

**WATER QUALITY
MEMORANDUM**
Utah Coal Regulatory Program

March 28, 2019

TO: Internal File

THRU: Steve Christensen, Permit Supervisor 

FROM: Keenan Storrar, Hydrologist 

RE: Third Quarter 2018 Water Monitoring, Canyon Fuel Company, LLC, Skyline Mine. C/007/005, Task ID #5797

The Skyline Mine is an operating longwall mine. Operations are finished in the north and are now progressing southwest into the Flat Canyon Lease. Many mined-out areas of the mine have been sealed-off. Water monitoring requirements are in Section 2, pages 2-36, 2-36a, 2-36b, 2-37, 2-38, and 2-39 of the MRP.

1. Were data submitted for all of the MRP required sites?

YES NO

Second, Third, and Fourth Quarter monitoring requires regular information from 76 sites. Additional locations on streams in the North Lease are monitored for one year before, during, and for one year after their being undermined.

Note: Samples are analyzed for tritium at several sites, plus deuterium, carbon¹⁴, and oxygen¹⁸ at JC-1. Because determinations of isotopic concentrations can require several months, these values are often reported later than those from field measurements and routine laboratory analyses. The Permittee has always been prompt at getting the isotopic data to the Division as soon as they are received from the lab.

In-mine YES NO

The MRP requires sampling at 6 sites categorized as "other" or "in-mine, roof drippers". All 6 are monitored at the surface: CS-12, CS-13, CS-14, MD-1, ELD-1, and SRD-1 are mine discharge stations; CS-13 is a French drain; and ELD-1 is the combined output of JC-1 and JC-3.

Springs YES NO

Thirty-five springs are monitored for 2nd, 3rd, and 4th Quarters: *S10-1, S12-1, S13-2, S13-7, S14-4, S17-2, S22-5, S22-11, S23-4, S24-1, S24-12, S26-13, S34-12, S35-8, S36-12, 2-413, 3-290, 8-253, WQ1-1, WQ1-39, WQ3-6, WQ3-26, WQ3-41, WQ3-43, WQ4-12, SW21-104, SW28-110, SW4-173, SW4-429, SW5-590, SW32-277, SW33-268, SW28-111, SW4-169, and SW32-276.*

Four springs are monitored during the 2nd and 4th quarters only: *S15-3, S24-1, 2-413, and 8-253*. 8-253 is for tritium analysis only.

Spring S35-8 is missing Field Parameter data for Q3.

Streams

YES NO

The MRP requires 34 sites during the Second, Third, and Fourth Quarters: *CS-3, CS-6, CS-7, CS-8, CS-9, CS-10, CS-11, CS-16, CS-17, CS-18, CS-19, CS-20, CS-21, CS-22, CS-23, CS-24, CS-25, F-10, UPL-10, VC-6, VC-9, VC-10, VC-11, VC-12, WRDS-1, WRDS-2, WRDS-3, WRDS-4, EL-1, EL-2, CS-32, CS-33, CS-34, and CS-35*. EL-1 and EL-2 are for tritium analysis only.

The MRP requires 8 sites to be sampled in First Quarter: *CS-12, CS-13, CS-14, CS-6, VC-6, VC-9, VC-10, and SRD-1*.

Stream CS-7 needs Field Parameters uploaded and EL-2 needs tritium uploaded for Q3.

Wells

YES NO

Water levels are measured at 12 wells during the Second, Third, and Fourth Quarters: *W79-10-1B, W79-26-1, W99-4-1, W20-28-1, 08-1-5, JC-2, 15-21-2, 16-24-1, P17-4-1, P17-33-1, and, P17-34-1*. Operational parameters are also measured at 92-91-03.

Monthly flow measurements are required year round at JC-1 and JC-3. During the Second, Third, and Fourth Quarters, the Permittee also measures all field parameters, TDS, TSS, and Total Phosphorous at both sites once per quarter, plus isotopes C¹⁴, Tritium, Deuterium, and O¹⁸ at JC-1 once per quarter.

ELD-1 is reported with the “other” or “in-mine, roof drippers” sites. Well JC-3 is permitted as a UPDES point by PacifiCorp. That permit requires PacifiCorp to report flow, oil & grease, TDS, NH₃, N as nitrate + nitrite, plus total and dissolved As, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Se, Ag, Zn, and P. Since July 2004, JC-3 has discharged only once, in October 2007.

UPDES

YES NO

The UPDES Permit and MRP require weekly monitoring of 3 outfalls: *001, Sedimentation Pond Discharge to Eccles Creek at the Portal; 002, Sedimentation Pond Discharge to Eccles Creek at the Loadout; and 003, the Sedimentation Discharge at the Waste*

Rock Disposal Site. DMR parameters (total Fe, TDS, pH, TSS, flow, oil and grease, and specific conductivity, and temperature) are reported to the database as operational parameters. Total Fe is analyzed twice per month rather than weekly. Parameters that are not included in the operational parameter lists in the MRP - such as sanitary wastes, visible foam, and floating solids - are not reported in the electronic submittal to the Division.

Well JC-3 is permitted as a UPDES point by PacifiCorp. For JC-3, Skyline monthly flow and quarterly field parameters, TDS, TSS, and T-P during the Second, Third, and Fourth Quarters. (The UPDES permit for JC-3 requires PacifiCorp to report flow, oil & grease, TDS, NH₃, N as nitrate + nitrite, plus total and dissolved As, Cd, Cr, Cu, Fe, Pb, Hg, Ni, Se, Ag, Zn, and P.) Since July 2004, JC-3 has discharged only once, in October 2007.

2. Were all required parameters reported for each site?

Springs YES NO

S15-3: Tritium
S24-1: Tritium
2-413: Tritium
8-253: Tritium

Streams YES NO

EL-1: Tritium
EL-2: Tritium

Wells YES NO

JC-1 AGE: Tritium, Carbon 14, Deuterium, Oxygen 18

UPDES YES NO

3. Were any irregularities found in the data?

Springs YES NO

S10-1: TDS

Streams YES NO

CS-17: Cl
CS-19: Cond, SO₄
CS-20: D-Mg, D-K, SO₄
CS-21: D-Mg, T-Hardns, SO₄
CS-25: D-Mg, D-K, SO₄, Cl

Wells YES NO

92-91-03: Elevated T-Fe

UPDES YES NO

UPDES permit UT0023540 (effective December 1, 2009) allows for a maximum daily effluent limitation (MDEL) for total dissolved solids (TDS) of 1,200 mg/L and a 30-day average of 500 mg/L. There is no tons/day loading limit unless the 30-day average exceeds 500 mg/l; then a 7.1 tons/day limit is imposed. Because of ongoing exceedances, particularly at outfall 001, Canyon Fuel Company participates in the Salinity Offset Plan that was approved by DWQ on January 5, 2005 (retroactive to September 2004).

Other YES NO

4. On what date does the MRP require a five-year re-sampling of baseline water data.

Beginning in 2010 and every five years thereafter, baseline analyses are to be done on samples collected during the 3rd Quarter (MRP p. 2-44). Baseline will be collected in 2020.

5. Based on your review, what further actions, if any, do you recommend?

None.

6. Does the Mine Operator need to submit more information to fulfill this quarter's monitoring requirements? YES NO

The operator has been notified of missing data needing to be uploaded to the database for the 3rd quarter. Stream CS-7 needs Field Parameters uploaded and EL-2 needs tritium uploaded for Q3. Spring S35-8 is missing Field Parameter data for Q3.

7. Follow-up from last quarter, if necessary.

The Permittee must submit outstanding age dating analysis when it becomes available. All previous quarter data has been submitted.

8. Did the Mine Operator submit all the missing and/or irregular data (datum)?

Yes.