



**Canyon Fuel
Company, LLC**

A Subsidiary of Wolverine Fuels, LLC

Skyline Mine

Gregg A. Galecki, Sr. Environmental Engineer
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Helper, Utah 84526
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April 16, 2020

Steve Christensen
Coal Program Supervisor
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, Utah 84114-5801

RE: Huntington Canyon Water Monitoring Program, Clean Copies, Canyon Fuel Company, LLC,
Skyline Mine, C/007/005, Task #6082

Dear Mr. Christensen:

Attached are two sets of clean copy modifications to Section 2.3 of the M&RP to incorporate portions of the Huntington Canyon Water Monitoring Program (HCWMP). The Huntington Canyon Water Monitoring Program was generated from the Huntington Canyon Water Monitoring Agreement between Canyon Fuel Company, PacifiCorp, Huntington-Cleveland Irrigation Company, and the Carbon Water Conservancy District. Data generated from the HCWMP is supplied to the Division as a courtesy, the Division is not a 'party' in the agreement.

Attached to this cover letter are completed C1 and C2 forms, and the information to be incorporated into the M&RP.

If you have any questions, please call me at (435) 448-2636.

Sincerely,

Gregg A. Galecki
Sr. Environmental Engineer, Skyline Mine
Canyon Fuel Company, LLC

Skyline Mine

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APR 22 2020
DIV OF OIL, GAS & MINING

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change New Permit Renewal Exploration Bond Release Transfer

Permittee: Canyon Fuel Company, LLC

Mine: Skyline Mine

Permit Number: C/007/005

Title: Huntington Canyon Water Monitoring Program

Description, Include reason for application and timing required to implement:

Adding Huntington Canyon Water Monitoring Program to the permit CLEAN COPIES Task#6082

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

- | | |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ <input type="checkbox"/> increase <input type="checkbox"/> decrease. |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 2. Is the application submitted as a result of a Division Order? DO# _____ |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 4. Does the application include operations in hydrologic basins other than as currently approved? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 6. Does the application require or include public notice publication? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 7. Does the application require or include ownership, control, right-of-entry, or compliance information? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 9. Is the application submitted as a result of a Violation? NOV # _____ |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 10. Is the application submitted as a result of other laws or regulations or policies?
<i>Explain:</i> <u>Includes the Huntington Canyon Water Monitoring Agreement between parties outside the Division</u> |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 11. Does the application affect the surface landowner or change the post mining land use? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2) |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 13. Does the application require or include collection and reporting of any baseline information? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 15. Does the application require or include soil removal, storage or placement? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 16. Does the application require or include vegetation monitoring, removal or revegetation activities? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 17. Does the application require or include construction, modification, or removal of surface facilities? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 18. Does the application require or include water monitoring, sediment or drainage control measures? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 19. Does the application require or include certified designs, maps or calculation? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 20. Does the application require or include subsidence control or monitoring? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 21. Have reclamation costs for bonding been provided? |
| <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream? |
| <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | 23. Does the application affect permits issued by other agencies or permits issued to other entities? |

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

Dennis J. Brown Tanner
Print Name

Dennis J. Brown - GM 4/15/20
Sign Name, Position, Date

Subscribed and sworn to before me this 15 day of April, 2020

Melissa S. Willden
Notary Public

My commission Expires: _____
Attest: State of Utah 03-19, 2023 } ss:
County of Carbon



For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining
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analyses is conducted during the 3rd Quarter (July-September) every five (5) years beginning in 2010 and successively in 2015, 2020, 2025, etc. In other than the stated years, 3rd Quarter sampling will be identical to 2nd and 4th Quarter laboratory analyses. 4th Quarter monitoring (October-December) should be conducted prior to December due to snow conditions eliminating access.

Water quality samples are collected from the 33 selected springs in the project area. The samples are comprehensively analyzed each year for the parameters listed in Table 2.3.7-1 and Table 2.3.7-2. All water samples collected for use in this permit have been collected and analyzed according to methods in either the "Standard Methods for the Examination of Water and Wastewater" or the 40 CFR parts 136 and 434. A listing identifying the station types is shown on Table 2.3.7-3.

In addition to the collection of the outlined water quality data, water level data has been collected from each of the wells (if functional) as scheduled on Tables 2.3.7-1, 2.3.7-2, and 2.3.7-3, and noted on Plate 2.3.6-1. Water quality samples will be collected from the Waste Rock Disposal Site Well 92-91-03. Summary information on these observation wells is found on Table 2.3.7-4. Six (6) wells, W79-10-1A, 79-14-2B 20-4-2, 99-28-1, 79-22-2-1 and 79-22-2-2 have experienced casing failures, and have been properly abandoned. Well W79-10-1B failed with a blockage in 1st Quarter 2017, however close observation indicates it likely started to fail in late 2013 to early 2014. An analysis of Well W79-10-1B is available in Appendix A-1 Volume 2. There are no plans to replace these wells.

The amount of water discharged from each mine on each monitoring occasion will also be monitored at the mine mouth through the use of a totalizing flow meter or similar device. Significant changes in the source of water in the mine will be noted during the period of operation. Underground water pumped from each mine will be monitored for water quality. Mines #1, #2, #4 and #5 (Flat Canyon lease) discharge is sampled at Station CS-14. Mine #3 discharge from the North Lease is sampled at Station CS-12. Mine #2 water is also discharged at JC-3.

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should be accessible for the next several years. The results of the analyses will be monitored for changes in ages that may indicate changes in the source of the mine water inflows. These samples will be obtained as outlined in Table 2.3.7-1.

Samples of water discharging from springs 8-253 (Flat Canyon area), 2-413 (James Canyon), S24-1 (Sulfur Spring in Huntington Canyon), and S15-3 (Upper Huntington Creek) will be collected during the 2nd Quarter (April - June) and 4th Quarter (October - December) monitoring period and analyzed for tritium content. Additional tritium samples will be obtained from EL-1 (inflow to Electric Lake above JC-1 and JC-3 discharge) and EL-2 (outflow from Electric Lake) during the 2nd, 3rd, and 4th Quarter water monitoring periods. These samples will be collected for a period of three years beginning in the spring of 2004. The purpose of collecting these tritium samples, along with the tritium samples from JC-1, is to monitor the change in tritium content, if any, in the local aquifers and Electric Lake during spring, summer, and fall and over the three year period.

Surface-water will be monitored in the vicinity of the Winter Quarters Ventilation Facility (WQVF) by two (2) stream sites located both up- and downstream of the site, CS-20 and CS-24, respectively. The stream sites will monitor the surface-water ensuring neither the shaft or slope is compromising the surface water system. Groundwater Well 08-1-5 screened from 297-317 feet below the surface and will monitor the water elevation below the coal seam. No springs exist on the south facing slope where the WQVF pad is located. Spring WQ1-1 is located on the north-facing slope, is approximately 1/4-mile east of the WQVF pad and monitors near surface groundwater south and east of the WQVF site.

Both surface-water and groundwater monitoring sites were added in Woods Canyon as mining was extended to the east in Section 36, T12S, R6E. CS-25 will monitor stream flow downstream of all mining activity. Shallow groundwater along Woods Canyon Creek will be monitored by piezometers WC-1, WC-3, WC-5, WC-7 and WC-9. The shallow groundwater wells were discontinued after the 2016 field season as mining was completed in 2015 (See Plate 2.3.6-1a for historic WC- locations). Spring WQ36-1 will monitor groundwater within the Blackhawk formation above active mining areas.

Mines #4 and #5 Flat Canyon Area Monitoring

The monitoring site selection criteria has remained relatively consistent throughout the years with representative sites being selected from the baseline data. With the addition of the Flat Canyon lease, initial seep and spring data was collected beginning in 1997 in preparation of the Flat Canyon EIS. Baseline sampling in the Mine #4 and #5- Flat Canyon lease area resumed in 2006 and continued through 2016. The number of sites were refined based on proposed mining by adding some stream sites upstream of mining and selecting spring sites representative of the geologic units in areas proposed for undermining.

In the Mine #4 and #5 - Flat Canyon lease area the groundwater monitoring will include the addition of nine (9) springs in the near-surface active zone. Spring SW32-277 is located in the Price River formation, SW33-268, SW4-429, and SW5-590 are in the Castlegate Sandstone, and SW21-104, SW28-110, SW28-111, SW4-169, SW4-174 are in the Blackhawk Formation,

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respectively. Prior to DOGM approval of the Flat Canyon lease, DOGM personnel suggested monitoring of 'paired' springs; springs identified as being adjacent to each other during the 1997-1998 baseline surveys. Paired springs included SW4-169/SW4-174, SW28-110/SW28-111, and SW32-276/SW32-277. Numerous attempts to locate SW32-276 from 2016 through 2019 were unsuccessful and the spring was eliminated from the monitoring plan. Spring SW21-104 was added to provide a spring in Little Swens Canyon in the area to be subsided. Spring S33-268 had been an important spring since it is used by the campground, in 2019 the USFS decided to supply water to the campground due to maintenance problems with the water line. The spring is still an important source of water to the forest with plans to utilize the water at a future date.

To monitor the shallow Quaternary alluvial groundwater in the Boulger Canyon area a total of six (6) shallow piezometers will be added in 2017. Piezometers P17-4-1 (E & W), P17-33-1 (E & W), and P17-34-1 (N & S) are located adjacent to stream monitoring sites CS-30 and CS-33 (upstream of Boulger Reservoir) and CS-34 (below Boulger Reservoir). Plate 2.3.6-4 will provide the baseline potentiometric gradient information from wells once the information is collected.

Monitoring in the deeper inactive-zone of the Star Point Sandstone, both Wells 15-21-2 and JC-2 have been added to monitor water levels. To monitor water quality of the Star Point Formation, JC-1 has added operational lab analysis to the analytical schedule. Microscopic Particulate Analysis (MPA) has also been added to JC-1 to be collected during baseline sampling to check for communication with active-zone surface waters. Similar to monitoring in Mine #2, if sustained significant flows of groundwater (flows greater than 800 gpm) are encountered in the headgates or tailgates of panels in Mine #4, both lab analysis and tritium will be obtained and sampled on a quarterly basis as long as the sites are accessible. An MPA sample will also be collected from the in-mine site during baseline sampling if it is accessible. Plate 2.3.6-3 Mine Inflow Map will identify where inflows are encountered.

Surface Water Monitoring

Surface-water monitoring for the Flat Canyon lease area includes the addition of upstream-of-mining sites on the following creeks: Little Swens (CS-27), Swens Creek (CS-28), Flat Canyon (CS-29), Boulger above the reservoir (CS-30), and CS-31 on upper Boulger Creek above mining, respectively. To provide in-stream-flow information, stream sites CS-32 through CS-34, and CS-35 have been added to sections of Boulger Creek and Swens Creek, respectively, to monitor individual sections streams and tributaries. This is in addition to stream, springs, and wells that have been included in the Water Monitoring program for a number of years (See Appendix A-1, Volume 2 for baseline water analysis).

Table 2.3.7-1 provides the comprehensive water quality analytical schedule for all surface- and groundwater stations; Table 2.3.7-2 outlines field, operational lab, and baseline lab analysis; Table 2.3.7-3 groups the monitoring stations by drainage basin; Table 2.3.7-4 provides a summary of well information on the groundwater monitoring wells, and Plate 2.3.6-1 graphically illustrates the location of all the hydrologic monitoring stations. Plate 2.3.4-2 will provide the baseline potentiometric gradient information from wells

Huntington Canyon Water Monitoring Program

In December 2017 Skyline personnel (CFC) worked cooperatively with PacifiCorp, the Huntington-Cleveland Irrigation Company (HCIC), and the Carbon Water

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Conservancy District (CWCD) to create both the Huntington Canyon Water Monitoring (HCWMP) Agreement (agreement) and the Huntington Canyon Water Monitoring Program (program). Per the agreement, CFC and PacifiCorp are considered the **"Monitoring Parties"**. See attachment 2.3-1 at the end of Section 2.3 for a copy of the program. The program incorporated additional monitoring sites and instrumentation for continuous monitoring of both streams and wells to be monitored by both CFC and PacifiCorp. Information from the monitoring sites are collected and distributed to the parties on a quarterly basis, provided sites can be safely accessed. In the event continuous monitoring equipment malfunctions due to weather or other circumstances, an explanation of the issue will be provided, and manual readings will be collected on a monthly basis when accessible. As an example, stream transducers may need to be pulled annually due to freezing or low-flow conditions. CFC monitoring sites have been incorporated into Table 2.3.7-1 and illustrated on Plate 2.3.6-1. Mine inflows greater than 200 gpm and sustained for longer than 60-days will be documented on both Table 2.3.7-5 and Plate 2.3.6-3. Mine inflow information will be submitted to the parties on a quarterly basis, with the M&RP being updated on an annual basis. Table 2.3.7-6 outlines the reporting requirements of the HCWMP. Well nomenclature have been updated so, "B" represents wells screened in the Blackhawk formation, and "S" represents wells screened in the Star Point sandstone, respectively.

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Table 2.3.7-1
 Comprehensive Water Quality Analytical Schedule
 (Surface and Ground Water Stations)

Sample Site	1st Quarter						2nd ² / 3rd ³ / 4th Quarters																	
	Lab Analysis ^a	Field parameters only ^{*1}	Monthly Flow	Dissolved Oxygen	TDS, TSS, T-P	TDS, TSS	O & G	Lab Analysis ^a	Dirty Field parameters* only ¹	Quarterly Flow	Monthly Flow	Flow Monitoring (HCWMP) ^{4, 5}	Water Level Monitoring (HCWMP)	Monthly Seasonal Flow	Manual Quarterly Water Level	Dissolved Oxygen	TDS, TSS, T-P	TDS, TSS	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18	
CS-3								X																
CS-6**	X			X			X								X									
CS-7 (F-5)								X			X													
CS-8								X			X													
CS-9								X																
CS-10 (C-1)								X			X													
CS-11								X													X			
CS-12	X							X																
CS-13	X							X																
CS-14***	X							X																
CS-16 (C-3)								X			X										X			
CS-17 (C-2)								X			X													
CS-18 (C-4)								X																
CS-19								X																
CS-20								X													X			
CS-21								X																
CS-22									X															
CS-23									X															
CS-24								X							X						X			
CS-25								X																
CS-26								X																
CS-27								X																
CS-28																					X	X		
CS-29 (C-6)								X																
CS-30 (C-8)								X																
CS-31								X			X													
CS-32									X															
CS-33									X															
CS-34									X															
CS-35									X															
MD-1			X	X		X				X											X			
SRD-1			X							X														
F-10								X			X													
UP&L-10								X																
VC-6	X			X				X							X						X			
VC-9	X			X				X							X						X			
VC-10		X						X																
VC-11									X															
VC-12									X															

Table 2.3.7-1
 Comprehensive Water Quality Analytical Schedule
 (Surface and Ground Water Stations) (continued)

Sample Site	1st Quarter					2nd ² / 3rd ³ / 4th Quarters																
	Lab Analysis ^a	Field parameters only ^{*1}	Monthly Flow	Dissolved Oxygen	TDS, TSS, T-P	O & G	Lab Analysis ^a	Qtrly Field parameters* only ¹	Quarterly Flow	Monthly Flow	Flow Monitoring (HCWMP) ^{4,5}	Water Level Monitoring (HCWMP)	Monthly Seasonal Flow	Manual Quarterly Water Level	Dissolved Oxygen	TDS, TSS, T-P	TDS, TSS	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18
Streams (cont.)																						
WRDS #1							X												X			
WRDS #2							X												X			
WRDS #3							X												X			
WRDS #4							X												X			
EL-1																					X	
EL-2																					X	
Springs																						
S10-1							X															
S12-1							X															
S13-2							X															
S13-7							X															
S14-4							X															
S15-3							X													X		
S17-2							X															
S22-5							X															
S22-11							X															
S23-4							X															
S24-1 Sulfur Spring							X													X		
S24-12							X															
S25-32							X															
S26-1							X															
S26-13							X															
S34-12							X															
S35-8							X															
S36-12							X															
SW21-104							X															
SW28-110							X															
SW28-111							X															
SW4-169							X															
SW4-173							X															
SW4-429							X															
SW5-590							X															
SW32-277							X															
SW-33-268							X															
2-413							X													X		
3-290							X															
8-253																				X		
WQ1-1							X															
WQ1-39							X															
WQ3-6							X															
WQ3-26							X															
WQ3-41							X															
WQ3-43							X															
WQ4-12							X															
WQ36-1							X															

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Table 2.3.7-1
 Comprehensive Water Quality Analytical Schedule
 (Surface and Ground Water Stations) (continued)

Sample Site	1st Quarter					2nd ² / 3rd ³ / 4th Quarters																
	Lab Analysis ^a	Field parameters only ^{a,1}	Monthly Flow	Dissolved Oxygen	TDS, TSS, T-P	O & G	Lab Analysis ^a	Qtrly Field parameters* only ¹	Quarterly Flow	Monthly Flow	Flow Monitoring (HCWMP) ^{4,5}	Water Level Monitoring (HCWMP)	Monthly Seasonal Flow	Manual Quarterly Water Level	Dissolved Oxygen	TDS, TSS, T-P	TDS, TSS	O & G	Carbon 14	Tritium	Deuterium	Oxygen 18
Wells																						
JC-1 (S)		X					X	X						X				X	X	X	X	
JC-2 (S)										X		X										
JC-3 (S)		X					X	X						X								
ELD-1		X						X														
W79-26-1 (B)													X									
W2-1(98-2-1)(S)											X		X									
W99-4-1 (S)											X		X									
W20-28-1 (S)											X		X									
92-91-03							X															
08-1-5 (S)													X									
15-21-2 (S)											X		X									
16-24-1 (S)													X									
17-21-1 (B)											X		X									
17-34-1B											X		X									
17-34-1S											X		X									
18-28-1B											X		X									
18-32-1B											X		X									
18-32-1S											X		X									
18-5-1S											X		X									
19-5-1B											X		X									
P17-4-1 (E&W)													X									
P17-33-1 (E&W)													X									
P17-34-1 (N&S)													X									
Sustained in-mine flow >200 GPM for 60 days							X														X	

* Field Measurements and Laboratory Analyses are defined in Table 2.3.7-2

^aField parameters will be taken in conjunction with samples collected for Lab Analyses

¹Sites with at least two (2) years of laboratory analysis data will be sampled once every five (5) years for the currently approved laboratory parameters in Table 2.3.7-2 beginning in 2010. If field parameter monitoring indicates any trending changes, regular laboratory analysis may be resumed until trend is adequately characterized.

²2nd Quarter sampling may extend to July 15 in years when spring snow conditions do not allow access before June.

³Baseline Lab Analysis will be conducted every five (5) years beginning in 2010 in the 3rd quarter. (ie. Years 2010, 2015, 2020, etc.) (JC-1 and In-mine shall include Microscopic Particulate Analysis (MPA))

(HCWMP)⁴ - Sites are incorporated as part of the Huntington Canyon Water Monitoring Program (HCWMP)
 (HCWMP)⁵ - Stream transducers may be pulled during winter months due to ice.

** Flow measurements discontinued at CS-6 in 12/2009, lower Eccles flow documented with VC-9

*** CS-14 represents mine in-flows and discharges from Mines #1, #2, and #4 (the SW districts of the Mine).

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Table 2.3.7-3

MONITORING STATION IDENTIFICATION

ECCLES CANON/MUD/FISH CREEK DRAINAGESSTREAM STATIONS

15 Stations

CS-3	CS-6	CS-9	CS-11	CS-19	CS-20	CS-24
CS-21	VC-6	VC-9	VC-10	VC-11	VC-12	CS-25
CS-26						

HUNTINGTON CANYONSTREAM STATIONS

21 Stations

CS-7 (F-5)	CS-8	CS-10	CS-16	CS-17	CS-18
CS-22	CS-23	UPL-10	F-10	EL-1	EL-2
CS-27	CS-28	CS-29	CS-30	CS-31	CS-32
CS-33	CS-34	CS-35			

MINE DISCHARGE STATIONS

4 Stations

CS-12 (Mine #3)	CS-14 (Mines #1, #2, #4)	MD-1 (Composite CS-12 & CS-14)
SRD-1 (Total Mine Site Discharge to Eccles Creek/Scofield reservoir)*		

FRENCH DRAIN STATIONS

1 Station

CS-13

WASTE ROCK DISPOSAL SITESTREAM STATIONS

4 Stations

WRDS #1	WRDS #2	WRDS #3	WRDS #4
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GROUNDWATER STATIONSSPRINGS

38 Stations

S10-1	S12-1	S13-2	S13-7	S14-4	S15-3	S17-2
S22-5	S22-11	S23-4	S24-1 Sulfur	S24-12	S36-13	S34-12
S35-8	S36-12	2-413	3-290	WQ1-39	WQ3-6	WQ3-26
WQ3-41	WQ3-43	WQ4-12	8-253	WQ1-1	WQ36-1	S25-32
S26-1	SW21-104	SW28-110	SW28-111	SW4-169	SW4-173	SQ4-429
SW5-590		SW32-277	SW33-268			

WELLS (MONITORING)**

25 Well Stations

	92-91-03	W79-26-1 (B)	W2-1 (98-2-1) (S)		W99-4-1 (S)
JC-1 (S)	JC-2 (S)	JC-3 (S)	W20-28-1 (S)	W08-1-5 (S)	15-21-2 (S)
W16-24-1 (S)	W17-21-1 (B)	W17-34-1B	W17-34-1S	W18-28-1B	W18-32-1B
W18-32-1S	W18-5-1S	W19-5-1B	P17-4-1(E & W)	P17-33-1(E&W)	P17-34-1(N&S)
ELD-1 (Total of JC-1 and JC-3)					

WELLS, CULINARY -Referenced but not monitored

W13-1	W13-2	W17-1	W17-3	W24-1
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NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)

001 Portal Area	002 Loadout	003 Waste Rock Area	004 Winter Quarters	JC-3 James Cyn
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* Sites are monitored for total flow only and the results are reported to the Division on a monthly basis

** See Table 2.3.7-4 for well detail

*** (S) or (B) has been added to pre-existing wells representing screened formation(i.e. Star Point or Blackhawk)

Revised

1/10/2020

JUN 12 2020²⁻³⁸

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TABLE 2.3.7-4
SUMMARY INFORMATION ON GROUNDWATER OBSERVATION WELLS

Well Designation	Other Designation	Year Drilled	Monitored yes/no	Operational Status	Aquifer Represented/ Monitored Formation Name & Type	Screened Interval, Top & Bottom Elevations, Mean Sea Level	Total Depth Drilled (FT)	Collar Elev Ground Elevation (FT)	Total Depth of Well Elevation (FT)	Top of Casing (FT) above collar	Date & Current Water Level Elevation, Mean Sea Level	Historical Range of Water Level Elevation, Mean Sea Level	Name of Associated Coal Seam	Vertical Distance from Screened Interval to Associated Coal Seams (Above or Below)	Well Location, Township, Range, & Section
W10-1	W79-10-1A*	1979	No	Abandoned	Star Point - Sandstone (Storrs Tongue)	7393.0-7373.0 5	2190	9379.4	7189.4	2.8	Sept. 2002; 9017.3	9034.6-8891.7	Lower O'Connor "A"	Through Coal Seam	T 13 S, R 6 E, Sec. 10
	W79-10-1B*	1979	No	Blocked	Blackhawk		1110	9382.8	8272.8	2.8	6/15/16; 8950.4	9039.3 - 8891.7			T 13 S, R 6 E, Sec. 10
W14-2	W79-14-2A*	1979	Yes	Active	Blackhawk	8342.0-8322.0	122	9051.7	8929.7	3	6/24/16; 9028.51	9049.1 - 8963.1	Lower O'Connor "A"	Through Coal Seam	T 13 S, R 6 E, Sec. 14
	W79-14-2B*	1979	No	Casing failed 6/89	Starpoint		965	9047	8082	3					T 13 S, R 6 E, Sec. 14
W22-2	W79-22-2-1*	1979	No	Blocked	Blackhawk		585	9040	8455	2.5					T 13 S, R 6 E, Sec. 22
	W79-22-2-2*	1979	No	Casing failed 9/85	Starpoint		1395	9041.8	7646.8	2.5					T 13 S, R 6 E, Sec. 22
W26-1	W79-26-1*	1979	Yes	Active	Blackhawk - Sandy Siltstone	8411.0-8391.0	200	9012	8812	2.8	6/15/16; 8949.5	8976.5 - 7598.3	Lower O'Connor "B"	Through Coal Seam	T 13 S, R 6 E, Sec. 26
W35-1	W79-35-1A*	1979	No	Blocked	Star Point - Sandstone (Storrs Tongue)	8092.0-8072.0	1000	8726.4	7726.4	2.5	8/27/12; 8296.1	8557.7 - 8171.6	Lower O'Connor "A"	5' Below Coal Seam	T 13 S, R 6 E, Sec. 35
	W79-35-1B*	1979	No	Blocked	Blackhawk - Sandy Siltstone	8542.4-8504.4	220	8726.4	8506.4	2.5	10/29/14; 8611.2	8618.5 - 8534.6	Not associated with coal seam		T 13 S, R 6 E, Sec. 35
W2-1	98-2-1	1998	Yes	Active	Starpoint - Sandstone (Panther Tongue)	8030.4-8000.4	1519	9271	7752		6/10/16; 8403.31	8551.4-8325.3	Lower O'Connor "B"	Through Coal Seam	T 14 E, R 6 E, Sec. 2
JC-1	n/a	2001	Yes	Active	Star Point - Sandstone (Storrs Tongue)	7918.0-7858.0	1000	8797	7797		No Current Data	No Current Data	Lower O'Connor "B"	11.5' Below Coal Seam	T 13 S, R 6 E, Sec. 35
JC-2	n/a	2002	Yes	Active	Star Point - Sandstone (Storrs Tongue)	7886-7946	1000	8796	7796		No Current Data	No Current Data	Lower O'Connor "B"	Below Coal Seam	T 13 S, R 6 E, Sec. 35
JC-3	n/a		Yes	Active	Star Point - Sandstone (Storrs Tongue)	8061.7-8018.0, 7730.5-1-7711.1					No Current Data	No Current Data	Lower O'Connor "B"	Through Coal Seam	T 13 S, R 6 E, Sec. 35
99-4-1	n/a	1999	Yes	Active	Star Point - Sandstone (Storrs Tongue)	7551.0-7521.0	1470	8842	7372		6/10/16; 8533	8562.1 - 8483.6	Lower O'Connor "B"	Through Coal Seam	T 14 S, R 6 E, Sec. 4
99-21-1	n/a	1999	No	Blocked	Star Point - Sandstone (Panther Tongue)	7431.3-7401.3	2050	9347	7297		12/18/14; 8287	8320.3 - 8277.3	Flat Canyon (Middle Seam)	Through Coal Seam	T 13 S, R 6 E, Sec. 21
99-28-1	n/a	1999	No	Abandoned	Star Point - Sandstone (Panther Tongue)	7477.0-7447.0	2100	9351	7251		11/21/08; 8420.8	8420.8 - 8343.3	Flat Canyon (Middle Seam)	Through Coal Seam	T 13 S, R 6 E, Sec. 28
20-4-1	n/a	2000	No	Blocked	Star Point - Sandstone (Storrs Tongue)	7491.0-7464.0	1570	8874	7304		10/24/14; 8798	8798 - 8448.1	Lost Core	Lost Core	T 14 S, R 6 E, Sec. 4
20-4-2	n/a	2000	No	Abandoned	Star Point - Sandstone (Storrs Tongue)	7574.0-7544.0	2200	9554	7354		6/19/10; 8472.53	8478.7 - 8383.2	Lower O'Connor "A"	16' Below Coal Seam	T 14 S, R 6 E, Sec. 4
20-28-1	n/a	2000	Yes	Active	Star Point - Sandstone (Panther Tongue)	7420.0-7390.0	1690	8871	7181		6/24/16; 8371	8393.7 - 8355.4	Lower O'Connor "B"	Through Coal Seam	T 13 S, R 6 E, Sec. 28
91-26-1	North Lease	1991	No	Blocked	Starpoint	7698.1-7668.1	1876.7	9235	7358.3		6/19/15; 7851	7956 - 7802.7	Lower O'Connor "B"	Through Coal Seam	T 12 S, R 6 E, Sec. 26
91-35-1	North Lease	1991	No	Blocked	Starpoint	7616.9-7586.9	2450	9262	6812		11/8/12; 7955	8021.3 - 7911.2	Lower O'Connor "B"	Through Coal Seam	T 12 S, R 6 E, Sec. 35
92-91-03	n/a	1992	Yes	Active	Starpoint	7728.5-7977.5	132	7720	7852	3	6/14/16; 7977.5	7921.7 - 7867.9	Lower O'Connor "A"	Below Coal Seam	T 13 S, R 6 E, Sec. 4
8-1-5	n/a	2008	Yes	Active	Starpoint		327	8144	8140.5		6/14/16; 7868	7834.5-7972.3	Lower O'Connor "B"	Below Coal Seam	T 13 S, R 6 E, Sec. 1
15-21-2	n/a	2015	Yes	Active	Star Point - Sandstone	7014.0-7044.0	2142	9186	7044		10/20/16; 8350.4	8313.8 - 8350.4	Lower O'Connor "A"/ Flat Canyon	Below Coal Seam	T 13 S, R 6 E, Sec. 21
16-24-1	n/a	2016	Yes	Active	Star Point - Sandstone	Approx. 7541.0-7571.0	600	Approx. 8111	Approx. 7511		**	**	Lower O'Connor "A"	Below Coal Seam	T 12 S, R 6 E, Sec. 24
17-21-1	n/a	2017	Yes	Active	Blackhawk - Sandy Siltstone	1120-1200	1200	9005	7805						T13S, R6E, Sec.21
17-34-1B	n/a	2017	Yes	Active	Blackhawk - Sandy Siltstone	300-340	350	8609	8259						T13S, R6E, Sec.34
17-34-1S	n/a	2017	Yes	Active	Star Point - Sandstone	840-880	910	8609	7699						T13S, R6E, Sec.34
18-28-1B	n/a	2018	Yes	Active	Blackhawk - Sandy Siltstone	1100-1140	1160	9215	8055						T13S, R6E, Sec.28
18-32-1B	n/a	2018	Yes	Active	Blackhawk - Sandy Siltstone	1090-1120	1140	8932	7792						T13S, R6E, Sec.32
18-32-1S	n/a	2018	Yes	Active	Star Point - Sandstone	1640-1670	1680	8932	7252						T13S, R6E, Sec.32
18-5-1S	n/a	2018	Yes	Active	Star Point - Sandstone	2455-2515	2525	Approx. 9304	Approx. 6779						T14S, R6E, Sec.5
19-5-1B	n/a	2019	Yes	Active	Blackhawk - Sandy Siltstone	1730-1750	1755	Approx. 9304	Approx. 7549						T14S, R6E, Sec.5

Note: * The screen interval was determined by using the lowest minable coal seam; the screen was placed 3 feet below top of the coal seam; and a 20 foot screen was installed.
 Denotes wells not in monitoring program
 ** New well, data will be reported to DOGM

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**Table 2.3.7-5
In-Mine Monitoring
(60 -day Sustained In-Flows > 200 gpm)**

Site No.*	Location	Initial Date	Initial Flow (gpm)	Reduced Flow Date	Reduced Flow rate (gpm)	Comments
9	Mine 5 Mains XC205	7/11/2019	~264	10/23/2019	177.3	~200 gpm from #3 Entry

* Locations for Sites 1-8 and all future sites are illustrated on Plate 2.3.6-3. As stated on Page 2-35(e) this table will be updated on an annual basis, if necessary. Skyline intends to update this in conjunction with the Annual Report.

Revised 1-10-20

2-39(a)

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**Table 2.3.7-6
Huntington Canyon Water Monitoring Program (HCWMP)
CFC Report Requirements**

Requirement	Data Submittal*	Exception**	Format
HCWMP Stream sites	Quarterly download when accessible	Equipment failure	Excel spreadsheet
HCWMP Stream sites	Quarterly manual readings	When accessible	DOGM database
HCWMP Well sites	Quarterly download when accessible	Equipment failure	Excel spreadsheet
HCWMP Well sites	Quarterly manual readings	When accessible	DOGM database
Sustained Mine Inflows	Quarterly	When accessible	Annual M&RP update
Pacificorp Data***	Quarterly		Excel spreadsheet

* When accessible and equipment functioning

** If equipment fails or is removed due to winter conditions, monthly manual readings collected if accessible (2nd/3rd/4th quarters)

*** CFC is not responsible for Pacificorp data collection or submittal

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2-39 (b)

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**HUNTINGTON CANYON WATER MONITORING
PROGRAM**

The following outlines the Water Monitoring Program (the “**Program**”) for the Skyline Mine, Electric Lake, and the Huntington drainage, pursuant to the Huntington Canyon Water Monitoring Program Agreement adopted on December 28, 2017. This Water Monitoring program is collaboratively developed between Canyon Fuel Company, LLC (**CFC**) and PacifiCorp personnel as being supplemental to the water monitoring conducted per the Utah Division of Oil, Gas & Mining permit n. C/007/005 for the Skyline Mine. CFC and PacifiCorp personnel met in early February 2018 as the “**Monitoring Parties**” to develop and clarify implementation of the Program. The Monitoring Parties will provide copies of the Program Maps, as updated from time to time, to Huntington-Cleveland Irrigation Company (**HCIC**) and Carbon Water Conservancy District (**CWCD**), and will consider information submitted by HCIC and CWCD in developing and updating the Program Maps, but is not obligated to incorporate any information so provided.

Program Review: The Water Monitoring Program is scheduled to be reviewed by the Monitoring Parties on an annual basis. CFC and PacifiCorp personnel first met in early February 2018 to develop the Program for implementation.

Huntington Drainage Monitoring Maps: Plate A outlines the location of groundwater and surface water monitoring locations within the Huntington Drainage and tributaries above the Electric Lake dam for both CFC and PacifiCorp. See the Plate A legend for the status of both CFC and PacifiCorp wells that were installed in 2017 and scheduled locations for 2018 wells.

Groundwater Well Monitoring - CFC: CFC has committed to installing monitoring groundwater wells in both the Blackhawk Formation and the Star Point Sandstone. If any of these wells ceases to operate as intended as a monitoring well, CFC will immediately notify PacifiCorp. If the well/ well location is determined by both parties to be a necessary part of the program, a replacement plan will be developed within sixty (60) days of the date in which the well in question is noted to be ineffective. A pressure transducer with data logging capabilities will be installed in each monitoring well. **Table 1** lists the CFC wells.

Surface Monitoring - CFC: CFC commits to installing and maintaining surface water monitoring stations as outlined in **Table 2**. Each surface monitoring station shall be equipped with a permanent flow monitoring structure with automated continuous monitoring of flow.

Groundwater Well Monitoring - PacifiCorp: PacifiCorp has committed to install and maintain groundwater wells at critical locations within the southern portion of the Electric Lake - Huntington Drainage in both the Blackhawk Formation and the Star Point Sandstone. A pressure transducer with data logging capabilities will be in each monitoring well. **Table 3** lists the PacifiCorp wells.

Surface Monitoring - PacifiCorp: PacifiCorp commits to installing and maintaining surface water monitoring stations as outlined in *Table 4*. Each surface monitoring station shall be equipped with a permanent flow monitoring structure with automated continuous monitoring of flow.

Data Sharing: The Parties shall share all hydrological and groundwater data collected and/or developed related to the Huntington Drainage generated from the Monitoring Program. Data from the Groundwater well and Surface monitoring sites shall be collected by both CFC and PacifiCorp and transferred quarterly to the other Parties in an electronic format (Excel) no later than ten (10) business days following the end of each respective calendar quarter, providing the sites can be safely accessed. In addition to the network of monitoring sites listed in Tables 1 through 4, PacifiCorp will transmit data from the piezometers located on the Electric Lake dam.

In-Mine Monitoring: The Monitoring Program shall provide for the periodic measurement and chemical analysis of any sustained in-mine flows within the Addition (as outlined in the hydrologic agreement) which shall include documentation of all encountered sustained groundwater inflows in excess of 200 gpm with durations exceeding 60 days and chemical analysis (solute and age dating analysis) of the flows. Monitoring will continue as long as sites are safely accessible and the inflow is sustained above 200 gpm.

- (1) In-Mine Hydrologic Data Transmittal
 - a. CFC will transmit intercepted groundwater data to the other Parties on a monthly basis. (when the flow criteria is met)
 - b. CFC will transmit estimated inflow of Mine 4 development sections within the Addition to the other Parties on a monthly basis. (when the flow criteria is met)
 - c. CFC will transmit total mine discharge to Eccles Canyon to the other Parties on a monthly basis.

In-mine monitoring will cease upon the sealing of the mine portals, but will resume if the seals in the mine portals are subsequently breached.

Table 1 - CFC Well Monitoring Locations

Site	Alias	Geo Unit	Status
15-21-2		Str Pnt	Equip ordered
20-28-1		Str Pnt	Monitoring
99-4-1		Str Pnt	Monitoring
98-2-1	W2-1	Str Pnt	Monitoring
JC-2		Str Pnt	Monitoring
17-21-1	Loc.A	Blkhwk	Equip ordered
17-34-1B	Loc. D	Blkhwk	Monitoring
17-34-1S	Loc. D	Str Pnt	Monitoring
Location B		Blkhwk	Scheduled for 2018
Location C		Blkhwk	Scheduled for 2018
Location C		Str Pnt	Scheduled for 2018
Location E		Blkhwk	Scheduled for 2018
Location E		Str Pnt	Scheduled for 2018

Table 2 - CFC Surface Monitoring Locations

Site	Location	Status
CS-7	Burnout	Scheduled for 2018
CS-8	Kitchen	Scheduled for 2018
CS-10	Kitchen	Monitoring
CS-16	Swens	Scheduled for 2018
CS-17	Little Swens	Scheduled for 2018
CS-31	Upper Boulger	Permit pend.
UP&L-10	Huntington	Monitoring
F-10	James	Scheduled for 2018
HCIC	Lower Boulger	Monitoring

Table 3 - PacifiCorp Well Monitoring Locations

Site	Location	Geo Unit	Status
PC-AB	Bear Cyn	Blkhwk	Drilled
PC-AS	Bear Cyn	Str Pnt	Drilled
PC-BB	Cox Cyn	Blkhwk	Drilled
PC-CB	L. Eccles Cyn	Blkhwk	Drilled
PC-CS	L. Eccles Cyn	Str Pnt	Drilled
PC-DB	Coal Cyn	Blkhwk	Drilled
PC-DS	Coal Cyn	Str Pnt	Drilled
PC-EB	Red Gate Cyn.	Blkhwk	Drilled
PC-ES	Red Gate Cyn.	Str Pnt	Drilled

Table 4 - PacifiCorp Surface Monitoring Locations

Site	Location	Status
PC-S1	Bear Cyn	Install 2018
PC-S2	Cox Cyn.	Install 2018
PC-S3	Little Eccles Cyn	Install 2018
PC-S4	Carson Cabin Cyn	Install 2018
PC-S5	Coal Cyn	Install 2018
PC-S6	Red Gate Cyn	Install 2018
PC-S7 (UP&L-03)	E. Lake Outfall	Monitoring

Note: All wells completed in the Star Point except Cox Canyon

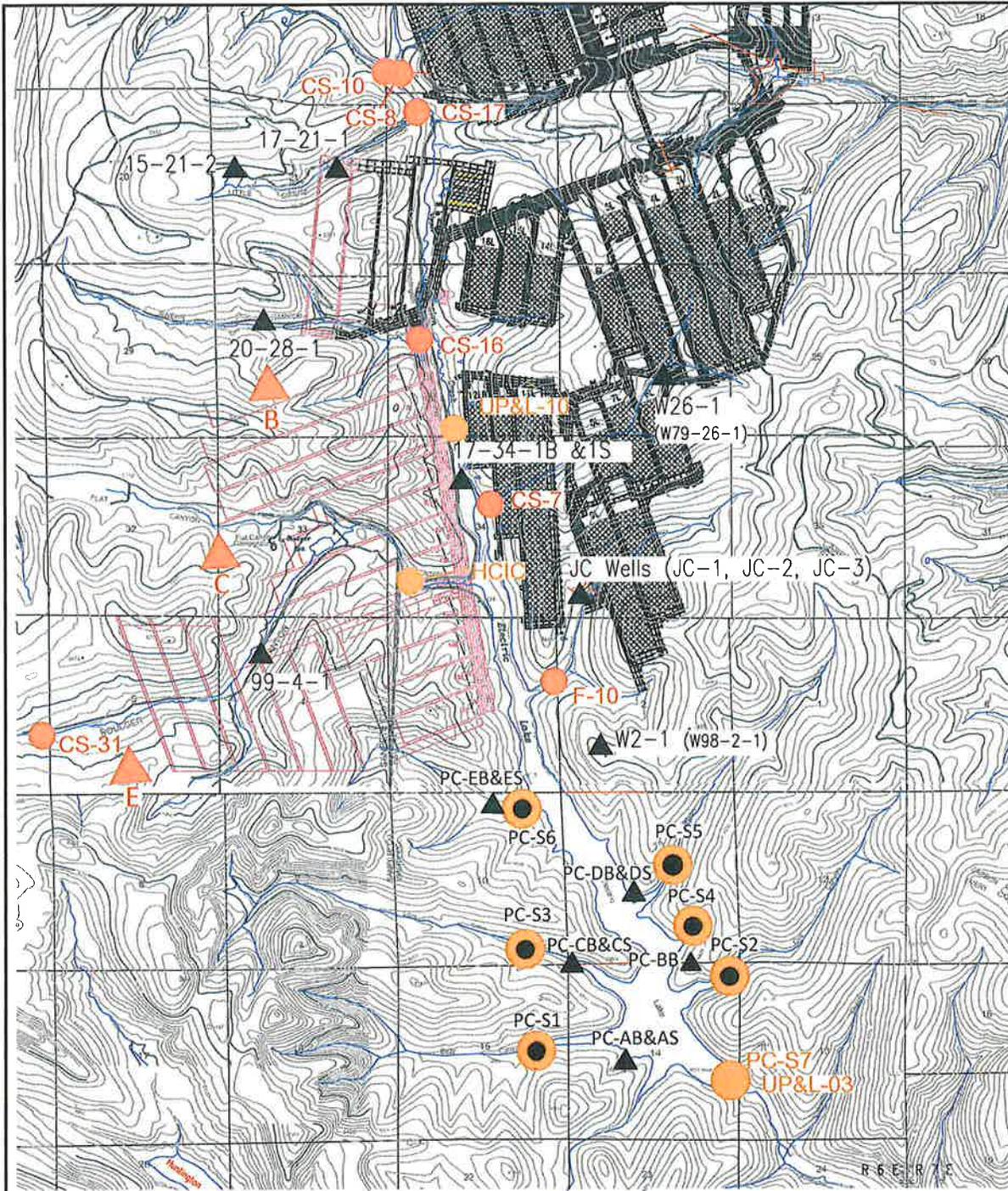
Revised 5/18/18/2018

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	-Future Pacificorp Surface Water Monitoring Location		-Installed CFC and Pacificorp Wells		-Future Mine Workings
	-Pacificorp Surface Water Monitoring Location		-Future CFC Wells		-Current Mine Workings
	-CFC Surface Water Monitoring Location				-Sealed Mine Workings

**Plate A - CFC and Pacificorp
Water Wells and Surface
Monitoring Locations**

CF Canyon Fuel Company, LLC
Skyline Mines

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Date: February 26, 2020

To: File

From: Gregg Galecki

Subject: Well W79-10-1B Removal from Water Monitoring Program

The following provides a historical summary for Well W79-10-1B that has not been officially functioning as a water monitoring well since June 16, 2016, due to a blockage encountered in the casing. The well is located in Section 10, Township 13 South, Range 6 East. It was originally drilled in 1979 to a depth of 1,110 feet and screened in the Blackhawk Formation; no screen interval information is available. The collar elevation at ground elevation is 9382.8 feet with total depth elevation of 8272.8 feet.

Attached are both the depth-to-water data (Table 1) and the same depth-to-water (DTW) data plotted with the Palmer Hydrologic Drought Index (PHDI) (Figure 1). The DTW data provides 2nd, 3rd, and 4th quarter measurements spanning from June 1996 through 2019, except in 1996, which had only two quarters of data. Graphing of the data clearly shows the water level having three (3) distinct ranges: from June 1996 through June 2001; September 2001 through October 2013; and June 2014 through October 2019. The 1996 – 2001 water depth averaged 477.15 feet (~8905 elevation) likely represented the true water elevation of the localized undisturbed Blackhawk formation in the area. The 111-foot water elevation increase from June 2001 of 470.7 feet (8912.1 elevation) to a September 2001 elevation of 359.7 feet (9023.1 elevation) was likely associated with the flooding of 'old' Mine #3 when significant water began to be encountered in Mine #2. As stated in the July 2002 PHC in describing Well W79-10-1B, "Prior to 2001, water levels in well 10-1 remained relatively constant and there was no indication of climatic or seasonal variability. This is because the deep groundwater horizon in which the well is completed is not in communication with the shallow subsurface." The water depth remained in the 344 – 376-foot range with some unexplained trending that did not parallel water levels in Mine #3, the PHDI, or other monitoring sites in the area through October 2013. Although there are periods of no discharge, 'old' Mine #3 has been continually inundated with water since 2001. Finally, in from October 2013 to June 2014 there was a drop of approximately 62 feet in the water level to approximately 438 feet (~8944 elevation). Arguably, this may signify when the well was breached and it took the next three years to drain and be blocked again at the current depth of 420 feet.

The well was surrounded by mining with the 4-, 5-, and 6-Left panels of 'old' Mine #3 in 1992 through 1994 and the 3- and 4-Left panels of Mine #3 in 2008 and 2009, respectively (Figure 2). The Lower O'Connor A seam was mined in the area, with overburden of approximately 2,000 at the location of the well. Although these time periods are not reflected in changes in the water depth data, the well could have been compromised at any point during those times.

The combination of the well begin blocked, the questionable data it had provided based on the wide fluctuations not noted in surrounding area, and the well being completed in the Blackhawk Formation which has discontinuous water zones all support removal from the monitoring program and the eventual abandonment of the well.

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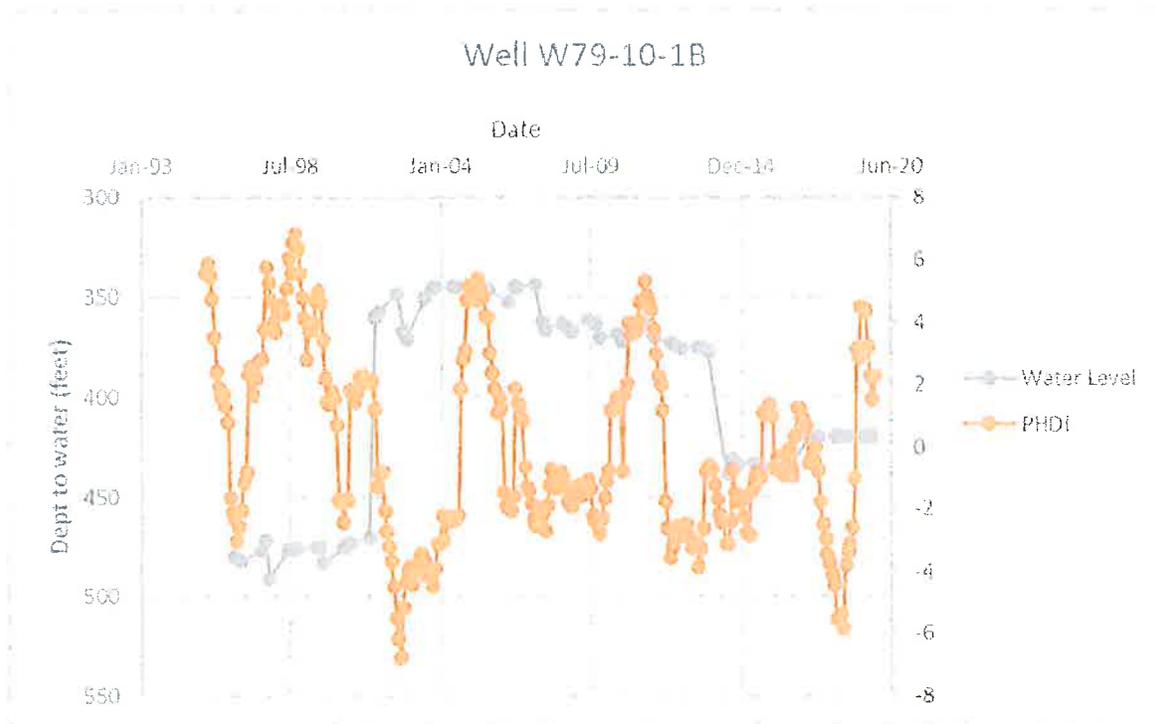


Figure 1

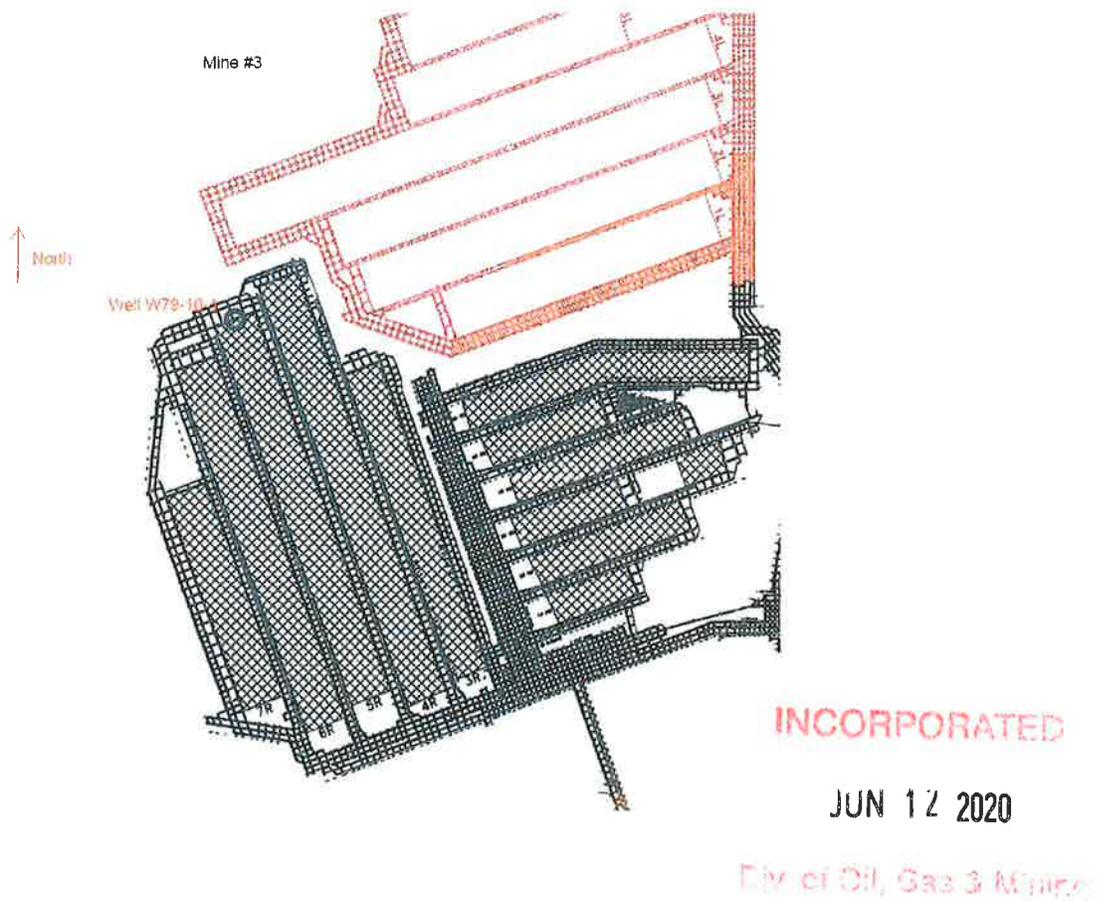


Figure 2

Table 1

**Well W79-10-1B
DOGM Data Download**

SITE NAME	SITE DESCRIPTION	DATE	Depth feet	WL feet	COMMENTS
W79-10-1b	Well, surface	10/14/2019	420	8962.8	Dry Wells
W79-10-1b	Well, surface	8/28/2019	420	8962.8	Dry Wells
W79-10-1b	Well, surface	6/28/2019	420	8962.8	Dry Wells
W79-10-1b	Well, surface	10/18/2018	420	8962.8	Dry Wells
W79-10-1b	Well, surface	7/20/2018	420	8962.8	Dry Wells
W79-10-1b	Well, surface	6/1/2018	420	8962.8	Dry Wells
W79-10-1b	Well, surface	10/13/2017	420	8962.8	Dry Wells
W79-10-1b	Well, surface	9/27/2017	420	8962.8	Dry Wells
W79-10-1b	Well, surface	6/16/2017	420	8962.8	
W79-10-1b	Well, surface	10/11/2016	434.05	8948.75	na
W79-10-1b	Well, surface	10/11/2016	434.05	8948.75	
W79-10-1b	Well, surface	8/17/2016	433.55	8949.25	
W79-10-1b	Well, surface	6/15/2016	432.35	8950.45	
W79-10-1b	Well, surface	10/14/2015	434.87	8947.93	
W79-10-1b	Well, surface	9/26/2015	435.96	8946.84	
W79-10-1b	Well, surface	6/17/2015	433.1	8949.7	
W79-10-1b	Well, surface	11/11/2014	433.77	8949.03	
W79-10-1b	Well, surface	9/5/2014	430.65	8952.15	
W79-10-1b	Well, surface	6/25/2014	438.4	8944.4	
W79-10-1b	Well, surface	10/18/2013	376.61	9006.19	
W79-10-1b	Well, surface	7/23/2013	374.8	9008	
W79-10-1b	Well, surface	6/10/2013	374.68	9008.12	
W79-10-1b	Well, surface	11/7/2012	375.55	9007.25	
W79-10-1b	Well, surface	9/20/2012	374.8	9008	
W79-10-1b	Well, surface	6/12/2012	372.63	9010.17	
W79-10-1b	Well, surface	11/11/2011	370.46	9012.34	
W79-10-1b	Well, surface	9/20/2011	367.78	9015.02	
W79-10-1b	Well, surface	7/8/2011	363.06	9019.74	
W79-10-1b	Well, surface	9/8/2010	372.01	9010.79	
W79-10-1b	Well, surface	6/20/2010	368.32	9014.48	
W79-10-1b	Well, surface	10/27/2009	370.37	9012.43	
W79-10-1b	Well, surface	9/9/2009	362.93	9019.87	
W79-10-1b	Well, surface	6/8/2009	360.9	9021.9	
W79-10-1b	Well, surface	10/28/2008	366.82	9015.98	
W79-10-1b	Well, surface	9/12/2008	364.74	9018.06	
W79-10-1b	Well, surface	6/26/2008	362.9	9019.9	
W79-10-1b	Well, surface	11/2/2007	366.17	9016.63	
W79-10-1b	Well, surface	9/28/2007	362.44	9020.36	
W79-10-1b	Well, surface	6/16/2007	343.54	9039.26	
W79-10-1b	Well, surface	11/3/2006	345.26	9037.54	
W79-10-1b	Well, surface	9/26/2006	344.68	9038.12	
W79-10-1b	Well, surface	6/29/2006	352.46	9030.34	

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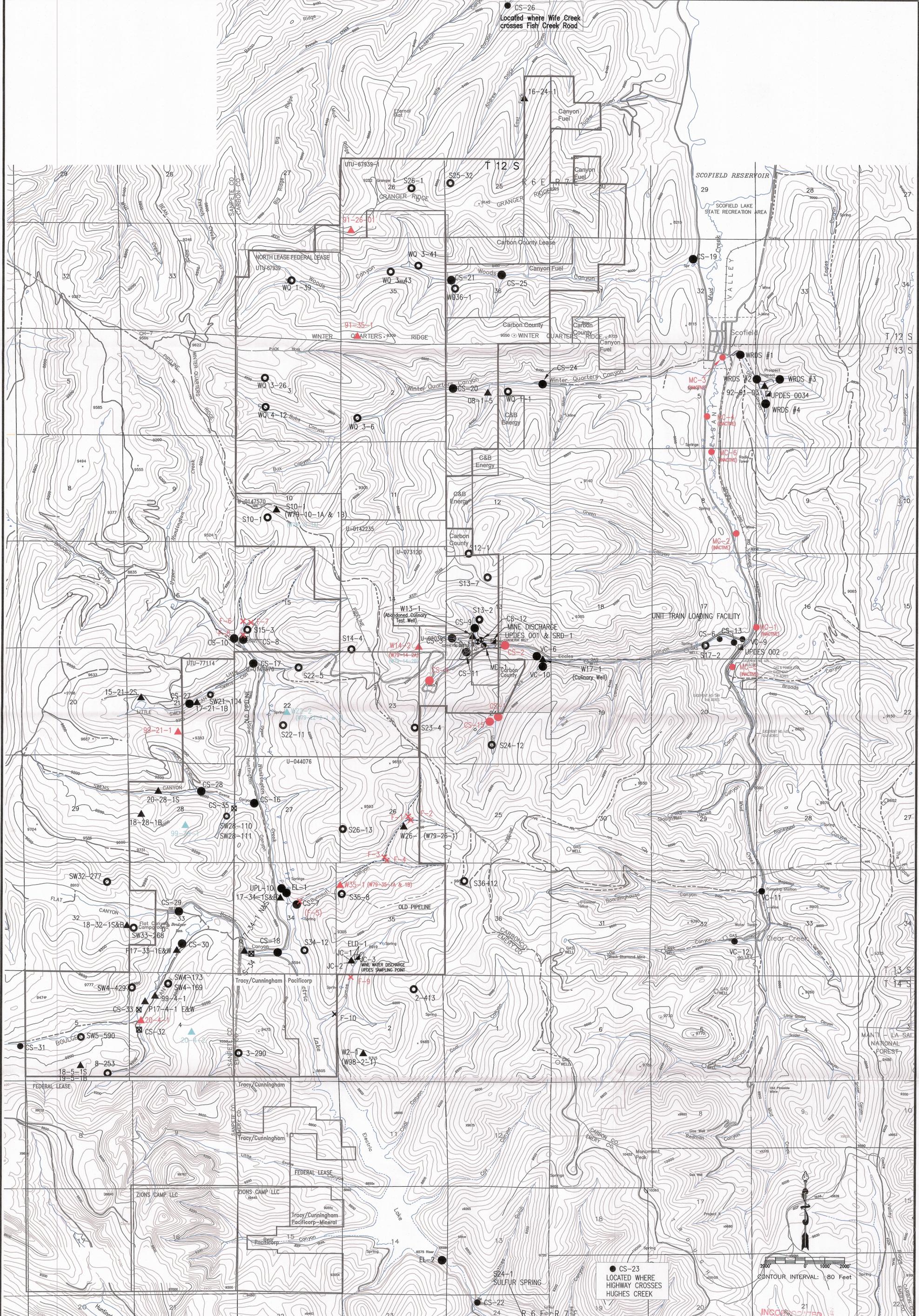
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W79-10-1b	Well, surface	10/13/2005	346.3	9036.5
W79-10-1b	Well, surface	9/10/2005	345.47	9037.33
W79-10-1b	Well, surface	6/22/2005	343.96	9038.84
W79-10-1b	Well, surface	9/2/2004	345.01	9037.79
W79-10-1b	Well, surface	6/22/2004	344.34	9038.46
W79-10-1b	Well, surface	11/5/2003	345.38	9037.42
W79-10-1b	Well, surface	9/17/2003	345.34	9037.46
W79-10-1b	Well, surface	6/16/2003	350	9032.8
W79-10-1b	Well, surface	10/16/2002	370.6	9012.2
W79-10-1b	Well, surface	9/5/2002	366.7	9016.1
W79-10-1b	Well, surface	6/17/2002	348.2	9034.6
W79-10-1b	Well, surface	10/23/2001	357.1	9025.7
W79-10-1b	Well, surface	9/3/2001	359.7	9023.1
W79-10-1b	Well, surface	6/18/2001	470.7	8912.1
W79-10-1b	Well, surface	10/2/2000	472.8	8910
W79-10-1b	Well, surface	8/7/2000	473.7	8909.1
W79-10-1b	Well, surface	6/27/2000	475.7	8907.1
W79-10-1b	Well, surface	10/6/1999	482.8	8900
W79-10-1b	Well, surface	8/17/1999	475.1	8907.7
W79-10-1b	Well, surface	6/29/1999	475.3	8907.5
W79-10-1b	Well, surface	10/17/1998	476	8906.8
W79-10-1b	Well, surface	8/22/1998	476.2	8906.6
W79-10-1b	Well, surface	6/22/1998	476.3	8906.5
W79-10-1b	Well, surface	10/9/1997	491.1	8891.7
W79-10-1b	Well, surface	8/15/1997	471.8	8902.1
W79-10-1b	Well, surface	6/23/1997	477.20	8905.60
W79-10-1b	Well, surface	9/11/1996	482.19	8900.61
W79-10-1b	Well, surface	6/15/1996	480.3	8902.5

INCORPORATED

JUN 17 2020

Div. of Oil, Gas & Mining



NOTES:
 1. COORDINATE BASE ON MINE GRID DATA.
 2. MAP DIGITIZED FROM 1:24000 USGS QUADRANGLE MAPS, SCOTFIELD, UTAH AND FAIRVIEW LAKES, UTAH.
 3. MINE FACILITY, CONVEYOR, AND NEW ECCLES CANYON ROAD LOCATIONS FROM EXISTING RECORD DATA AND INCORPORATED TO MAP IN BEST FIT LOCATIONS.
 4. UTM GRID TICK VALUES SHOWN ARE IN METERS.
 LOCATIONS F-1 THROUGH F-4 AND F-6 THROUGH F-8 ARE PART OF A USFS SUBSIDENCE STUDY ON BURNTOUT CREEK AND NOT PART OF THE M&RP WATER MONITORING PROGRAM.
 F-5 AND CS-7 ARE THE SAME LOCATION.
 BASE PREPARED BY INTERMOUNTAIN AERIAL SURVEYS, SALT LAKE CITY, UTAH - M96147

LEGEND

- STREAM
- SPRING
- ▲ WELL - MONITORING
- MINE DISCHARGE
- STREAM SUBSIDENCE POINTS
- FLUME LOCATION
- UPDES DISCHARGE POINTS
- ✕ DISCONTINUED
- ▲ ABANDONED
- ▣ STREAM - Flow Only

DATE	No.	REVISIONS	BY	DATE	No.	REVISIONS	BY
09/04/02	1			09/04/02	10	Updated Current Water Monitoring Sites, Discontinued W99-28-1, CS-4, F-9 and Removed the Permit Boundary	ARB/CAG
10/07/02	2			10/07/02	11	MODIFIED PERMIT BOUNDARY AND DISCONTINUED F-1 - F-8	ARB/CAG
04/03/03	3			04/03/03	12	REMOVED PERMIT BOUNDARY, ADDED LOCATION NOTE	UJH/CAG
06/04/03	4			06/04/03	13	RELOCATED CS-24, ADDED CS-25 AND WQ36-1	ARB/CAG
03/19/04	5			03/19/04	14	ADDED MC-1 THRU MC-9S, DISCONTINUED W20-4-2	ARB/CAG
06/18/04	6			06/18/04	15	ADDED MC-1 THRU MC-9S, DISCONTINUED W20-4-2	ARB/CAG
11/19/04	7			11/19/04	16	ADDED NUG SITES S25-32, S26-1 AND CS-28	ARB/CAG
05/05/05	8			05/05/05	17	ADDED SITES CS-27, -29 THRU -35; NINE (9) SW-SPRINGS, 15-22-2, BOUGER OR. PIZOMETERS, DISCONTINUED W. (Woods Owl) PIZOMETERS. (6) Filled wells: (W14-2, W79-35-1 A & B, 20-4-1, 91-35-1, 91-26-1)	ARB/CAG
JUNE 07	9	MODIFIED PERMIT BOUNDARY (IBC & WASTE ROCK) ADDED WQ1-1; INACTIVATED MC SITES	BR/CS	Dec 16	18	Added Huntington Canyon Monitoring Program wells	ARB/CAG

JUN 17 2020

SEE PLATE 1.6-3 FOR PERMIT AND ADJACENT AREAS

Location of Hydrologic Monitoring Stations

Canyon Fuel Company, LLC
Skyline Mines

SCALE: 1" = 2000' DATE: 04/04/01 CK.BY: GJaecki
DWG. NO.: 2.3.6-1 DR.BY: Teori

REVISION: 18
10/31/2019

Flow Data

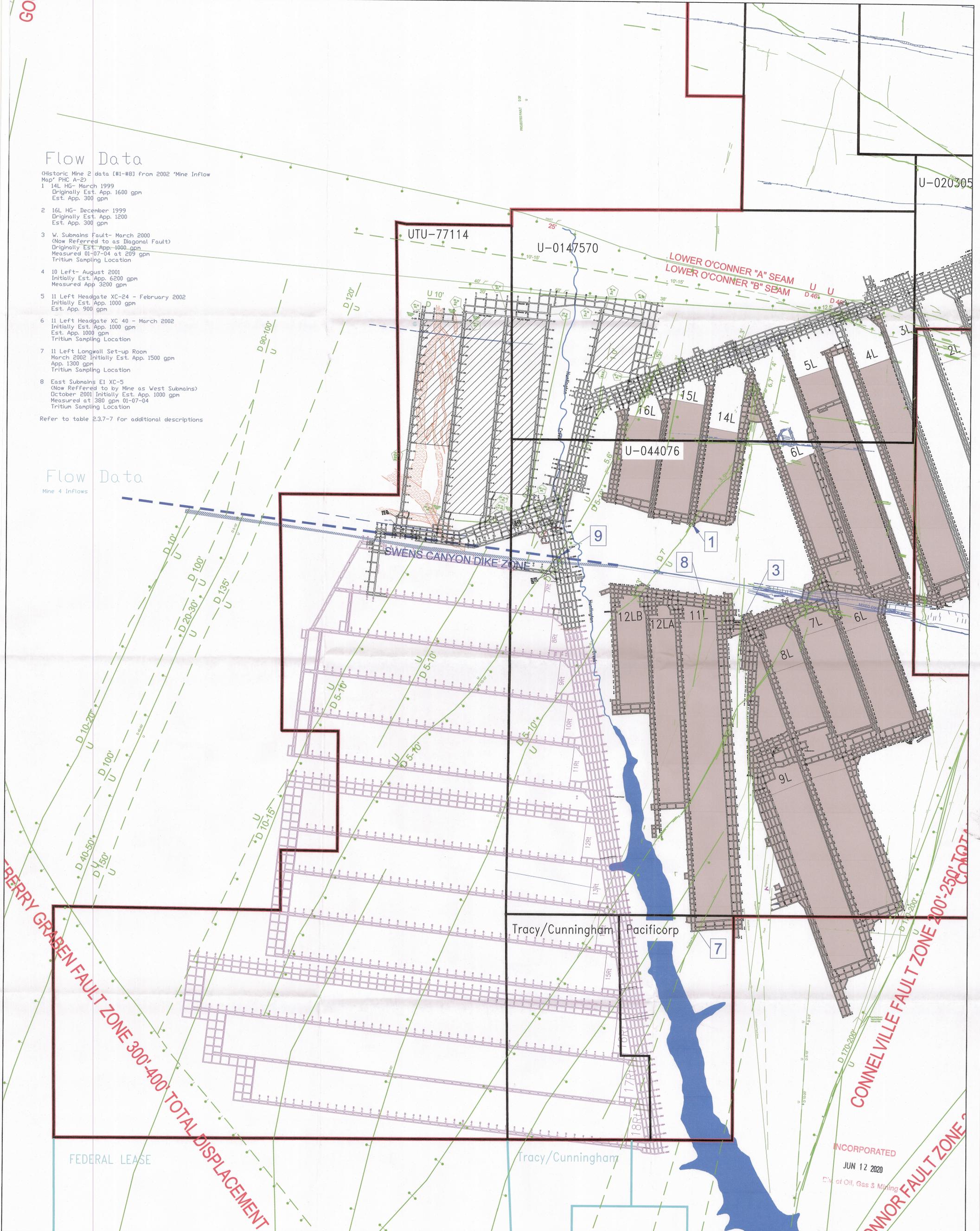
(Historic Mine 2 data [H1-#8] from 2002 'Mine Inflow Map' PHC A-2)

- 1 14L HG- March 1999
Originally Est. App. 1600 gpm
Est. App. 300 gpm
- 2 16L HG- December 1999
Originally Est. App. 1200
Est. App. 300 gpm
- 3 W. Submains Fault- March 2000
(Now Referred to as Diagonal Fault)
Originally Est. App. 1000 gpm
Measured 01-07-04 at 209 gpm
Tritium Sampling Location
- 4 10 Left- August 2001
Initially Est. App. 6200 gpm
Measured App 3200 gpm
- 5 11 Left Headgate XC-24 - February 2002
Initially Est. App. 1000 gpm
Est. App. 900 gpm
- 6 11 Left Headgate XC 40 - March 2002
Initially Est. App. 1000 gpm
Est. App. 1000 gpm
Tritium Sampling Location
- 7 11 Left Longwall Set-up Room
March 2002 Initially Est. App. 1500 gpm
App. 1300 gpm
Tritium Sampling Location
- 8 East Submains EI XC-5
(Now Referred to by Mine as West Submains)
October 2001 Initially Est. App. 1000 gpm
Measured at 380 gpm 01-07-04
Tritium Sampling Location

Refer to table 2.3.7-7 for additional descriptions

Flow Data

Mine 4 Inflows



LEGEND

- Faults
- Previously mined areas
- Projected mining areas
- Mine 2 Inflows (Historic)
- Mine 4 Inflows

Refer to table 2.3.7-7 for additional descriptions

DATE	No.	REVISIONS
10/20/19	1	Added inflow #9

NOTES:

1. COORDINATE BASE ON MINE GRID DATA.
2. MAP DERIVED FROM 1:24000 USGS QUADRANGLE. MAPS SOURCE: USGS AND TERRAIN DATA: USGS.
3. MINE FACILITY CONTOUR AND NEW EGGLES CANYON ROAD LOCATIONS FROM EXISTING RECORD DATA AND ADJUSTED TO MAP IN BEST FIT LOCATIONS.
4. UTM GRID TICK VALUES SHOWN ARE IN METERS.

SEE PLATE 1.6-3 FOR PERMIT AND ADJACENT AREAS

BASE PREPARED BY INTERNATIONAL ADVAL SURVEYS, SALT LAKE CITY, UTAH - 106147

INCORPORATED
JUN 12 2020
City of Oil, Gas & Mining

Mine Inflows
Mine 2 (Historic) &
Mine 4 and 5

Canyon Fuel Company, LLC
Skyline Mines

DATE: 12/30/16 CK BY: G.Galecki
SCALE: Full DR. BY: J.Armstrong
DWG. NO.: 2.3.6-3