

July 7, 2003

TO: Internal File

THRU: Daron R. Haddock, Permit Supervisor

FROM: Gregg A. Galecki, Environmental Scientist III/Hydrology

RE: Technical Field Visit, Discharge of Coal fines from Sedimentation Pond, Canyon Fuel Company LLC., Dugout Canyon Mine, C/007039

Other Attendees: Vicky Miller, Canyon Fuel Company (CFC), LLC
Chris Hansen, CFC, LLC
Ken Payne, CFC, LLC
Pete Hess, DOGM
Steve Fluke, DOGM

Date & Time: July 2, 2003; 9:30 am – 11:30am

PURPOSE:

The purpose of the visit was to evaluate the hydrologic affects of an accidental discharge of suspended coal fines / suspended solids that occurred on July 1, 2003.

OBSERVATIONS:

During a routine cleaning of the Sedimentation Pond, the pond's primary spillway decant culvert was inadvertently breached causing a discharge of coal fines / suspended solids into Dugout Creek. The event is described in detail in the attached letter from Canyon Fuel to the Division of Water Quality. Both CFC and DOGM personnel collected water samples on the day of the discharge.

TECHNICAL FIELD VISIT

The currently described field visit was conducted approximately 24-hours after the discharge. An inspection of the channel began approximately 5-miles downstream where the discharge is routed into Clarks Valley. Visual observations indicated that minor coal fines were present in the water, where flow was estimated at 100 – 125 gpm. However, none of the water was reporting to Rock Creek and ultimately Grassy Trail Creek (first perennial receiving stream) because the water was being used to irrigate alfalfa. Photo #1 illustrates apparent recent coal-fines in the high-water mark of the irrigation ditch.

Observations immediately below the Sediment Pond discharge point indicate the discharge occurred with a relatively high ‘surge’ of coal-fines material. This is apparent because coal-fines were observed approximately 1-foot (vertically) above the current water level. However, this ‘high water’ mark extended only approximately 100-feet downstream of the discharge. The discharged material was also quickly ‘flushed’ downstream because little or no coal fines from the discharge are apparent in the bottom of the active flow channel. Photos 2 – 5 illustrate the ‘high water’ mark of the discharge and the clear water in the active channel. Photo 5 (approximately 100-ft downstream) illustrates the terminus of the majority of the ‘high water’ surge. It is interesting to note that in the vicinity of Photo #3, approximately 1-inch of coal-fines sludge exists beneath approximately 6-inches of clean gravel; indicating the existence of coal fines are not uncommon to the stream channel.

Photo #6 is an example of biological activity noted in the creek. Tiger Salamanders and macro invertebrates observed in the creek appeared to be unaffected by the discharge. Tiger Salamanders commonly reside in and around the Sedimentation Pond.

Independent of the discharge from the Sedimentation Pond, Dugout Creek (an intermittent drainage) was flowing at approximately 450 gpm (1 cubic-foot/second). Flow consisted of approximately 160 gpm of undisturbed – natural stream flow, approximately 70 gpm from the Dugout mine-workings, and approximately 200 to 250 gpm from the old Knight mine-workings. Immediately following the Sedimentation Pond discharge, all mine discharge was halted to keep the advancement of the fines to natural baseline streamflow (total mine discharge was approximately 300 gpm). When the mine discharge needed to resume, the total 450-gpm flow provided dilution and ‘flushing’ of the coal fines and suspended solids downstream.

The total amount of the discharge is estimated at 600 gallons; however, the amount will be refined using a rough estimate from the disturbed area of pond and the laboratory results of the water samples collected. Flow into the culvert was stopped in only a matter of minutes because the breach was plugged with clean fill material.

A series of three silt fences was installed approximately 1/2-mile downstream of the discharge point to capture as many of the coal fines as possible. The location of the silt fences was determined by estimating the installation time and trying to capture as much of the

TECHNICAL FIELD VISIT

advancing discharge as possible. Photo #7 illustrates the silt fences and demonstrates that the silt fences acted as both silt-collectors and energy-dissipaters reducing velocity to allow the fines to begin to settle out. Photos #8 and #9, located approximately 1/2-mile downstream of the silt fences at the mine access road crossing, illustrate that very little of the coal fines are apparent.

Water quality samples collected by the Division indicate the silt fences performed adequately capturing a significant amount of the suspended load. Sample DC-2 collected immediately below the highest upstream silt fence and Sample DC-1 was collected approximately 1/2-mile downstream as the creek passes under the mine access road. The samples showed the following results:

Parameter	DC-1 Bridge at Road	DC-2 Below 1st Silt Fence
Conductivity (umhos/cm)	2270	1744
PH (pH units)	8.28	7.91
Settleable Solids (ml/l)	4.0	450.0
Total Dissolved Solids (mg/l)	584	1340
Total Suspended Solids (mg/l)	1007	129480
Sulfate (mg/l)	1018	799

With the over 99 percent decrease in both Suspended solids and Settleable solids in the downstream sample, it appears that the silt fences had an impact on water quality between the two samples. In addition, Total Dissolved Solids decreased by 56 percent, and increases in Specific Conductivity, pH, and Sulfate indicate local geology is already beginning to influence the water quality.

To insure similar breaches of the primary decant culvert do not occur in the future, Ken Payne (CFC – Manager of Major Projects) was actively encasing the culvert in concrete for protection.

RECOMMENDATIONS/CONCLUSIONS:

No obvious negative impacts were observed in Dugout Creek due to the discharge based on field observations. Dugout Creek is typically dry below the mine by mid-July and the downstream users are appreciative of the water. No water impacted from the discharge reported to Grassy Trail Creek (perennial receiving stream). Observations of the sediments existing in the channel prior to the discharge indicate coal fines are not new to the channel. The coal fines quickly dissipated in the active flow regime as observed approximately 1- and 5-miles downstream. Laboratory samples confirmed the water quality of the discharge having little, if any, impact downstream of the silt fences.

The majority of the residual coal fines are located within the approximate 1-mile of the stream channel immediately below the mine. Natural annual high-flow storm events will likely dilute these sediments and disseminate them downstream, resulting in minimal impacts to the

TECHNICAL FIELD VISIT

stream channel.

Recommendations from the Division include: 1) repairing of the Discharge Culvert so it is functional; 2) Carefully remove any remaining coal fines from the Sedimentation Pond Discharge culvert so no additional coal fines enter Dugout Creek; and 3) When flow is at a minimum, remove the silt fences and any coal fines that have collected behind them. No other mitigation is recommended at this time.

cc: All Attendees
O:\007039.DUG\COMPLIANCE\2003\FV_0702.DOC

July 2, 2003

Mr. Don Ostler, P.E., Director
Department of Environmental Quality
Division of Water Quality
288 North 1460 West
Salt Lake City, UT 84114-4870

RE: Canyon Fuel Company, LLC, Dugout Canyon Mine, UPDES Permit UTG-040020

Dear Mr. Ostler:

Canyon Fuel Company, LLC, Dugout Canyon Mine is providing the required written notification of a failure to comply with UPDES Discharge Permit UTG-040020, Part II, Section I and the Utah Mining Rules R645-301-731.223. The failure occurred at Discharge No. 002A, Sediment Pond Discharge. The noncompliance was orally reported July 1, 2003 to the Utah Division of Oil, Gas and Mining and to Mr. Tom Rushing of your office. In addition, the effected downstream water user has been notified by phone of the discharge.

The noncompliance was an "upset" which occurred on July 1, 2003 and is expected to exceed the allowable permitted discharge for total suspended solids/settleable solids. Samples were taken by both the permittee and Mr. Pete Hess of the Utah Division of Oil, Gas and Mining. The lab results will identify the quantity of solids discharged. The information from the laboratory will be submitted to your office once they have been received and verified.

Description and Cause:

Dugout Canyon Mine hired Nelson Construction Company of Huntington, Utah to clean the sediment from the mine's sediment pond. The treated water from the pond had been sampled at 8:30 a.m. the morning of July 1, 2003 prior to being discharged. Most of the water had been discharged prior to the incident but there was a small amount still in the bottom of the pond. At about 11:00 a.m. a trackhoe was proceeding to remove the sediment from around the pond's primary spillway decant culvert and inadvertently caught a band connecting two pieces of the decant culvert. The two lengths of culvert separated and a portion of the accumulated water/sediment/coal fines were released through the decant culvert into Dugout Creek. The trackhoe operator immediately covered the damaged culvert with soil from the pond bank, stopping the flow. In addition and within a few minutes of damaging the culvert, the discharge end of the decant culvert was plugged with packing material to prevent any additional flow. Three silt fences were constructed at twenty foot intervals downstream from the pond outlet. Unfortunately, the silt fences where not able to retain all the sediment/coal fines and a thin veneer of coal fines have been deposited on the bottom of the channel and on the channel walls two to six inches above the bottom of channel in various locations along Dugout Creek.

Mr. Don Ostler, P.E.
Division of Water Quality
July 2, 2003

Mine water being discharged at Outfall 001A was immediately shut off, so the only water carrying sediment downstream was the natural water flowing in Dugout Creek.

The water in Dugout Creek is used downstream for stock watering and irrigation. The sediment loaded water had reached the end user who is currently using it to water alfalfa. The water had not progressed past the end user's fields in Clark Valley (July 2, 2003, 10:00 a.m.). At this time of year, water rarely flows beyond the alfalfa fields and therefore had not and will not reach Grassy Trail Creek or the Price River. There are no fish in Dugout Creek or in Grassy Trail Creek (near US Highway 6) where Dugout Creek joins Grassy Trail Creek. Dugout Creek below the mine is normally dry by mid-July as are the majority of the intermittent streams in the area. We feel the impact to the creek is minor and all the sediment/coal fines will drop out within a short period of time. The waters at the decant outlet of the pond had cleared by the afternoon of the 1st.

The discharged volume of the water containing pond sediments and coal fines is estimated at this time to be approximately 600 gallons. Once the results of the laboratory analysis of the samples of contaminated water are received, an estimate of the volume of pond sediment and coal fines can be made.

Period of Noncompliance:

The water and coal fines were released for approximately 15 minutes prior to completely securing the culvert outlet. The culvert outlet has been closed by welding a metal plate with a secured drain over the outlet. The plate will remain in place until the pond cleaning has been completed.

Plans to Reduce, Eliminate and Prevent Recurrence:

To eliminate the potential for damage to the primary spillway decant culvert and the subsequent discharge of untreated water and coal fines in the future, the primary spillway decant culvert will be encased in concrete following the completion of the sediment clean out, a period of approximately one week.

Should you have any questions concerning this information, please call myself at (435)636-2869 or Dave Spillman at (435) 636-2872.

Sincerely yours,

Vicky S. Miller

cc: Dave Spillman
Chris Hansen
Mike Herkimer, DEQ
Tom Rushing, DEQ
Pete Hess, UDOGM
Pam Grubaugh-Littig, UDOGM



ADDRESS ALL CORRESPONDENCE TO:
 COMMERCIAL TESTING & ENGINEERING CO.
 P.O. BOX 1020
 HUNTINGTON, UT 84520
 TEL (436) 853-2311
 FAX (436) 653-2436

July 8, 2003

DIVISION OF OIL, GAS & MINING
 1594 WEST N. TEMPLE-SUITE 1210
 P.O. BOX 145801
 SALT LAKE CITY, UTAH 84114

Sample identification by
 Division of Oil, Gas, & Mining

ID:DC-2 Dugout Creek @ Silt Fences

Kind of sample Water
 reported to us

RECEIVED 1545
 SAMPLED 1325
 FIELD MEASUREMENTS

Sample taken at Dugout

Sample taken by Peter Hess

Date sampled July 1, 2003

NOTES:

Date received July 1, 2003

Page 1 of 1

Analysis report no. 59-25426

Parameter	Result	MRL	Units	Method	Analyzed	
					Date/Time	Analyst
Conductivity	1744	----	umhos/cm	SM2510-B	07-08-2003	0715 JJ
pH	7.91	----	pH units	EPA 150.1	07-02-2003	0825 DI
Solids, Settleable	450.0	0.1	ml/l	EPA 160.5	07-02-2003	0830 ELP
Solids, Total Dissolved	1340	10	mg/l	EPA 160.1	07-02-2003	1020 AB
Solids, Total Suspended	129480	5	mg/l	EPA 160.2	07-02-2003	1030 AB
Sulfate	799	0.5	mg/l	EPA 300.0	07-02-2003	0900 JJ

Post-it® Fax Note 7671

Date	7/8/03	# of pages	2
To	Greg Gbalecki		
From	Peter Hess		
Co./Dept.	Co.		
Phone #	Phone #		
Fax #	Fax #		

RECEIVED
 JUL 08 2003
 DIV. OF OIL, GAS & MINING



Respectfully submitted,
 COMMERCIAL TESTING & ENGINEERING CO.

[Signature]
 Huntington Laboratory



ADDRESS ALL CORRESPONDENCE TO:
 COMMERCIAL TESTING & ENGINEERING CO.
 P.O. BOX 1020
 HUNTINGTON, UT 84528
 TEL: (435) 653-2311
 FAX: (435) 653-2436

July 6, 2003

DIVISION OF OIL, GAS & MINING
 1594 WEST N. TEMPLE-SUITE 1210
 P.O. BOX 145801
 SALT LAKE CITY, UTAH 84114

Sample identification by
 Division of Oil, Gas, & Mining

ID:DC-1

Kind of sample Water
 reported to us

RECEIVED 1545
 SAMPLED 1310
 FIELD MEASUREMENTS

Sample taken at Dugout

Sample taken by Peter Hess

Date sampled July 1, 2003

NOTES:

Date received July 1, 2003

Page 1 of 1

Analysis report no. 59-25427

Parameter	Result	MRL	Units	Method	Analyzed	
					Date/Time	Analyst
Conductivity	2270	----	umhos/cm	SM2510-B	07-08-2003	0715 JJ
pH	8.28	----	pH units	EPA 150.1	07-02-2003	0825 DI
Solids, Settleable	4.0	0.1	ml/l	EPA 160.5	07-02-2003	0830 BLP
Solids, Total Dissolved	584	10	mg/l	EPA 160.1	07-02-2003	1030 AB
Solids, Total Suspended	1007	5	mg/l	EPA 160.2	07-02-2003	1030 AB
Sulfate	1018	0.5	mg/l	EPA 300.0	07-02-2003	0900 JJ

RECEIVED

JUL 08 2003

DIV. OF OIL, GAS & MINING



Respectfully submitted,
 COMMERCIAL TESTING & ENGINEERING CO.

Huntington Laboratory

Commercial Testing & Engineering Co. Minerals Services - Corporate Office
 1919 S. Highland Ave., Suite 210B, Lombard, IL 60148 t (630) 953-9300 f (630) 953-9306 www.cte.com

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