracks and bedding planes, is diverted down into or through the rock units for a few inches to a few feet, and then daylighted again where it comes into contact with shale, siltstone, or unfractured beds. The proposed project would include removing some of the broken sandstone rocks, using hand tools, to expose fresh rock surfaces and placement of powdered, granular, and/or chipped bentonite in the cracks and bedding planes to prevent water from leaving the surface. A non-toxic expanding foam may also be used.</b>					
Is this a single and complete project or is it part of a larger project, continuing project, or other related activities? If so, please describe the larger project or other related activities. <b>This would be a single and complete project.</b>					
If project includes the discharge of dredged or fill material into a watercourse or wetland:  Cubic yards of material: <b>No dredged or fill material will be discharged</b>  Acreage or square footage of waters of the United States, including wetlands, affected by the project:  Source and type of fill material:					

Alternatives (other ways to accomplish the project purpose):

Alternative methods could include allowing the cracks and bedding plane separations to fill in naturally over time with sediment and organic debris. Other methods could include lining the entire effected portions of the stream with an impermeable blanket of bentonite or other impermeable material.

**COMPLETE** names and addresses of adjacent property owners (immediately upstream and downstream) or other individuals who may be affected by this project:

United States Department of Agriculture  
Manti-LaSal National Forest  
599 Price River Drive  
Price, Utah 84501

List other authorizations required by Federal, state or local governments (i.e. : National Flood Insurance Program), and the status of those authorizations.

This action would be performed in accordance with the mine's Mining and Reclamation Plan approved by the Utah Division of Oil, Gas and Mining. This alteration permit will require the concurrence of the U.S. Forest Service.

Estimated starting date of project:

6/1/2004

Estimated completion date:

7/31/2004

(If project has already been partially or totally completed, indicate date of work. Indicate existing work on drawings).

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in the application, and that to the best of my knowledge and belief, such information is true, complete and accurate. I further certify that I possess the authority to undertake the proposed activities or am acting as the duly authorized agent of the applicant.

Signature of Applicant \_\_\_\_\_ Date \_\_\_\_\_

I hereby certify that \_\_\_\_\_ is acting as my agent for this project.

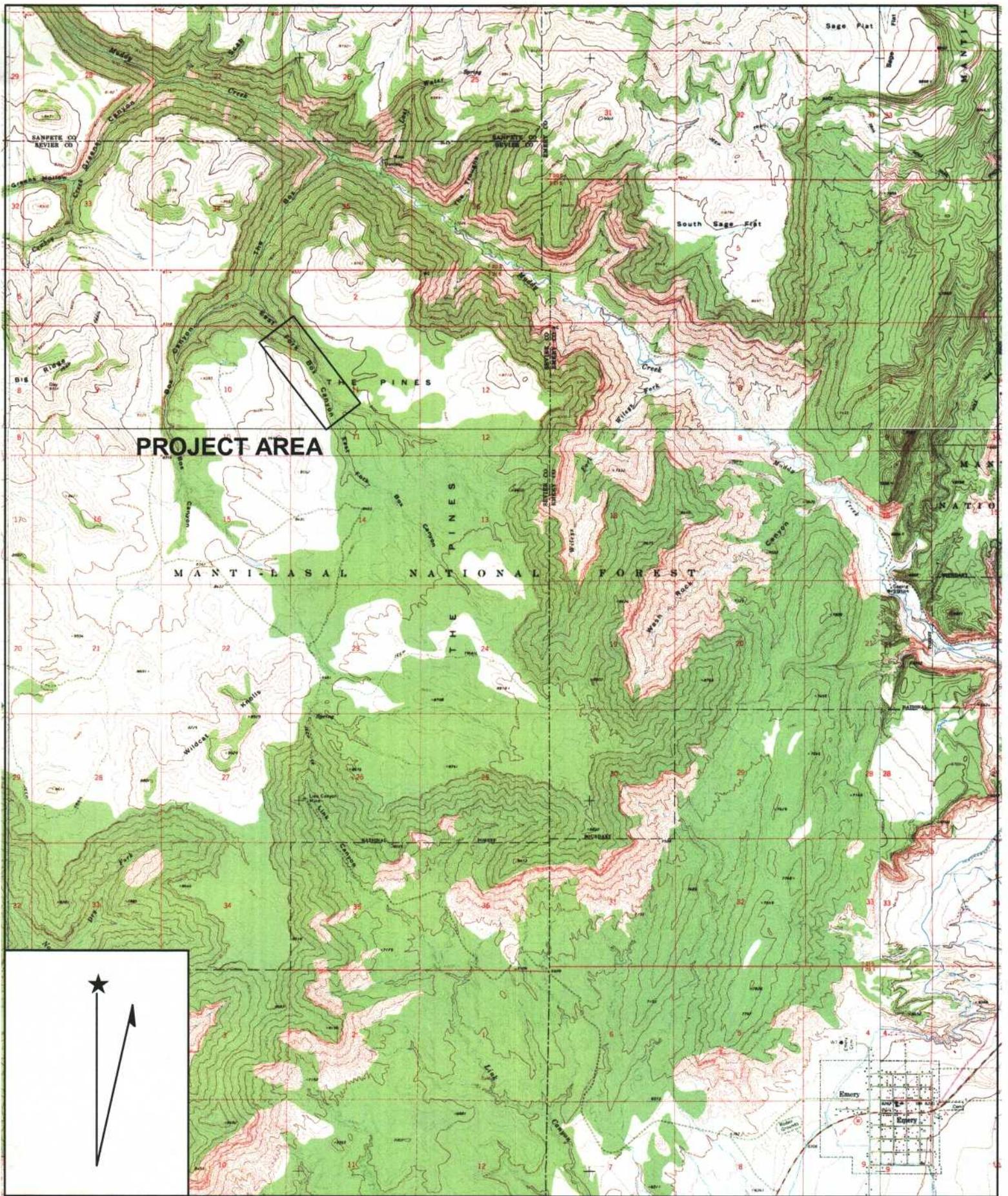
Agent's address and telephone number:

## INSTRUCTIONS

### **Applications which do not include the following will not be processed.**

For a complete application, you **MUST** include the following on 11 X 17 or smaller paper (for large projects, multiple sheets with a key may be used). Clear, hand-drawn plans approximately to scale are acceptable.

1. An accurate location map (USGS quadrangle map preferred)
2. A plan view of the proposed activity (as seen from above) including dimensions of work.
3. A cross-section view of the proposed activity (may use typical cross-section for large projects) including dimensions.
4. For projects which include wetlands, an accurate wetland delineation must be prepared in accordance with the current method required by the Corps.

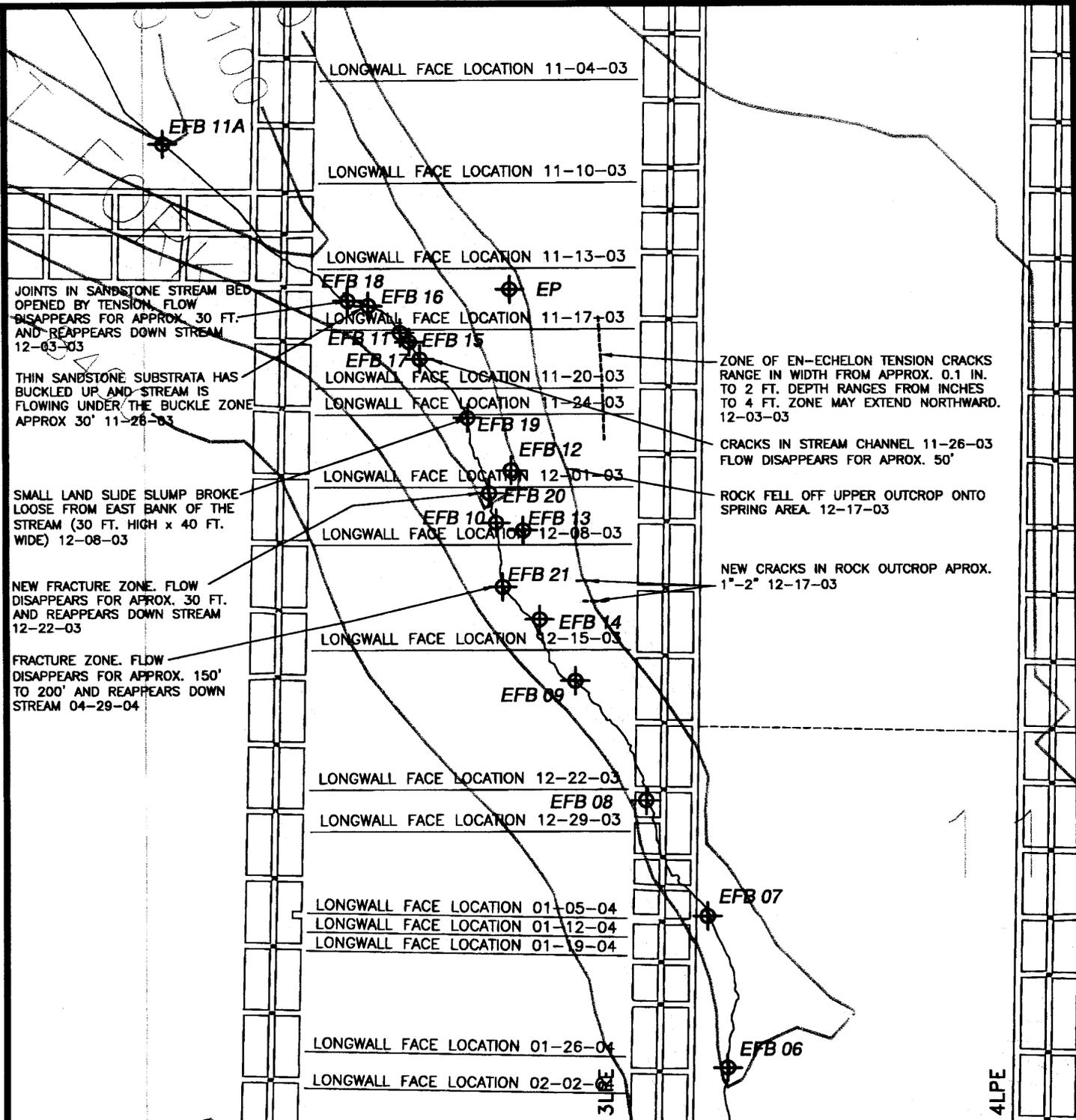


**PROJECT AREA**

MANTI-LASAL NATIONAL FOREST

Name: EMERY WEST  
 Date: 5/25/2004  
 Scale: 1 inch equals 5000 feet

Location: 038° 58' 50.3" N 111° 18' 18.1" W  
 Caption: Stream Alteration Permit - East Fork Box Canyon



**LEGEND**

- APPROXIMATE CRACK LOCATION
- SURVEYED CRACK LOCATION
- EFB MONITORING LOCATION

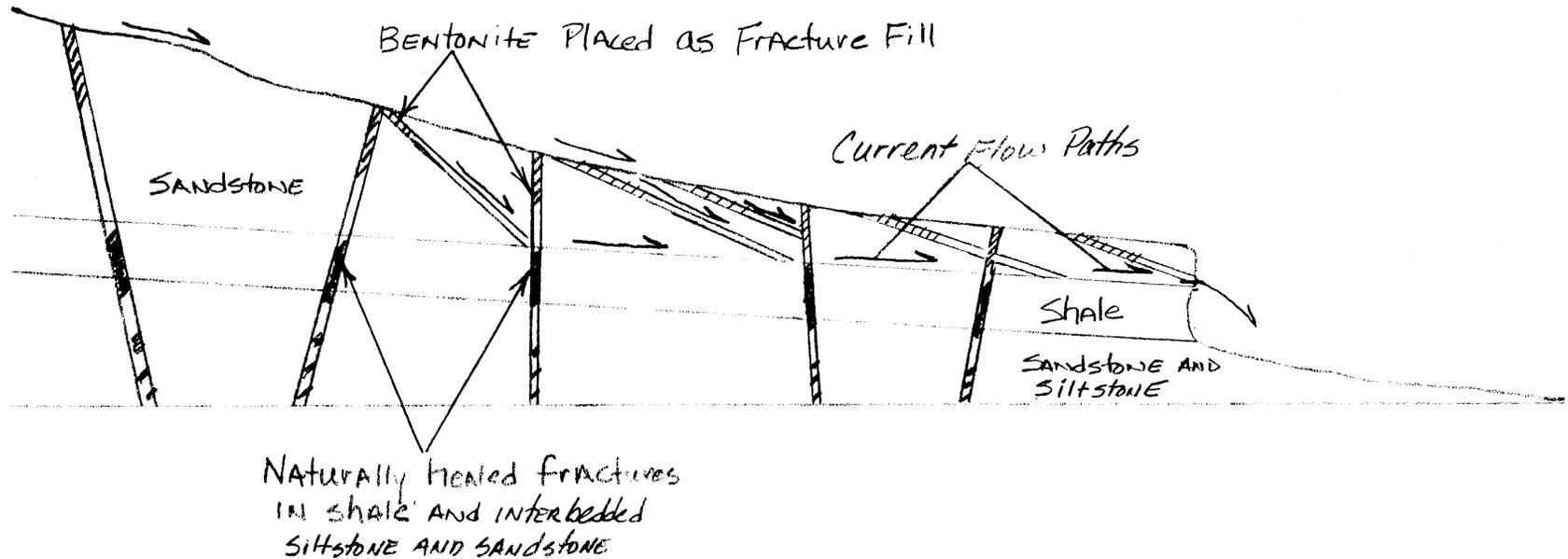
<b>Canyon Fuel Company, LLC</b> SUFCO Mine	
<b>EAST FORK OF BOX CANYON          WEEKLY MONITORING</b>	
DATE: APRIL 29, 2004	SCALE: 1" = 400'
397 SOUTH 800 WEST SALINA, UTAH 84654	DRAWN BY: BDH
FILENAME: H:\DWG\DOGM\EAST FORK BOX\3LPE WEEKLY MONITORING	

EAST FORK OF BOX CANYON  
FLOW MONITORING

DATE	EFB-1		EFB-2		EFB-3		EFB-4		EFB-5		EFB-6		EFB-7		EFB-8		EFB-9		EFB-10		EFB-11		EFB-11A		Below Pines 408		EFB-12		EFB-13		EFB-14	COMMENTS			
	Flow (gpm)	Width (ft)	Flow (gpm)	Width (ft)	Flow (gpm)	Width (ft)	Flow (gpm)	Width (ft)			Flow (gpm)	Width (ft)																							
10/10/2003	0.00	NA	0.00	NA	0.00	5.8	0.59	5.7	0.00	1.5	1.55	4.1	7.23	5.5	0.55	NA	9.68	9.8	10.90	3.1	13.00	5.7	2.58	15.40	6.60										Baseline flows and channel measurements
10/17/2003											1.50																							Sufco 4th quarter water monitoring data	
11/10/2003																					18.80	5.7	3.80	25.00										Monitored only sites with potential to be affected by subsidence. All monitored sites covered with ice. Pictures attached.	
11/17/2003																					14.50		2.26	18.10										The waterfall monitoring sites and the stream channel widths appeared unchanged. There was approximately 6-8 inches of fresh snow in the canyon and it was snowing moderately during monitoring. Large portions of the stream channel were obscured by ice and/or snow.	
11/24/2003																					8.60	iced over	36.98	49.31	iced over				0.37	0.16	0.79	1.85	Frozen (0.15 est.)	EP: Reported flow at EFB-10 is only partial flow since entire channel is ice covered. We were able to isolate a portion of the flow. Actual flow would be at least a few gpm more. EFB-11 - Spring 214 was flowing approx. 16 times the previous measured flow rate. Probably not snow melt. EFB-11 stream flow includes Spring 214 flow.	
12/01/2003																					11.00		9.10	37.20				0.25	0.14	0.72	1.82	0.14	EP: Stream channel mostly ice-free from about 100 feet above Pines 214 confluence downward to EFB-11. Above this point, stream channel is essentially 100% ice-covered to the confluence with the east fork of the East Fork. Below Pines 214, stream was mostly ice-free. There was an approximately 30 foot reach of the stream channel about 100 feet below EFB-11 that was dry. We plugged a few small holes in the stream bottom with native stream sediments. After that, stream flow was reestablished in the 30 foot reach. Stream flow gradually increased downstream in stream channel below the 30-foot reach. Erik walked down-canyon approximately 75 yards and the flow was steadily increasing.		
12/08/2003																					Frozen		5.49	24.70	20.00			Frozen	Frozen	0.39	1.64	0.11	EP: EFB-11A is a new monitoring site located several hundred feet downstream of EFB-11. (N 4,317,735 E 471,052 NAD 27 UTM) Stream monitored on a rocky, gravelly substrate. May not have captured all of the flow at this site. It was apparent that most of the streamflow observed at EFB-11 had remerged into the stream channel above EFB-11A. Clear, cold day, temperatures below freezing and 4-5 inches of new snow on ground in canyon.		
12/15/2003																					10 (est.)		3.97	64.10	42.40			Frozen	Frozen	Frozen	0.09	0.07	Did not observe any significant new tension cracks in the stream channel. It is apparent that there is somewhat less ice cover in the stream channel between EFB-10 and EFB-11 than previously, possibly a result of additional groundwater inflow into the stream in this region. Elsewhere, the stream channel and spring discharge areas are more frozen than last week.		
12/22/2003																					30 (est.)		1.15	39.70	29.30			Frozen	Frozen	Frozen	0.01	Frozen	EP: Observed some fractures in the stream channel approximately 40 yards below EFB-10. The fractures occur in thin-bedded silty sandstone in the channel bottom. All of the stream flow infiltrated into the fracture system at that point. The stream channel was dry to a point approximately 35 feet below the fracture. At that point the water (apparently all) remerged into the stream channel. Because this reach of the stream was frozen during previous monitoring events, we could not determine if the fractures and stream infiltration are recent occurrences. The slump between EFB-10 and EFB-11 is essentially unchanged. The slump material is mostly frozen. We did not observe groundwater discharge from the slump material as occurred immediately after the slump occurred. The small pool created by the slump material in the stream channel appears unchanged from the previous monitoring event.		
12/29/2003																																	Tried to make it up to the East Fork but the snow on the road in Link Canyon was too deep and it became too unreasonable to proceed.		
01/05/2004																																		Tried to make it up to the East Fork but the snow on the road in Link Canyon was too deep and it became too unreasonable to proceed.	
01/14/2004																																		EP: Accessed area using snowmobiles. Clear, cool day, temperatures below freezing. No snow in past several days, bare spots on road in Link Canyon on south facing slopes, 12-18+ inches of snow in the East Fork canyon bottom. Couldn't access all of the monitoring sites because of the deep snow cover and difficult conditions.	
04/06/2004																																		Made it into the East Fork but much of the canyon bottom including the stream channel in many locations was covered with snow and ice (about 2 feet deep in the canyon bottom). Consequently, discharge measurements were not performed.	
04/23/2004																																		Tried to make it up to the East Fork but the snow on the road in Link Canyon was too deep from the recent storms.	



# CROSS-SECTION THRU STREAM GRADIENT



NOTE: Fracture aperture exaggerated for illustrative purposes

CRACK  
WITH VERTICAL SUBSIDENCE  
TYPICAL STREAM PLAN VIEW

