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INTERWEST MINING COMPANY
A SUBSIDIARY OF PACIFICORP

November 19, 2018

Utah Coal Program
Utah Division of Oil, Gas, and Mining
1594 West North Temple, Suite 1210
P.O. Box 145801
Salt Lake City, Utah 84114-5801

Subject: Submittal of Clean Copies, Amendment to Deer Creek Mine MRP, PacifiCorp, Deer Creek Mine C/015/0018 (Task #5770), Emery County, Utah.

PacifiCorp, by and through its wholly-owned subsidiary, Interwest Mining Company, "Interwest", as mine operator, hereby submits 2 clean copies of the amendment to the Deer Creek Mine MRP, to reflect hydrologic monitoring transitioning from post mine closure to reclamation:

- Volume 1, R645-301-720 Hydrologic Resources and Monitoring Requirements, pages 2-220 to 2-225
- Volume 1, Hydrologic Resources and Monitoring Requirements, Hydrologic Data Map HM-1A
- Volume 9, Appendix A-1, Hydrologic Monitoring Program
- Volume 9, Appendix A-1, Hydrologic Monitoring Schedule
- Volume 9, Appendix A-1, Hydrologic Data Map HM-1A
- Volume 9, Maps Section, Remove Hydrologic Data Map HM-1A
- Volume 9, Maps Section, Remove Hydrologic Data Map HM-1B

This submittal includes revision to Volume 1, and Volume 9 Hydrologic Section Appendix A-1. The required C1/C2 forms are also included with this submittal.

If you have any questions concerning this submittal, please contact me or Chuck Semborski at 435-687-4820.

Sincerely,

Kenneth S. Fleck

Kenneth Fleck
Geology and Environmental Affairs Manager

Cc: file

Encl. Clean Copies, Volume 1,
Clean Copies, Volume 9 Hydrologic Section Appendix A-1
C1/C2 Forms

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: PacifiCorp

Mine: Deer Creek Mine **Permit Number:** C/015/0018

Title: Amendment to Volume 1, R645-301-720 Hydrologic Resources and Monitoring Requirements and Volume 9, Appendix A-1 to Reduce the Hydrologic Monitoring Program for Sites Within and Outside Mine Permit Boundaries, PacifiCorp, Deer Creek Mine C/015/0018, Emery County, Utah - Clean Copies Submittal

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

Hydrologic monitoring transitioning from operational to reclamation

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

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

Kenneth Fleck — Kenneth S. Fleck — Manager of Environmental Affairs NOV. 20, 2018
Print Name — Sign Name, Position, Date

Subscribed and sworn to before me this 20th day of November, 20 18

Miranda Lofley
Notary Public

My commission Expires: 03-26, 2022

Attest: State of Utah } } ss:
County of Emery

MIRANDA LOFLEY
NOTARY PUBLIC
STATE OF UTAH
COMMISSION # 699728
COMM. EXP. 03/26/2022

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: PacifiCorp

Mine: Deer Creek Mine **Permit Number:** C/015/0018

Title: Amendment to Volume 1, R645-301-720 Hydrologic Resources and Monitoring Requirements and Volume 9, Appendix A-1 to Reduce the Hydrologic Monitoring Program for Sites Within and Outside Mine Permit Boundaries, PacifiCorp, Deer Creek Mine C/015/0018, Emery County, Utah - Clean Copies Submittal

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☐ Add	☒ Replace	☐ Remove	Deer Creek Mine Permit Volume 1, R645-301-720 Hydrologic Resources and Monitoring Requirements, pages 2-220 - 225
☐ Add	☒ Replace	☐ Remove	Deer Creek Mine Permit Volume 1, Hydrologic Resources and Monitoring Requirements, Hydrologic Data Map HM-1A
☐ Add	☒ Replace	☐ Remove	Deer Creek Mine Permit Volume 9, Appendix A-1, Hydrologic Monitoring Program
☐ Add	☒ Replace	☐ Remove	Deer Creek Mine Permit Volume 9, Appendix A-1, Hydrologic Monitoring Schedule
☐ Add	☒ Replace	☐ Remove	Deer Creek Mine Permit Volume 9, Appendix A-1, Hydrologic Data Map HM-1A
☐ Add	☐ Replace	☒ Remove	Deer Creek Mine Permit Volume 9, Map Section Remove, Hydrologic Data Map HM-1A
☐ Add	☐ Replace	☒ Remove	Deer Creek Mine Permit Volume 9, Map Section Remove, Hydrologic Data Map HM-1B
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R645-301-720: HYDROLOGIC RESOURCES AND MONITORING REQUIREMENTS

Hydrology

The Deer Creek Mine is part of the East Mountain property in which PacifiCorp holds coal mining interests. The East Mountain property encompasses multiple adjacent mining operations including; Cottonwood/Wilberg Mine (completely reclaimed March 22, 2018), Deer Creek Mine, and the reclaimed Des Bee Dove Mine (Phase III Bond Released approved August 2014). PacifiCorp has collected comprehensive baseline information on the hydrologic resources of the East Mountain property that consists of ground and surface water investigations, climatological information, baseline cumulative impact area information, and probable hydrologic consequence determination to ensure the protection of the hydrologic balance of the Deer Creek Mine permit area and East Mountain property. This information is found in Volume 9, Volume 9A, and/or Volume 9B.

As part of the requirements of the Utah Coal Regulations R645-301-731.221 through R645-301-731.225, a hydrologic monitoring program has been established in cooperation with Utah Division of Oil, Gas, and Mining. The hydrologic monitoring program involves collecting water quality and quantity samples of ground and surface water for specific sites pertinent the Deer Creek Mine permit area.

PacifiCorp is reducing the extent of the mine's hydrologic monitoring to coincide with the final closure of the Deer Creek Mine. With the closure of the Deer Creek Mine, PacifiCorp has sealed all of the associated portals at Deer Creek Mine, including Deer Creek Canyon, Meetinghouse Canyon, Rilda Canyon Left Fork and Rilda Canyon 1st Right. Final coal production from PacifiCorp's mining operations was from the Deer Creek Mine on January 7, 2015. PacifiCorp maintained monitoring sites listed in the approved

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hydrologic monitoring plan for a minimum of three years after the last date of coal production (2015, 2016 and 2017) as outlined in the Memorandum of Understanding (USDI Bureau of Land Management, USDA Forest Service, State of Utah, Division of Oil, Gas and Mining "Processing of Requests to Relinquish Federal Coal Leases," 1996). PacifiCorp proposes to eliminate both surface and groundwater sites established to monitor active mining operations and transition to reclamation monitoring. Surface monitoring sites will be retained above and below completed and on-going reclamation activities.

The following details the hydrologic monitoring program for the Deer Creek Mine permit for surface and UPDES monitoring sites for Reclamation Monitoring, required sampling parameter list, and map showing site locations.

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Surface Water Hydrology (for detailed information for the Deer Creek Mine see Volumes 9, 9A, and 9B)

Huntington Creek Drainage System

Deer Creek Canyon (refer to Volume 9, Hydrologic Section, Cottonwood/Wilberg and Deer Creek Mines, Map HM-1A)

1) DCR01
2) DCR04
3) DCR06

Rilda Canyon (refer to Volume 9, Hydrologic Section, Cottonwood/Wilberg and Deer Creek Mines, Map HM-1A)

1) RCF1
2) RCLF1
3) RCLF2
4) RCF3
5) RCW4

UPDES Monitoring Locations - UPDES Permit #UT0023604

1) 001 - Sediment Pond - Deer Creek Canyon
2) 002 - Mine Discharge - Deer Creek Canyon
3) 003 - Mine Discharge - Huntington Creek

Post Mine Closure Monitoring Locations - Deer Creek Mine

1. Deer Creek Mine
   Rilda Canyon Pipeline - terminus of pipeline DCRCP (refer to HM-1A)
2. Deer Creek Mine
   Rilda Canyon Pipeline - integrity evaluation meters (refer to Volume 11, R645-3-1-500 Engineering Section, Appendix I, Design Drawings Deer Creek Mine Water Relief Pipeline 2016 Rilda Canyon for location of upper and lower vaults - meter locations)

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Required Monitoring Parameters

Field Measurements shall be collected during monitoring of surface and ground water sites. Field measurements include:

-Date and Time

-Flow

-pH

-Temperature

-Conductivity

-Dissolved Oxygen (perennial streams only)

Surface and mine discharge water samples shall be analyzed for quality utilizing the following parameters (in mg/L). Baseline parameters shall be collected every 5 years. Operational samples shall be collected at all other times and as dictated by the monitoring schedule.

Laboratory Measurements:

#	*	-	Total Settleable Solids (UPDES Only)
#	*	-	Total Suspended Solids (Surface Only)
	*	-	Total Dissolved Solids
	*	-	Total Hardness ($CaCO_3$)
		-	Acidity ($CaCO_3$)
		-	Aluminum (Al) - Dissolved
		-	Arsenic (As) - Dissolved
	*	-	Carbonate (CO_3^{-2})
	*	-	Total Alkalinity/Bicarbonate ($CaCO_3$)
		-	Cadmium (Cd) - Dissolved
	*	-	Calcium (Ca) - Dissolved
	*	-	Chloride (Cl-)
		-	Copper (Cu) - Dissolved
	*	-	Iron (Fe) - Total & Dissolved
		-	Lead (Pb) – Dissolved
	*	-	Magnesium (Mg) - Dissolved
	*	-	Manganese (Mn) - Total & Dissolved
		-	Molybdenum (Mo) - Dissolved
		-	Nitrogen: Ammonia (NH3) - reported as N
		-	Nitrite (NO_2) - reported as N
		-	Nitrate (NO_3^-) - reported as N
	*	-	Potassium (K) - Dissolved
	*	-	Oil & Grease*
		-	Ortho Phosphate (PO_4^{-3}) - reported as P
	*	-	Sodium (Na) - Dissolved
	*	-	Sulfate (SO_4^{-2})
		-	Zinc (Zn) - Dissolved
	*	-	Cation-Anion Balance

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Monitoring Schedule

Reclamation surface monitoring sites shall be field monitored

quarterly for all field parameters. Surface and UPDES sites shall also be analyzed for quality for all quality parameters listed.

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HYDROLOGIC MONITORING PROGRAM
DEER CREEK MINE

I. MONITORING LOCATIONS – DEER CREEK MINE

A. Surface Water Hydrology (for maps refer to Deer Creek and Wilberg/Cottonwood Mine: Volume 9 Map HM-1A, Deer Creek Volume 12 R645-301-700: Hydrologic Monitoring Map MFS1851D Mill Fork Lease for East Mountain locations listed below)

1. Huntington Creek Drainage System

a. ***Deer Creek*** (refer to Deer Creek and Wilberg/Cottonwood Mines: Volume 9 Map HM-1A)

(1) DCR01 - Above the mine:
(Approximately 600 feet upstream from the mine facility.) 200 feet North, 800 feet West of the Southeast corner of Section 10, Township 17 South, Range 7 East.

(2) DCR04 - Near C1/C2 Belt Intersection:
(Approximately 5,000 feet downstream from the mine facility.) 300 feet North, 2000 feet East of the Southeast corner of Section 2, Township 17 South, Range 7 East.

(3) DCR06 - @ Huntington Creek Confluence:
(Approximately 15,000 feet downstream from the facility) 1400 feet north, 1100 feet east of the southeast corner of Section 6, Township 16 South, Range 7 East.

b. ***Rilda Canyon*** (refer to Deer Creek and Wilberg/Cottonwood Mines: Volume 9 Map HM-1A)

(1) RCF-1 - Rilda Canyon - Right Fork:
(Approximately 4000 feet upstream from the Right and Left fork convergence.) 400 feet South, 200 feet West of the Northeast corner of Section 30, Township 16 South, Range 7 East.

(2) RCLF1 - Rilda Canyon - Left Fork, below Rilda Canyon Portals: (Approximately 200 feet upstream from the

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Right and Left fork convergence.) 2400 feet North, 2100 feet West of the Southeast corner of Section 29, Township 16 South, Range 7 East.

(3) RCLF2 - Rilda Canyon - Left Fork, above Rilda Canyon Portals: (Approximately 1600 feet upstream from the Right and Left fork convergence.) 1600 feet North, 2300 feet West of the Southwest corner of Section 29, Township 16 South, Range 7 East.

(4) RCF3 - Rilda Canyon - Below NEWUSSD springs: 2550 feet South, 1000 feet East of the Northeast corner of Section 28, Township 16 South, Range 7 East.

(5) RCW4 - Rilda Canyon: (Approximately 1000 feet upstream from the confluence with Huntington Creek.) 850 feet North, 1900 feet West of the Southeast corner of Section 26, Township 16 South, Range 7 East.

3. **Reclamation Monitoring:** Following final reclamation, backfilling and grading, hydrologic monitoring will be conducted at points immediately above and below the reclaimed sites.

B. UPDES Monitoring Locations – Deer Creek Mine (refer to HM-1A)

a. ***Deer Creek Mine***
UPDES UT0023604
001- Sediment Pond – Deer Creek Canyon
002- Mine Discharge – Deer Creek Canyon
003- Mine Discharge – Huntington Creek

C. Post Mine Closure Monitoring Locations – Deer Creek Mine

a. **Deer Creek Mine**
Rilda Canyon Pipeline – terminus of pipeline DCDRCP (refer to HM-1A)

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b. **Deer Creek Mine**
Rilda Canyon Pipeline – integrity evaluation meters (refer to Volume 11, R645-301-500 Engineering Section, Appendix I, Design Drawings Deer Creek Mine Water Relief Pipeline 2016 Rilda Canyon for location of upper and lower vaults – meter locations)
1. DCDRCP – Meter 1: located near the Rilda Canyon Portals
2. DCDRCP – Meter 2: located near the Huntington Power Plant Raw Water Pond

II. MONITORING SCHEDULE – DEER CREEK MINE
(See enclosed monitoring schedules for operational, baseline, and reclamation monitoring)

A. Field Measurements

Field Measurements collected during quality sampling: Listed below are the sites which will be monitored by PacifiCorp in accordance with the guidelines established by DOGM; i.e.

- Date and Time
- Flow
- pH
- Temperature
- Conductivity
- Dissolved oxygen (perennial streams only)

Surface Monitoring

Surface monitoring locations will be field monitored quarterly for all field parameters.

1. Huntington Canyon Drainage

a. Deer Creek

(1) DCR01
(2) DCR04
(3) DCR06

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b. Rilda Canyon

(1) RCF1
(2) RCLF 1
(3) RCLF 2
(4) RCF3
(5) RCW4

Groundwater Monitoring

1. Post Mine Closure – Deer Creek Mine Drainage
   a. Rilda Canyon Pipeline – terminus of pipeline DCDRCP
   b. Rilda Canyon Pipeline – integrity evaluation meters – flow only (refer to Volume 11, R645-301-500 Engineering Section, Appendix I, Design Drawings, Water Relief Pipeline 2016 Rilda Canyon for location of upper and lower vaults – meter locations)
      1. DCDRCP – Meter 1: located near the Rilda Canyon Portals
      2. DCDRCP – Meter 2: located near the Huntington Power Plant Raw Water Pond

UPDES Monitoring

1. Deer Creek

UPDES sites 001, 002 and 003 will be monitored as specified in the individual permits.

Reclamation Monitoring

Surface Water Resources: (see enclosed summary of operational, baseline, and reclamation monitoring schedules)
Surface monitoring locations will be field monitored monthly for flow and all field parameters quarterly until bond release.

Post Mine Closure:
Post Mine Closure monitoring locations will be field monitored monthly for flow including all field parameters until bond release.

UPDES: Sites will be monitored as specified in the individual permits.

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B. Quality Sampling (Laboratory Measurements)

1. Surface Water Hydrology: Water samples will be collected and analyzed quarterly (one sample at low flow and high flow) during the first or second week of the quarter. Parameters analyzed are those listed in the DOGM Guidelines for Surface Water Quality (see Table 1-Surface Water Quality Parameter List). Quarterly sampling was initiated during March 1988 and will continue throughout the year; i.e., June, September, and December. Baseline analysis was performed in 2016 and will be repeated every five years there-after.

a. Huntington Creek Drainage

(1) Deer Creek

(a) DCR01
(b) DCR04
(c) DCR06

(2) Rilda Canyon

(a) RCF1
(b) RCLF 1
(c) RCLF 2
(b) RCF3
(c) RCW4

Reclamation Monitoring - Surface Water Hydrology: Water samples will be collected and analyzed quarterly (one sample at low flow and high flow) during the first or second week of the quarter. Parameters analyzed are those listed in the DOGM Guidelines for Surface Water Quality (see Table 1-Surface Water Quality Parameter List). Sampling will be conducted on a quarterly basis until bond release. Baseline analysis will be performed on the 5th and 9th years following reclamation. In no case will baseline sampling time frame exceed 5 years converting from operational to reclamation monitoring.

a. Post Mine Closure Rilda Canyon Pipeline – terminus of pipeline DCDRCP: One water sample will be collected and analyzed per location monthly. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table 2-Ground Water Quality Parameter List).
Baseline analysis was performed in 2016 and will be repeated every five years thereafter.

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Reclamation Monitoring - Groundwater Hydrology:

a. Post Reclamation Monitoring: PacifiCorp commits to conduct annual surveys to identify new discharge locations within and below sealed portals. If discharge occurs, one water sample will be collected and analyzed per location quarterly. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table 2-Ground Water Quality Parameter List). Baseline analysis will be performed on the 5th and 9th year.

3. UPDES Monitoring Sites

a. Deer Creek Mine

UPDES sites will be monitored as specified in the individual permits.

III. ANNUAL REPORTS

All data collected regarding the hydrology of East Mountain will be summarized by the applicant in an annual Hydrologic Monitoring Report. Copies of the report will be submitted to the Utah State Division of Oil, Gas and Mining. In addition, any raw data collected will be submitted to the Utah State Division of Oil, Gas and Mining on a quarterly basis.

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HYDROLOGIC MONITORING SCHEDULE
DEER CREEK MINE

SURFACE HYDROLOGY - OPERATIONAL SAMPLING (Table 1)

Drainage System	Drainage	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Deer Creek	DCR01	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		DCR04	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		DCR06	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
Huntington Drainage System	*Rilda Canyon*	RCF1	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCLF1	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCLF2	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCF3	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCW4	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCW4	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational

UPDES SAMPLING - (Table 1)

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mine Water Discharge	*Deer Creek*	DCD	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
		2 Outfalls	002 and 003											
Sediment Pond Discharge	*Deer Creek*	1 Outfall	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational

POST MINE CLOSURE SAMPLING - (Table 2)

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mine Water Rilda Canyon Pipeline	*Deer Creek*	DCDRCP	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
	Deer Creek	Meters See Note	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow

Note:
DCDRCP - Meter 1: located near Rilda Canyon Portals
DCDRCP - Meter 2: located near Huntington Plant Raw Water Pond

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HYDROLOGIC MONITORING SCHEDULE
DEER CREEK MINE

SURFACE HYDROLOGY - BASELINE SAMPLING (Table 1) - **2021**

Drainage System	Drainage	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Deer Creek	DCR01	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline
		DCR04	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline
		DCR06	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline
	Rilda Canyon	RCF1	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline
		RCLF1	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline
Huntington Drainage System		RCLF2	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline
		RCF3	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline
		RCW4	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline	Flow	Flow	Baseline

UPDES SAMPLING - (Table 1)

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mine Water Discharge	*Deer Creek*	DCD	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
		2 Outfalls	002 and 003											
Sediment Pond Discharge	*Deer Creek*	1 Outfall	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational

POST MINE CLOSURE SAMPLING - (Table 2)

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mine Water Rilda Canyon Pipeline	*Deer Creek*	DCDRCP	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline	Baseline
	Deer Creek	Meters See Note	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow

Note:
DCDRCP - Meter 1: located near Rilda Canyon Portals
DCDRCP - Meter 2: located near Huntington Plant Raw Water Pond

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HYDROLOGIC MONITORING SCHEDULE
DEER CREEK MINE

SURFACE HYDROLOGY - RECLAMATION SAMPLING (Table 1)

Drainage System	Drainage	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	Deer Creek	DCR01	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		DCR04	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		DCR06	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
	Rilda Canyon	RCF1	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCLF1	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCLF2	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCF3	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational
		RCW4	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational	Flow	Flow	Operational

** Analyzed for Baseline Parameters During the Fifth (5) and Ninth (9) Year After Final Reclamation*
In no case will baseline sampling time frame exceed 5 years converting from operational to reclamation monitoring.

UPDES SAMPLING - (Table 1)

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
*Mine Water Discharge***	*Deer Creek*	DCD	As Needed Basis According to UPDES Permit Stipulations											
		2 Outfalls	002 and 003											
Sediment Pond Discharge	*Deer Creek*	1 Outfall	As Needed Basis According to UPDES Permit Stipulations											

***** After Portal Sealing (Deer Creek Canyon and Rilda Canyon), PacifiCorp Will Monitor Down Dip For Development Of Groundwater Seeps/Springs Until Bond Release***

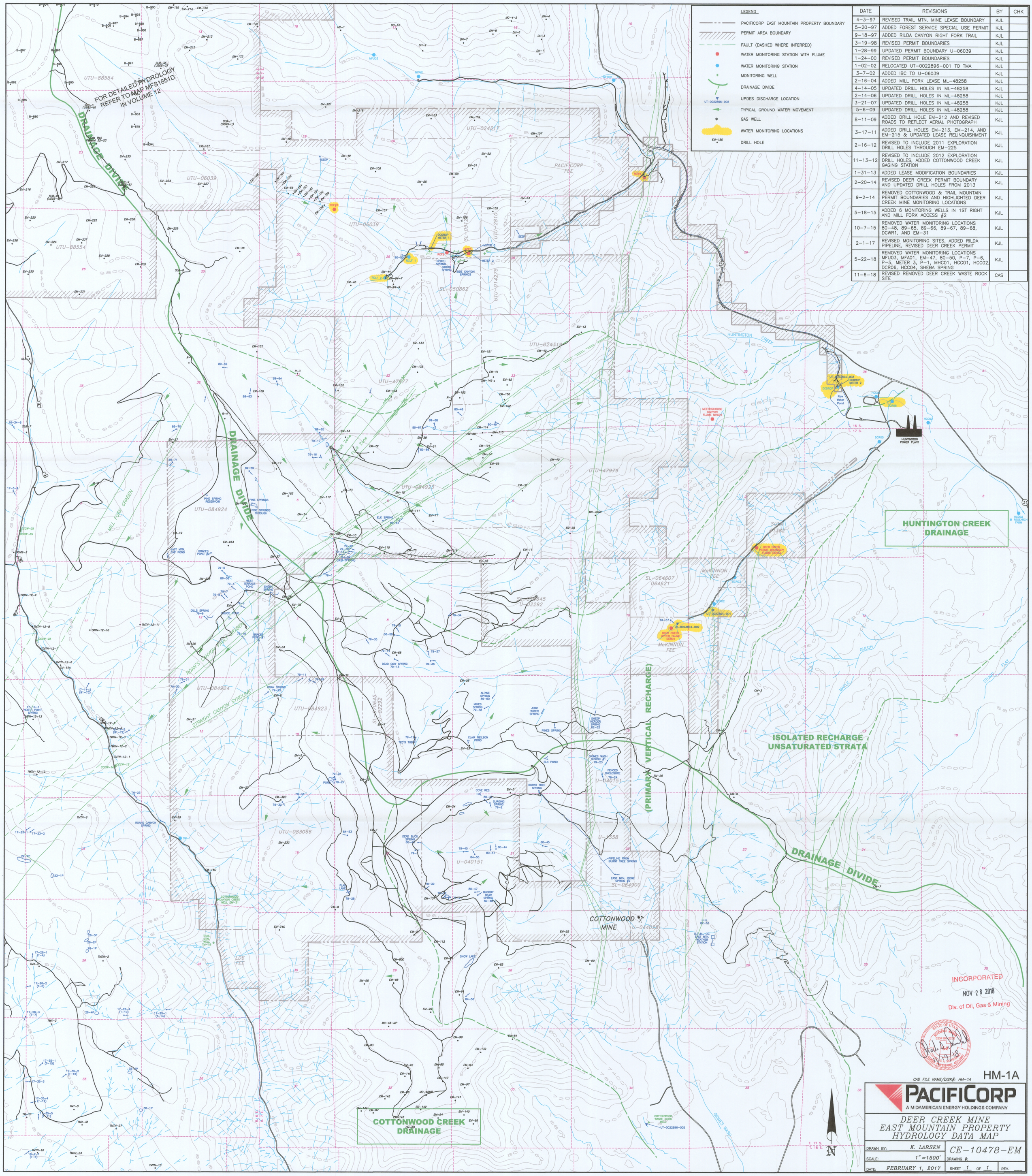
POST MINE CLOSURE SAMPLING - (Table 2)

			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mine Water	*Deer Creek*	DCDRCP	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational	Operational
Rilda Canyon Pipeline	*Deer Creek*	Meters See Note	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow	Flow

Note:
DCDRCP - Meter 1: located near Rilda Canyon Portals
DCDRCP - Meter 2: located near Huntington Plant Raw Water Pond

Rilda Canyon Pipeline and Meter (s) monitoring will be conducted until permit area reduction approval or unless otherwise approved by the Division.

INCORPORATED
NOV 28 2018
Div. of Oil, Gas & Mining



LEGEND

- PACIFICORP EAST MOUNTAIN PROPERTY BOUNDARY
- PERMIT AREA BOUNDARY
- FAULT (DASHED WHERE INFERRED)
- WATER MONITORING STATION WITH FLUME
- WATER MONITORING STATION
- MONITORING WELL
- DRAINAGE DIVIDE
- UPDES DISCHARGE LOCATION (UT-0022896-002)
- TYPICAL GROUND WATER MOVEMENT
- GAS WELL
- WATER MONITORING LOCATIONS
- DRILL HOLE (EM-150)

DATE	REVISIONS	BY	CHK
4-3-97	REVISED TRAIL MTN. MINE LEASE BOUNDARY	KJL	
5-20-97	ADDED FOREST SERVICE SPECIAL USE PERMIT	KJL	
9-18-97	ADDED RILDA CANYON RIGHT FORK TRAIL	KJL	
3-19-98	REVISED PERMIT BOUNDARIES	KJL	
1-28-99	UPDATED PERMIT BOUNDARY U-06039	KJL	
1-24-00	REVISED PERMIT BOUNDARIES	KJL	
1-02-02	RELOCATED UT-0022896-001 TO TMA	KJL	
3-7-02	ADDED IBC TO U-06039	KJL	
2-16-04	ADDED MILL FORK LEASE ML-48258	KJL	
4-14-05	UPDATED DRILL HOLES IN ML-48258	KJL	
2-14-06	UPDATED DRILL HOLES IN ML-48258	KJL	
3-21-07	UPDATED DRILL HOLES IN ML-48258	KJL	
5-6-09	UPDATED DRILL HOLES IN ML-48258	KJL	
8-11-09	ADDED DRILL HOLE EM-212 AND REVISED ROADS TO REFLECT AERIAL PHOTOGRAPH	KJL	
3-17-11	ADDED DRILL HOLES EM-213, EM-214, AND EM-215 & UPDATED LEASE RELINQUISHMENT	KJL	
2-16-12	REVISED TO INCLUDE 2011 EXPLORATION DRILL HOLES THROUGH EM-225	KJL	
11-13-12	REVISED TO INCLUDE 2012 EXPLORATION DRILL HOLES, ADDED COTTONWOOD CREEK GAGING STATION	KJL	
1-31-13	ADDED LEASE MODIFICATION BOUNDARIES	KJL	
2-20-14	REVISED DEER CREEK PERMIT BOUNDARY AND UPDATED DRILL HOLES FROM 2013	KJL	
9-2-14	REMOVED COTTONWOOD & TRAIL MOUNTAIN PERMIT BOUNDARIES AND HIGHLIGHTED DEER CREEK MINE MONITORING LOCATIONS	KJL	
5-18-15	ADDED 6 MONITORING WELLS IN 1ST RIGHT AND MILL FORK ACCESS #2	KJL	
10-7-15	REMOVED WATER MONITORING LOCATIONS 80-48, 89-65, 89-66, 89-67, 89-68, DCWR1, AND EM-31	KJL	
2-1-17	REVISED MONITORING SITES, ADDED RILDA PIPELINE, REVISED DEER CREEK PERMIT	KJL	
5-22-18	REMOVED WATER MONITORING LOCATIONS MFU03, MFA01, EM-47, 80-50, P-7, P-6, P-5, METER 3, P-1, MHC01, HCC01, HCC02, DCR06, HCC04, SHEBA SPRING	KJL	
11-6-18	REVISED REMOVED DEER CREEK WASTE ROCK SITE	CAS	