



PO Box 310  
Huntington, Utah 84528

September 27, 2006

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

*Handwritten:*  
J. Smith  
C/015/0017  
C/015/0018  
C/015/0019  
#2661

Re: Revised Volume 9 Hydrologic Section, Appendix A, PacifiCorp, Cottonwood Mine C/015/019, Deer Creek Mine, C/015/018, Des-Bee-Dove Mines, C/015/017, PacifiCorp, Deer Creek Mine, C/015/018, Emery County, Utah.

PacifiCorp, by and through its wholly-owned subsidiary, Energy West Mining Company ("Energy West") as mine operator, hereby submits five redline copies along with seven (7) clean copies of the Volume 9 page 7 and Appendix A. During review of the Mill Fork West Extension Tract permit process, Hydrologist Jim Smith requested that Volume 9 Appendix A be revised to include: Mill Fork Spring Monitoring - UJV-213. This amendment fulfills this request. Monitoring of spring UJV-213 will initiated in October 2006.

*The following lists the revisions to Volume 9 - Hydrologic Section:*

*Cottonwood Mine C/015/0019, Deer Creek Mine, C/015/0018, Des-Bee-Dove Mines, C/015/0017 Volume 9 HYDROLOGY*

- ☞ *Replace Appendix A page 7. Five redline copies are enclosed.*
- ☞ *Replace entire Appendix A. Seven clean copies are enclosed.*

Attached are five redline copies along with seven clean copies of the amendment with the required C1/C2 forms.

If you have any questions or concerns regarding this submittal, please feel free to contact myself at 687-4720 or Dennis Oakley at 687-4825.

Sincerely,

Charles A. Semborski  
Geology/Permitting Manager

CAS/cas

cc: File

J:\Environmental\PERMITS\Volume 9 Amendments\VOLUME 9 September 27 2006 Clean Copy.wpd

Huntington Office:  
(435) 687-9821  
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DIV. OF OIL, GAS & MINING  
Deer Creek Mine:  
(435) 687-2317  
Fax (435) 687-2285

# APPLICATION FOR COAL PERMIT PROCESSING

Permit Change  New Permit  Renewal  Exploration  Bond Release  Transfer

Permittee: PacifiCorp

Mine: Cottonwood Mine, Des-Bee-Dove Mines, Deer Creek Mine

Permit Number: C/015/0017,  
C/015/0018,  
C/015/0019

Title: Amendment to Update Volume 9, Cottonwood Mine, Deer Creek, Des-Bee-Dove Mines MRP, PacifiCorp, Cottonwood Mine, Deer Creek Mine, Des-Bee-Dove Mines, C/015/0017, C/015/0018, C/015/0019, Emery County, Utah.

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

Replace Appendix A

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: \_\_\_\_\_ Disturbed Area: \_\_\_\_\_  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.

Charles A. Semborski  
Print Name

Charles A. Semborski Geology/Permitting Manager 9-28-06  
Sign Name, Position, Date

Subscribed and sworn to before me this 28 day of September, 2006

Lori Oliver  
Notary Public

My commission Expires: August 8, 2010  
Attest: State of Utah ) ss:  
County of Emery

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DIV. OF OIL, GAS & MINING

<b>For Office Use Only:</b>	<b>Assigned Tracking Number:</b>	<b>Received by Oil, Gas &amp; Mining</b>
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Form DOGM- C1 (Revised March 12, 2002)



**PACIFICORP**  
**ENERGY WEST**  
HYDROLOGIC MONITORING PROGRAM  
DEER CREEK, WILBERG/COTTONWOOD, DES-BEE-DOVE  
and TRAIL MOUNTAIN MINES

**I. MONITORING LOCATIONS**

**A. Surface Water Hydrology** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1, Deer Creek Volume 12 R645-301-700: Hydrologic Monitoring Map MFS1851D Mill Fork Lease for East Mountain locations listed below / Trail Mountain Mine: Volume 3 Plate 7-1 and Plate 7-2 for Trail Mountain locations listed below)

**1. Cottonwood Creek Drainage System**

a. **Cottonwood Canyon Creek** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1 or Trail Mountain Mine Permit Volume 3 Plate 7-1)

- (1) SW-1 - Above Trail Mtn. Mine  
(Approximately 5000 feet upstream from the inlet culvert for the disturbed area.) 2150 feet South, 2000 feet East of the Northwest corner of Section 24, Township 17 South, Range 6 East.
- (2) SW-2 - Below Trail Mtn. Mine  
(Approximately 200 feet downstream from the outlet culvert for the disturbed area.) 1300 feet South, 1750 feet West of the Northeast corner of Section 25, Township 17 South, Range 6 East.
- (3) CCC01 - USGS Flume:  
(Approximately 7800 feet downstream from the outlet culvert for the disturbed area.) 1500 feet North, 200 feet East of the Southwest corner of Section 31, Township 17 South, Range 7 East.
- (4) SW-3 - Below Trail Mtn. Mine  
(Approximately 3800 feet above confluence with Straight Canyon) 2400 feet South, 2400 feet East of the Northeast corner of Section 6, Township 18 South, Range 6 East.

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- b. ***Unnamed Drainage off Straight Canyon*** (refer to Trail Mountain Mine Permit Volume 3 Plate 7-1)
  - (1) T-19  
(Approximately 200 feet upstream from the from confluence with Straight Canyon) 2500 feet South, 1100 feet East of the Northeast corner of Section 3, Township 18 South, Range 6 East.
- c. ***Grimes Wash*** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)
  - (1) GWR01 - Right Fork:  
(Approximately 1500 feet upstream from the inlet culvert for the disturbed area.) 550 feet North, 1500 feet West of the Southwest corner of Section 22, Township 17 South, Range 7 East.
  - (2) GWR02 - Left Fork:  
(Approximately 50 feet upstream from the inlet culvert for the disturbed area.) 200 feet South, 2350 feet East of the Northwest corner of Section 27, Township 17 South, Range 7 East.
  - (3) GWR03 - Below the mine:  
(Approximately 500 feet downstream from the outlet culvert below the disturbed area.) 1770 feet South, 1820 feet West of the Northeast corner of Section 27, Township 17 South, Range 7 East.
- d. ***Indian Creek*** (refer to Deer Creek Volume 12 R645-301-700: Hydrologic Monitoring Map MFS1851D)
  - (1) ICA - Indian Creek Above  
(Approximately 2500 feet northwest of the Mill Fork permit boundary) 400 feet North, 2350 feet West of the Southwest corner of Section 3, Township 16 South, Range 6 East.
  - (2) ICF - Indian Creek Flume  
(Approximately 2100 feet west of the Mill Fork permit boundary) 300 feet North, 3400 feet West of the Southwest corner of Section 10, Township 16 South, Range 6 East.

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- (3) ICD - Indian Creek Ditch  
(Approximately 1600 feet west of the Mill Fork permit boundary, irrigation ditch for Upper Joes Valley) 240 feet North, 2850 feet West of the Southwest corner of Section 15, Township 16 South, Range 6 East.
- (4) ICB - Indian Creek Below  
(Approximately 3700 feet west of the Mill Fork permit boundary, junction of Indian Creek and FDR040) 70 feet North, 120 feet West of the Southwest corner of Section 16, Township 16 South, Range 6 East.

**2. Huntington Creek Drainage System**

- a. **Huntington Creek** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)
  - (1) HCC01 - Above Deer Creek Confluence:  
1400 feet north, 2200 feet west of the southeast corner of Section 36, Township 16 South, Range 7 East.
  - (2) HCC02 - Below Deer Creek Confluence:  
300 feet north, 300 feet west of the southwest corner of Section 31, Township 16 South, Range 8 East.
  - (3) HCC03 - Below Huntington Power Plant:  
2500 feet north, 1500 feet east of the southeast corner of Section 6, Township 17 South, Range 8 East.
  - (4) HCC04 - @ Research Farm\*  
800 feet north, 200 feet east of the southwest corner of Section 5, Township 17 South, Range 8 East.  
\*Not listed on map due to scale.
- b. **Deer Creek** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)
  - (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.

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- (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 36, Township 16 South, Range 7 East.
- c. **Meetinghouse Canyon - South Fork** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)  
(Approximately 200 feet upstream from the north and south convergence.) 800 feet North, 1500 feet East of the Southwest corner of Section 35, Township 16 South, Range 7 East.
- d. **Rilda Canyon** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)
  - (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 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) RCF2 - Rilda Canyon - Above NEWUA springs: 2500 feet South, 400 feet West of the Northeast corner of Section 29, Township 16 South, Range 7 East.

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- (5) RCF3 - Rilda Canyon - Below NEWUA springs: 2550 feet South, 1000 feet East of the Northeast corner of Section 28, Township 16 South, Range 7 East.
- (6) 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.
- e. **Mill Fork Canyon** (refer to Deer Creek Volume 12 R645-301-700: Hydrologic Monitoring Map MFS1851D)
  - (1) MFA01 - Mill Fork Canyon - Above Old Mine: (Approximately 2000 feet above old mine portals @ end of USFS development road.) 100 feet North, 1500 feet West of the Southeast corner of Section 17, Township 16 South, Range 7 East.
  - (2) MFB02 - Mill Fork Canyon - Above Huntington Creek Confluence: (Approximately 200 feet above confluence with Huntington Creek @ culvert outfall.) 100 feet South, 1900 feet East of the Northwest corner of Section 22, Township 16 South, Range 7 East.
  - (3) MFU03 - Mill Fork Canyon - Above Mill Fork Fault Crossing: (Approximately 700 feet upstream of projected Mill Fork Fault crossing) 1150 feet North, 1700 feet East of the Southwest corner of Section 17, Township 16 South, Range 7 East.
- 3. **Reclamation Monitoring:**  
Following stage 1 final reclamation backfilling and grading monitoring will be conducted at points immediately above and below the last sediment pond(s).

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**B. Groundwater Hydrology**

**1. East Mountain Springs** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine Permit : Volume 9 maps HM-4 and HM-5)

Burnt Tree *	80-41
Elk Spring *	80-43
Sheba Springs *	80-44*
Ted's Tub	80-46*
79-2	80-47
79-10 *	80-48
79-15	80-50
79-23 *	82-51
79-24	82-52*
79-26 *	84-56*
79-28 (Flag Lake)	89-60(Alpine Spring)
79-29 *	89-61
79-32	89-65
79-34	89-66
79-35 *	89-67
79-38	89-68
79-40	Rilda Canyon-(Meters 2&3)

\* Recession Study Springs (Flow August & September)

**2. Trail Mountain Springs** (refer to Trail Mountain Mine Permit Volume 3 Plate 7-1)

T-6	T-14
T-8	T-15
T-9	T-16
T-10	T-18 (Oliphant Mine Discharge)

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3. **East Mountain Springs - Mill Fork Area** (refer to Deer Creek Permit Volume 12 R645-301-700: Hydrologic Monitoring Map MFS1851D)
- |                    |               |
|--------------------|---------------|
| EM-216             | MFR-30        |
| JV-9               | RR-5          |
| JV-34              | RR-15         |
| MF-7               | RR-23A        |
| MF-10              | SP1-26        |
| MF-19B             | SP1-29        |
| MF-213             | UJV-101       |
| MF-219             | UJV-206       |
| MFR-10             | UJV-213       |
| EMPOND             | Grants Spring |
| Little Bear Spring |               |

3. **Piezometric Data**

a. **Surface**

- (1) Rilda Canyon (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)
- P1
  - P5
  - P6
  - P7
  - EM-47
- (2) Cottonwood Canyon Creek  
*East Mountain (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)*
- EM-31
  - CCCW-1A
  - CCCW-1S
  - CCCW-2A
  - CCCW-3A
  - CCCW-3S U
  - CCCW-3S L

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**3. East Mountain Springs - Mill Fork Area** (refer to Deer Creek Permit Volume 12 R645-301-700: Hydrologic Monitoring Map MFS1851D)

EM-216	MFR-30
JV-9	RR-5
JV-34	RR-15
MF-7	RR-23A
MF-10	SP1-26
MF-19B	SP1-29
MF-213	UJV-101
MF-219	UJV-206
MFR-10	UJV-213
EMPOND	Grants Spring
Little Bear Spring	

**3. Piezometric Data**

a. Surface

- (1) Rilda Canyon (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)

P1

P5

P6

P7

EM-47

- (2) Cottonwood Canyon Creek

*East Mountain (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)*

EM-31

CCCW-1A

CCCW-1S

CCCW-2A

CCCW-3A

CCCW-3S U

CCCW-3S L

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*Trail Mountain (refer to Trail Mountain Mine Permit  
Volume 3 Plate 7-1)*

TM-1B

TM-3

- b. Underground: In-Mine
  - (1) Deer Creek Mine (Refer to Annual Hydrologic Reports for Locations : Map HM-2)

**4. In-Mine Water Locations**

- a. Deer Creek Mine (Refer to Annual Hydrologic Reports for Locations : Map HM-2)
- b. Wilberg/Cottonwood Mines (Refer to Annual Hydrologic Reports for Locations : Map HM-3)
- c. Trail Mountain Mine (Refer to Annual Hydrologic Reports for Locations : PLATE 7-3)

**5. Waste Rock Wells** (refer to Deer Creek, Wilberg/Cottonwood, Des-Bee-Dove Mine: Volume 9 Map HM-1)

- a. Deer Creek
- b. Cottonwood

**C. UPDES Monitoring Locations**

- a. ***Deer Creek Mine***  
UPDES UT0023604
  - 001- Sediment Pond
  - 002- Mine Discharge
- b. ***Des-Bee-Dove Mines***  
UPDES UTG040022
  - 001- Sediment Pond

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- c. ***Wilberg/Cottonwood Mines***  
UPDES UT0022896  
001- Mine Discharge @ Cottonwood Canyon (TMA)  
002- Sediment Pond Discharge @ Cottonwood Canyon  
003- Sediment Pond @ Mine Facilities  
004- Mine Discharge @ Miller Canyon  
005- Sediiment Pond Discharge @ Waste Rock Site
- d. ***Trail Mountain Mine***  
UPDES UT0023728  
001- Sediment Pond  
002- Mine Discharge

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**II. MONITORING SCHEDULE** *(see enclosed monitoring table)*

**A. Field Measurements**

Field Measurements collected during quality sampling: Listed below are the sites which will be monitored by PacifiCorp - Energy West 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, except Indian Creek - monitoring to be conducted during baseflow only.

**1. Cottonwood Canyon Creek**

- a. Cottonwood Canyon Creek
  - (1) SW-1
  - (2) SW-2
  - (3) Cottonwood Canyon Creek - USGS Flume
  - (4) SW-3
- b. Grimes Wash
  - (1) GWR01
  - (2) GWR02
  - (3) GWR03
- c. Indian Creek
  - (1) ICA
  - (2) ICF
  - (3) ICD
  - (4) ICB
- d. Straight Canyon
  - (1) T-19 ( Unnamed Side Drainage)

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**2. Huntington Canyon Drainage**

a. Deer Creek

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

b. Huntington Creek

- (1) HCC01
- (2) HCC02
- (3) HCC04

Flow in Huntington Creek is measured only at HCC01 by Utah Power, and will be reported in the Annual Hydrologic Report.

c. Meetinghouse Canyon - South Fork: MCH01

d. Rilda Canyon

- (1) RCF1\*
- (2) RCLF 1
- (3) RCLF 2
- (4) RCF2
- (5) RCF3
- (6) RCW4

\* Baseline flow will be measured adjacent to EM-163

e. Mill Fork Canyon

- (1) MFA01
- (2) MFB02
- (3) MFU03

**Groundwater Monitoring**

- 1. East Mountain Springs (see monitoring location list)
- 2. Trail Mountain Springs (see monitoring location list)
- 3. East Mountain Springs - Mill Fork Area (see monitoring location list)  
East/Trail Mountain Springs will be field monitored during the months of July and October. In addition, the East Mountain Recession Study Springs (denoted by asterisks in the Monitoring Location section) and Trail Mountain Springs will be field monitored for flow only from July through October. T-18: Oliphant Mine Discharge, will be collected and analyzed

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quarterly. Rilda Canyon Springs - NEWUA (meters 2 & 3) will be field monitored monthly depending upon access.

3. In-Mine

- a. Deer Creek
- b. Wilberg/Cottonwood
- c. Trail Mountain

In-mine locations will be field monitored quarterly for all field parameters except pH, conductivity, and dissolved oxygen.

4. Piezometric Wells

- a. Surface

Piezometric surface wells will be field monitored for level only on a monthly basis depending upon access.

- (1) Rilda Canyon (see Map HM-1 for locations)

P1

P5

P6

P7

EM-47

- (2) Cottonwood Canyon Creek (see Map HM-1 for locations)

EM-31

CCCW-1A

CCCW-1S

CCCW-2A

CCCW-3A

CCCW-3S U

CCCW-3S L

TM-1B

TM-3

5. Waste Rock Wells

- a. Deer Creek
- b. Cottonwood

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**UPDES Monitoring**

1. Deer Creek
2. Des-Bee-Dove
3. Wilberg/Cottonwood
4. Trail Mountain

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

**Reclamation Monitoring**

Surface Water Resources: (see enclosed monitoring table)

Surface monitoring locations will be field monitored monthly for flow and all field parameters quarterly until bond release.

Ground Water Resources: (see enclosed monitoring table)

**Springs** East/Trail Mountain Springs will be field monitored during the months of July and October.

Rilda Canyon Springs NEWUA (meters 2 & 3) will be field monitored monthly for flow depending upon access. East/Trail Mountain Springs (including Rilda Springs and T-18 [Oliphant Mine]) monitoring will be conducted until permit area reduction approval or unless otherwise approved by the Division.

**Wells:** Piezometric surface wells (Rilda Canyon and Cottonwood Canyon including TM-3 in Straight Canyon): will be field monitored for level only on a monthly basis depending upon access. Piezometric surface well monitoring will be conducted until permit area reduction approval or unless otherwise approved by the Division.

Waste Rock Wells and TM-1B: will be field monitored for level only on a quarterly basis. Monitoring will be conducted until sealing during Phase I reclamation.

**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, except for Indian Creek - quality samples will be collected during baseflow only. Parameters analyzed are those listed in the DOGM Guidelines for Surface Water Quality (see Table #1). Quarterly sampling was initiated during March 1988 and will continue throughout the year; i.e., June, September, and December. Baseline analysis was performed in 2001 and will be repeated every five years thereafter.

**a. Cottonwood Creek Drainage**

(1) Cottonwood Canyon Creek

(a) SW-1

(b) SW-2

(c) SW-3

(2) Grimes Wash

(a) GWR01

(b) GWR02

(c) GWR03

(3) Indian Creek

(a) ICA

(b) ICD

(c) ICB

(4) Straight Canyon

(a) T-19

**b. Huntington Creek Drainage**

(1) Deer Creek

(a) DCR01

(b) DCR04

(c) DCR06

(2) Huntington Creek

(a) HCC01

(b) HCC02

(c) HCC04

(3) Meetinghouse Canyon - South Fork: MCH01

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- (4) Rilda Canyon
  - (a) RCF1
  - (b) RCF3
  - (c) RCW4
- (5) Mill Fork Canyon
  - (a) MFA01
  - (b) MFB02
  - (c) MFU03

**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). Sampling will be conducted on a quarterly basis until bond release. Baseline analysis will be performed on the 5<sup>th</sup> and 9<sup>th</sup> years following reclamation. In no case will baseline sampling time frame exceed 5 years converting from operational to reclamation monitoring.

**2. Groundwater Hydrology**

- a. East/Trail Mountain Springs: Water samples will be collected and analyzed during the months of July and October. Rilda Canyon Springs (NEWUA: Meters 2 & 3) and T-18 (Oliphant Mine Discharge) will be monitored for quarterly for quality. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
- b. In-Mine: Two water samples will be collected and analyzed per mine quarterly. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
- c. Wells: TM-1B will be sampled quarterly. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
- d. Waste Rock Wells: 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).

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Baseline analysis was performed in 2001 and will be repeated every five years thereafter.

**Reclamation Monitoring - Groundwater Hydrology:**

- a. East/Trail Mountain Springs: Water samples will be collected and analyzed during the months of July and October. Rilda Canyon Springs (NEWUA: Meters 2 & 3) will be monitored quarterly for quality. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2). East/Trail Mountain Springs (including Rilda Springs and T-18 [Oliphant Mine Discharge]) monitoring will be conducted until permit area reduction approval or unless otherwise approved by the Division.
- b. In-Mine: Two water samples will be collected and analyzed per mine quarterly until the mine is sealed or the sites become inaccessible. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
- c. Wells: Well TM-1B will be sealed during Phase I reclamation. Quarterly sampling will continue until sealing. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
- d. Waste Rock Wells: Waste rock wells will be sealed during Phase I reclamation. One water sample will be collected and analyzed per location quarterly until well sealing. Parameters analyzed are those listed in the DOGM Guidelines for Groundwater Water Quality (see Table #2).
- e. 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). Baseline analysis will be performed on the 5<sup>th</sup> and 9<sup>th</sup> year.

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**3. UPDES Monitoring Sites**

- a. Deer Creek Mine
- b. Des-Bee-Dove Mines
- c. Wilberg/Cottonwood Mines
- d. Trail Mountain Mine

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

***III. ANNUAL REPORTS***

All data collected regarding the hydrology of East/Trail Mountain will be summarized by the applicant in an annual Hydrologic Monitoring Report. Copies of the report will be submitted to the; U.S. Forest Service; and 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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