

WATER QUALITY MEMORANDUM

Utah Coal Regulatory Program

June 30, 2020

TO: Internal File

THRU: Steve Christensen, Coal Program Manager 

FROM: Kendra Hinton, Environmental Scientist 

RE: 4th Quarter 2019 Water Monitoring, Canyon Fuel Company, LLC, Skyline Mine. C/007/005, Task ID #6110

The Skyline Mine is an operating longwall mine. Operations are finished in the north and are now progressing south 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.

Springs are not monitored during 1st quarter due to inaccessibility during the snowiest months.

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

Wells

YES NO

Missing P17-34-1

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

Missing UPDES data for outfalls 002, 003, and 004

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

S22-11 PH and conductivity are mixed up and missing flow and temp
S35-8 Missing temp., flow, PH
S36-12 Missing temp., flow, conductivity
2-413 Missing temp., flow, PH, Carbon 14

Streams YES NO

Wells YES NO

W20-28-1 No access-Blocked
15-21-2 No access-Blocked
W79-10-1b No access

JC-1 Missing Field parameters, TDS, TSS, T-P
P17-34-1 Water Level

UPDES YES NO

3. Were any irregularities found in the data?

The following parameters were more than 2 standard deviations from the mean:

Springs YES NO

S10-1: TSS, TDS, Total Iron—Flow 0.2 GPM
S17-2: PH
SW4-429: Cat-Ani
WQ-3-41: Temp, Dissolved Potassium, Dissolved Sodium, SO₄, TDS

Streams YES NO

CS-3: Conductivity
CS-9: Dissolved Potassium

CS-17: Cat-Ani
CS-18: Cat-Ani
CS-19: SO4, TDS
CS-20: D.O., SO4
CS-21: SO4, Cat-Ani
CS-25: SO4

Wells YES NO

92-91-03: Total Iron

UPDES YES NO

UPDES permit UT0023540 (effective May 1, 2015) 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 emailed to acquire the missing data related to appx errors.

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.