

From: "Davis, Mike" <MDavis@archcoal.com>
To: "Grubaugh-Littig, Pam" <Pamgrubaughlittig@utah.gov>
Date: 3/28/2006 12:00:36 PM
Subject: Sufco 2005 4th Quarter Water Monitoring

Dear Pam:

We have successfully uploaded the Sufco 2005 4th quarter water monitoring data to the EDI. Additionally, I have attached to this e-mail a copy of the monitoring report concerning the baseline flow measurements at FP-1 and FP-2 in Box Canyon. A map illustrating the locations of FP-1, FP-2, and the start of stream flow in the Main Fork of Box Canyon is included with the text.

If you have any questions, please give me a call at 435 286-4421.

Thanks,
Mike

<<2005 SUFCO monitoring letter for 4th quarter.doc>>

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CC: "Hansen, Chris" <CHansen@archcoal.com>, "Byars, John" <JByars@archcoal.com>, "Dean, Dana" <danadean@utah.gov>, "Fluke, Steve" <stevefluke@utah.gov>, "Hess, Pete" <petehess@utah.gov>



PETERSEN HYDROLOGIC, LLC

28 March 2006

Mr. Mike Davis
Canyon Fuel Company, LLC
SUFCO Mine
397 South 800 West
Salina, Utah 84526

Dear Mike,

This letter is to inform you that we have successfully completed the 4th quarter 2005 hydrologic monitoring at the SUFCO Mine. All of the regular monitoring sites were accessed and monitored. All water samples requiring chemical analysis have been submitted to CT&E Laboratories in Huntington, Utah. The field parameters measured at each of the monitoring sites are listed on the attached sheet.

As specified in the 4th quarter monitoring plan, perennial stream flow locations were surveyed in the Box Canyon area. These locations are given in this report. A map showing the perennial flow locations in Box Canyon is attached to this report.

We appreciate the opportunity to provide this service to you. Please feel free to contact me if you have any questions in this regard.

Sincerely,

Erik C. Petersen, P.G.
Principal Hydrogeologist
Utah PG No. 5373615-2250



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Station	Date	Time	Flow (gpm)	T (°C)	pH	Cond (µS/cm)	DO (mg/l)	Comments
SUFCO 001	24 Oct 05	14:00	0.45	6.9	7.71	468	---	
SUFCO 006	24 Oct 05	14:45	18.8	8.5	8.53	719	7.91	
SUFCO 007	24 Oct 05	15:30	96	7.3	8.61	470	8.03	
SUFCO 041	22 Dec 05	14:15	312	1.3	8.69	1,070	6.55	Stream mostly frozen over. Monitored slightly above normal location in ice-free reach of the creek.
SUFCO 042	22 Dec 05	13:45	4,120	8.9	8.59	910	6.83	Stream running very clear
SUFCO 046	22 Dec 05	15:15	27	10.7	8.35	917	6.61	
SUFCO 047	22 Dec 05	13:00	32.0	27.2	7.66	788	---	
SUFCO 047A	22 Dec 05	14:45	86	8.5	7.86	1,486	5.66	Some snow melt occurring during monitoring event.
SUFCO 057A	24 Oct 05	14:00	0.018	11.3	7.65	544	---	
SUFCO 089	27 Oct 05	12:00	Moist ground, no flow	---	---	---	---	
SUFCO 090	27 Oct 05	14:30	0.41	5.6	7.96	109	6.89	
GW-13	27 Oct 05	16:00	0.72	4.8	8.16	1,437	---	
GW-20	27 Oct 05	14:50	Dry	---	---	---	---	
GW-21	27 Oct 05	18:40	0.43	6.1	7.87	204	---	
USFS 109	27 Oct 05	14:45	Dry	---	---	---	---	
USFS 110	27 Oct 05	14:40	Dry	---	---	---	---	
FP-1	27 Oct 05	13:00	No perennial flow	---	---	---	---	No surface flow in the specified fork of Box Canyon.
FP-2 (East Fork)	27 Oct 05	17:45	No perennial flow	---	---	---	---	Discharge from spring area persisted to the same location as previous year. No perennial flow persisting to confluence with East Fork of Box Canyon.
Pines 100	27 Oct 05	18:45	0.14	6.8	7.86	213	---	
Pines 105	21 Dec 05	15:45	9.32	5.2	7.96	187	---	Flow measurement performed directly from outlet pipe undisturbed.
Pines 105	27 Oct 05	17:15	---	5.5	7.42	119	---	Flow measurement = 3.66 gpm, measured using elbow on discharge pipe.
Pines 106	27 Oct 05	18:00	0.33	6.8	7.80	386	5.98	
Pines 206	27 Oct 05	15:15	1.50	6.8	7.77	479	---	

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Pines 209	27 Oct 05	15:00	8.33	6.2	7.94	356	---	
Pines 212	27 Oct 05	14:25	4.80	5.9	7.83	291	---	Spring just to the west of Pines 212 has slumped into the canyon bottom.
Pines 214	27 Oct 05	18:00	0.52	4.9	8.48	484	---	
Pines 218	27 Oct 05	14:35	Dry	---	---	---	---	
Pines 219	27 Oct 05	14:15	Moist	---	---	---	---	
Pines 302	20 Dec 05	15:15	10.5	0.0	8.69	608	8.28	
Pines 303	27 Oct 05	16:00	0.021	5.9	7.69	936	---	
Pines 403	20 Dec 05	13:40	130	0.1	8.69	685	8.38	Stream frozen over, broke ice to monitor
Pines 405	20 Dec 05	14:30	5,350 (11.9 cfs)	0.0	8.56	423	8.16	Stream mostly frozen over
Pines 406b	20 Dec 05	16:40	USGS station frozen. Flow est. 5,350 gpm	-0.1	8.50	422	7.80	USGS station frozen in for winter. Flow estimated to be the same as at Pines 405. There were no inflows from side tributaries and ET=0.
Pines 407	27 Oct 05	16:20	99.7	4.9	8.39	628	8.19	
Pines 408	27 Oct 05	16:30	39.9	4.9	8.44	480	7.69	
US 79-13	---	---	---	---	---	---	---	Not included in 4 th quarter monitoring plan
US 80-2	24 Oct 05	14:15	W.L. = 173.90 feet	---	---	---	---	
US 80-4	---	---	---	---	---	---	---	Not included in 4 th quarter monitoring plan
US 81-4	24 Oct 05	14:30	W.L. = 945.05 feet	---	---	---	---	
89-18-1	24 Oct 05	16:00	W.L. = 1,016.79 feet	---	---	---	---	
89-20-1	24 Oct 05	16:15	W.L. = 934.70 feet	---	---	---	---	
89-20-2W	24 Oct 05	16:30	W.L. = 147.44 feet	---	---	---	---	
WRDS B-3	22 Dec 05	15:50	Dry	---	---	---	---	
WRDS B-5	22 Dec 05	15:45	Dry	---	---	---	---	There was about 4 inches of watery mud in the bottom 4 inches of the well casing. Probably trapped in bottom blank.
WRDS B-6	22 Dec 05	15:15	W.L. = 67.95 feet	9.0	7.10	7,650	---	
WRDS B-8	22 Dec 05	16:20	W.L. = 42.91 feet	8.0	7.68	1,827	---	
WRDS B-9	22 Dec 05	15:50	Dry	---	---	---	---	
Link Portal West	24 Oct 05	18:30	Dry	---	---	---	---	
Link Portal East Lower	24 Oct 05	18:35	Dry	---	---	---	---	

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Link 001	24 Oct 05	18:20	Dry	---	---	---	---	
Link 002	24 Oct 05	19:00	Dry	---	---	---	---	
01-8-1	24 Oct 05	17:30	W.L. = 1,501.99 feet	---	---	---	---	

Note: All well water levels are reported in feet below the top of the inner well casing unless otherwise noted



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FP-1 (Upper east fork of main fork of Box Canyon)

The upper east fork of the main fork of Box Canyon was visited on 27 October 2005. There was no surface flow in this drainage on that date, as indicated on the attached map.

FP-2 (East Fork of East Fork Box Canyon)

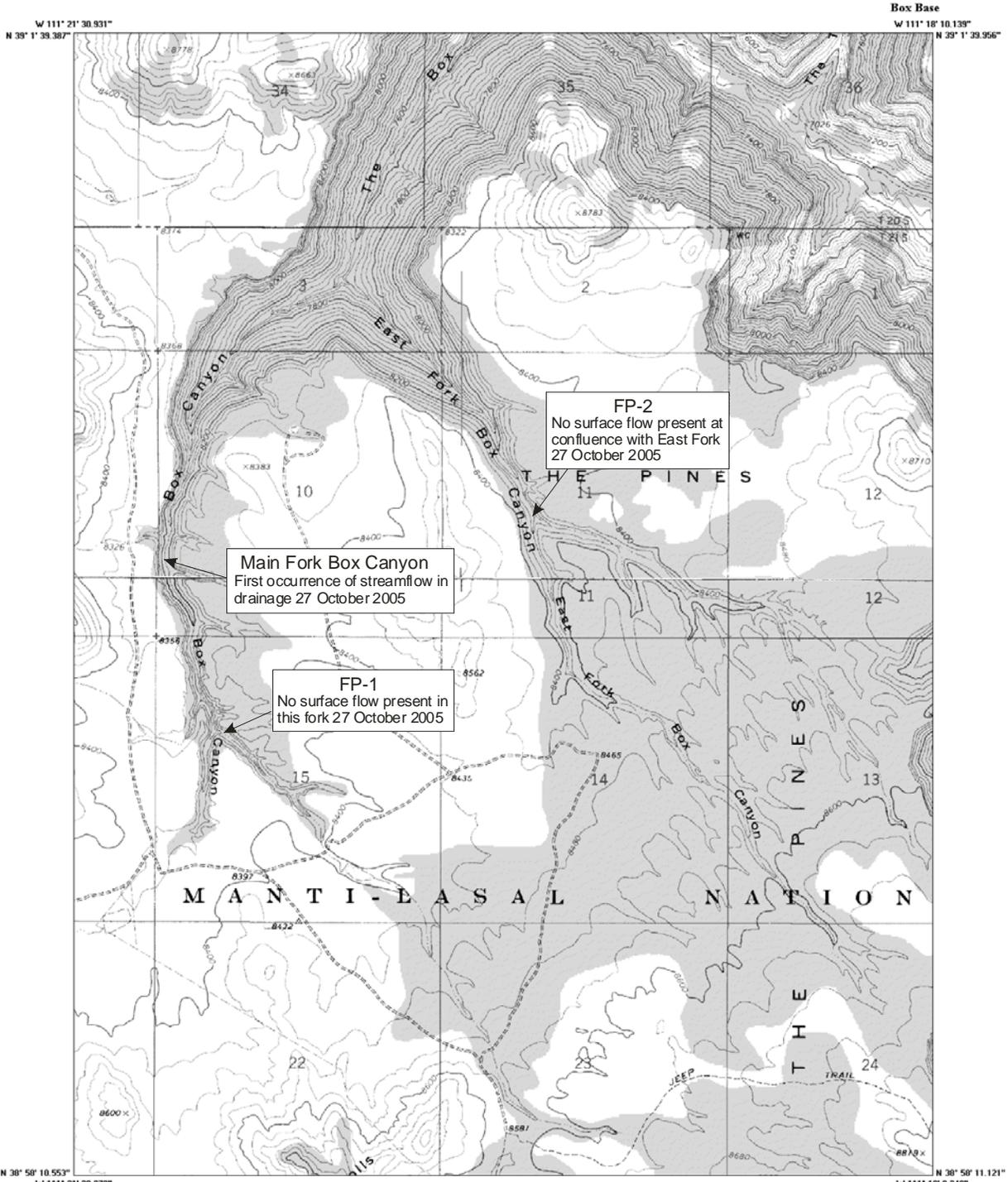
The East Fork of the East Fork of Box Canyon was visited on 27 October 2005. No surface flow from the East Fork of the East Fork was present at the confluence with the East Fork, as indicated on the attached map. Likewise, no flow was observed at this location during a visit on 30 September 2005.

Main Fork of Box Canyon

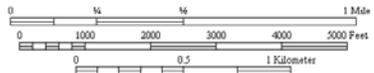
The Main Fork of Box Canyon was visited on 27 October 2004. Streamflow in Box Canyon began near the location 12 S 469471, 4316735 (UTM, NAD 27 coordinates) in the southwest ¼ section 10, T21S, R5E. This location is shown on the included map. A discharge of 0.41 gpm was measured in the stream a short distance below this location.



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1927 North American Datum; 1,000-meter UTM grid zone 12
 Generated by BigToto (www.bigto.com)
 Map compiled from USGS 7.5 Minute Quads: Flagstaff Peak, UT; Emery West, UT





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