



Interwest Mining Company  
Huntington Office  
P. O. Box 310  
15 North Main Street  
Huntington, UT 84528

September 26, 2019

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

Electronically Submitted

**Subj:** Amendment to the Cottonwood Mine Reclamation Plan to Allow Emery County Road Department to Install a Truck Turn Around within the Disturbed Area of the TMA Area, Cottonwood/Wilberg Mine, C/015/0019, Emery County, Utah

PacifiCorp, by and through its wholly-owned subsidiary, Interwest Mining Company, as mine manager, hereby submits an amendment to the Cottonwood/Wilberg Mine to allow the Emery County Road Department to construct a snow plow truck turnaround within the area of the Trail Mountain Access disturbed area. The turnaround is located on the southern extent of the disturbed area and will impact 0.08 acres. On May 7, 2019, the Division approved a Phase I Bond Release application for this site. Final reclamation of the 1.86 acres site was completed in the fall of 2014.

The plan for this activity will be located in Volume 2, Part 4, and Volume 2, Part 4, Appendix I of the Cottonwood/Wilberg Mining and Reclamation Plan. Included with this plan is a narrative describing the construction activity of the turnaround, plan view map of the site, hydrology calculations, Johansen and Tuttle Engineering (Emery County Engineer) site drawing and easement description, and the signed Public Road Easement document.

As soon as the Division can approve this amendment to the Cottonwood MRP, the Emery County Road Department will commence their construction activities. It is our hopes that we can have a quick approval process as the snow season is quickly approaching. If there are any questions or concerns regarding the information contained in this amendment, please contact Dennis Oakley at 435-687-4825.

Sincerely,

Kenneth S. Fleck  
Manager of Geology and Environmental Affairs.

Enclosures

# APPLICATION FOR COAL PERMIT PROCESSING

Permit Change  New Permit  Renewal  Exploration  Bond Release  Transfer

Permittee: PacifiCorp

Mine: Cottonwood/Wilberg Mine

Permit Number: C/015/0019

Title: Amendment to the Cottonwood Mine Reclamation Plan to Allow Emery County Road Department to Install a Truck Turn Around within the Disturbed Area of the TMA Area, Cottonwood/Wilberg Mine, C/015/0019, Emery County, Utah

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

**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:  $\pm$   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  
Print Name

Kenneth S Fleck  
Sign Name, Position, Date

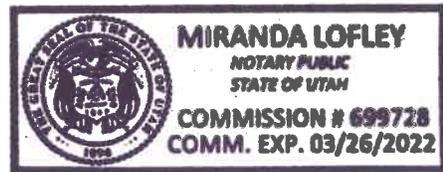
Manager of Environmental Affairs SEPTEMBER 26, 2019

Subscribed and sworn to before me this 26<sup>th</sup> day of September, 2019

Miranda Lofley  
Notary Public

My commission Expires: 03-26, 2022

Attest: State of Utah } ss:  
County of Emery





<b>Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.</b>	<b>Received by Oil, Gas &amp; Mining</b>
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Form DOGM - C2 (Revised March 12, 2002)

**PacifiCorp**

**Cottonwood/Wilberg Mine**

**C/015/0019**

**Volume 2, Part 4, pages 26 thru 29**

**Replace these pages**

Due to the natural dip of the strata, the Trail Mountain Access (TMA) portal in Cottonwood Canyon (final reclamation in November 2014) is the lowest within the existing Cottonwood/Wilberg mine permit area. Groundwater intercepted during the development of the TMA development entries flows to the TMA portal. To prepare for the permanent discharge, PacifiCorp installed a series of three sediment traps located 100 feet apart within the mine to settle out particles prior to discharge. Refer to the as-built drawing of the system in Appendix I. A solid block seal (built to MSHA requirements) was constructed 25 feet in by the portal entrance. A French drain system was installed with 6" perforated PVC pipe behind the seal. A secondary decant pipe was installed at the bottom of the seal along with a backup decant line installed 2 feet from the roof. Each line was fitted with a shut-off valve. Durable drain rock of 2-4 inch sizing was placed over the perforated drain line. Pea sized gravel was placed over the drain rock as a filtering system. The thickness of the filtering system is approximately 4 feet thick.

Mine water is discharged through the seal into a 6 inch buried PVC that parallels the Emery County Road 506 for approximately 200 feet below the portal. The pipe drops into a 36 inch bypass culvert which discharges into the Cottonwood Canyon Creek. Since 2001 the discharge of mine water has averaged approximately 21 gpm. This discharge is considered permanent for post-mining land use. PacifiCorp currently possesses a UPDES permit (#UT0022896-001) for this site and monitors the quality and quantity on a monthly basis at the inlet of the 36" bypass culvert. At reclamation, Emery County Road Department requested that the 6 inch buried PVC line be left in place to keep ice from potentially building up in a road ditch in the winter and pushing ice onto the road. In a letter dated February 2015, Emery County Road Department committed to maintaining the line within their right of way. See Appendix I to review the letter from Emery County and the updated design drawing from 2001.

In 2019, Emery County requested that an area in the TMA disturbed area be used as a snow plow turn-around. As the County is responsible for plowing the Cottonwood Canyon road, there is no safe place for their plows to turn around. PacifiCorp has given the County an easement to utilize this area. The approved easement is found in Appendix I of Part 4. Also included in Appendix I is the plan for this area. The area will be graveled and include a culvert as a permanent reclamation feature.

Disposal Areas

Old Waste Rock Site: Located 1.5 miles south of the Cottonwood/Wilberg Mine, this 48.62 acre site was originally designed as an open storage and truck loadout for the Cottonwood/Wilberg Mine. The Right-of-Way grant (UTU-37642) was issued by the Bureau of Land Management in 1977 but subsequent developments, specifically construction of a concrete storage silo for coal storage at the mine, changed the function of this site. A modification was submitted to use this site for storage of waste rock produced by underground development mining in the Cottonwood/Wilberg Mine.

The Right-of-Way UTU-37642 has also been modified to accommodate coal bed methane degasification activities conducted by Texaco Inc. Listed below is a list the acreage descriptions of the Right-of-Way including original grant, modifications and disturbance associated with the facility:

**BLM Right-of-Way UTU-37642**

Original Grant (1997)	48.62 acres
1997 Relinquishment (Texaco Well 35-14)	1.08 acres
<u>1999 Relinquishment (Texaco Well 34-80)</u>	<u>12.98 acres</u>
TOTAL RIGHT-OF-WAY UTU-37642	34.56 acres
Reclaimed Area (Phase III Released July 2009)	13.81 acres
2015 Relinquishment	32.7 acres
<b>ROW and Disturbed Area Remaining</b>	<b>1.86 acres</b>

Approximately 13.81 acres of the old waste rock site has been reclaimed. Material to cover the waste rock was taken from the perimeter berms. Phase 1 bond release was approved on July 22, 1999. Phase III bond release was approved July 22, 2009. In October 2015, the BLM approved relinquishment of 32.7 acres bringing the total right of way held by PacifiCorp to 1.86 acres.

The remaining 1.86 acres has been retained as a soil and rock storage area. This soil, which is native topsoil and subsoil from the Cottonwood Fan Portal area, will be used for topsoil for the Cottonwood/Wilberg mine site (refer to R645-301-200: Soils). Boulders will be used for riprap

construction of the reconstructed channel, if needed. The soil quantity is approximately 120 cubic yards.

Once this material is removed from the site, the area will be roughened and reseeded as outlined in R645-301-300: Biology.

**Note: Reclamation of the rock and soil storage area was completed in March 2018.**

**542.730: Disposal of Coal Mine Waste**

Coal mine wastes that are uncovered during earthmoving activities shall be segregated and buried in fill areas and covered to ensure that the fill area is suitable for reclamation and revegetation compatible with the natural surroundings and the approved post-mining land use. All coal mine wastes will be covered with at least four feet of suitable fill.

**542.740: Noncoal Mine Wastes**

During the demolition of the mine site, all recoverable noncoal waste materials were collected and disposed of. Any noncoal waste recovered during earthwork activities will be collected and disposed off-site in an approved landfill.

**Note: All non-coal mine wastes were hauled to the Emery County Landfill and disposed.**

**550: Reclamation Design Criteria**

Reclamation design criteria have been discussed in the previous section of 542. Any additional criteria will be discussed in the following sections.

**552: Permanent Features**

Small depressions, in the form of pocks (refer to R645-301-700: Hydrology for a complete discussion for sediment control measures) shall be constructed on all areas of the Cottonwood/Wilberg mine site reclaimed area. These pocks will retain moisture, minimize erosion, create and enhance wildlife habitat, and assist revegetation. The area for which these pocks will be developed is shown on the RUSLE map (Plate 4E) in the Maps Section.

Other features such as boulders and clusters of boulders will be randomly placed throughout the reclaimed surfaces to create habitat for small mammals, birds, and raptors. Boulders will be gathered on-site for this purpose during backfilling and grading activities.

**553.100: Approximate Original Contour**

The strategy of the reclamation plan is to design the final reclamation contours to achieve approximate original contour (AOC) criteria. Rock outcrops will be exposed to blend in with the natural topography of the area.

Fill slopes will be constructed to no greater than a 2 horizontal to 1 vertical gradient. Cut slopes will be created with that same criteria.

**553.120: Highwall Elimination**

Final reclamation of highwalls at the Cottonwood/Wilberg mines is accomplished in three phases; demolition, earthwork, and revegetation. These phases follow strict requirements set forth by the Utah Coal Rules R645-301-100 through 800. Highwalls at the Cottonwood/Wilberg mines were inventoried by Office of Surface Mining and the Division of Oil, Gas and Mining in 1997. Eighteen (18) areas of concern were identified and are listed in Appendix B. Eight (8) of the areas considered highwalls were constructed prior to the ruling (May 3, 1978) of the Surface Mining Control and Reclamation Act (SMCRA). Seven (7) portal highwalls were constructed after that date. Three (3) of the areas of concern have no associated highwalls. Sites constructed prior to May 3, 1978 need only to eliminate highwalls to the extent practicable using all reasonably available spoil. All post-SMCRA sites are required to completely eliminate highwalls. Appendix B exhibits the extent of backfill that will be used to eliminate as practicable or eliminate completely these highwalls. This is shown in a photo essay for each of these portals. All highwalls at the Cottonwood/Wilberg mines will be eliminated concurrently with final reclamation activities. A detailed cost estimation for all reclamation activities is located in Appendix H.

**PacifiCorp**

**Cottonwood/Wilberg Mine**

**C/015/0019**

**Volume 2, Part 4, Appendix I**

**Add site plan, hydrological calculations and data, Attachment A, Attachment B, Public Road Easement Document**

**PacifiCorp**

**Cottonwood/Wilberg Mine**

**C/015/0019**

**Appendix I**

**Plan for Truck Turnaround at the Trail Mountain Access  
Reclamation Site**

**Site Plan:**

Emery County proposes to construct a snow plow truck turn around within the disturbed area of the 1.86 acre site of the Trail Mountain Access area. The County claims that their trucks cannot safely turn around at the end of the county road #506. The county expressed their concerns with PacifiCorp about acquiring an easement within the company's reclamation site. PacifiCorp agreed with the county and issued them an easement to allow them to construct the turnaround.

Within the easement, approximately 0.04 acres will be impacted by the turnaround. A 70 foot 18" CMP will be installed which will keep the truck from impacting any drainage from above the site. Refer to the hydrological calculations for contributing runoff and culvert sizing.

A large boulder on the east side of the easement will be removed and disposed of. The surface of the turnaround will be covered with 6" of untreated base course. The base course will be graded to allow for runoff and compacted to the specifications of the Emery County Road Department. The turnaround and all its appurtenances will be a permanent feature of the reclamation site.

## Rational Method for Calculating Runoff for Area above Snow Plow Turnaround

$$Q=CiA$$

where,

Q = peak flow rate (cfs)  
 C = dimensionless coefficient  
 i = rainfall intensity (iph)  
 A = drainage area (ac)

Solve for C; refer to chart

Solve for i; (refer to Attachment 1)  
 from NOAA Atlas 14 Volume 1, Version 5  
 Location Huntington Utah  
 Lat. 39.3195 d, Long. -111.1828  
 Elevation = 8509 ft

$$i=0.382$$

Solve for A; (Refer to Attachment 2)

$$A = 5.24 \text{ acres}$$

therefore;

$$Q = CiA = 0.4 * 0.382 * 5.24 = 0.80 \text{ cfs}$$

### Required Culvert Size for Runoff Volume

Based on Mannings Equation:

$$D = \left( \frac{2.16 Qn}{\sqrt{S}} \right)^{0.35}$$

where,

D = Required Diameter (ft)  
 Q = Peak Discharge (cfs)  
 n = Roughness Factor (0.25 for CMP)  
 S = Slope (ft/ft)

therefore,

$$D = \left( \left( \frac{2.16 Qn}{\sqrt{S}} \right)^{0.35} \right) = \left( \left( \frac{2.16 * 0.80 * 0.025}{\sqrt{0.1}} \right)^{0.35} \right) = \left( \left( \frac{0.0432}{0.3162} \right)^{0.35} \right) = 0.498 \text{ ft}$$

Field size culvert calls for an 18" culvert. Therefore culvert sizing checks.

C Values - Rural Areas

Topography and Vegetation	Open sandy loam	Clay and silt loam	Tight clay
Woodland			
Flat (0-5% slope)	0.10	0.30	0.40
Rolling (5-10% slope)	0.25	0.35	0.50
Hilly (10-30% slope)	0.30	0.50	0.60
Pasture			
Flat	0.10	0.30	0.40
Rolling	0.16	0.36	0.55
Hilly	0.22	0.42	0.60
Cultivated			
Flat	0.30	0.50	0.60
Rolling	0.40	0.60	0.70
Hilly	0.52	0.72	0.82



**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Huntington, Utah, USA\***  
**Latitude: 39.3184°, Longitude: -111.1869°**  
**Elevation: 7737.39 ft\*\***



\* source: ESRI Maps  
 \*\* source: USGS

**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF\\_tabular](#) | [PF\\_graphical](#) | [Maps & aeriels](#)

**PF tabular**

<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)<sup>1</sup></b>										
<b>Duration</b>	<b>Average recurrence interval (years)</b>									
	<b>1</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>	<b>200</b>	<b>500</b>	<b>1000</b>
<b>5-min</b>	0.140 (0.122-0.164)	0.179 (0.157-0.212)	0.247 (0.214-0.289)	0.304 (0.261-0.358)	0.393 (0.328-0.462)	0.470 (0.386-0.555)	0.559 (0.449-0.664)	0.663 (0.517-0.793)	0.826 (0.615-1.01)	0.976 (0.700-1.22)
<b>10-min</b>	0.212 (0.185-0.249)	0.273 (0.239-0.322)	0.376 (0.325-0.440)	0.463 (0.397-0.544)	0.598 (0.500-0.703)	0.716 (0.587-0.845)	0.852 (0.684-1.01)	1.01 (0.786-1.21)	1.26 (0.936-1.54)	1.49 (1.07-1.85)
<b>15-min</b>	0.263 (0.230-0.309)	0.339 (0.296-0.399)	0.467 (0.403-0.545)	0.574 (0.492-0.675)	0.741 (0.619-0.872)	0.887 (0.727-1.05)	1.06 (0.847-1.25)	1.25 (0.975-1.50)	1.56 (1.16-1.91)	1.84 (1.32-2.29)
<b>30-min</b>	0.354 (0.309-0.416)	0.457 (0.398-0.538)	0.628 (0.542-0.734)	0.773 (0.662-0.908)	0.998 (0.834-1.18)	1.19 (0.979-1.41)	1.42 (1.14-1.69)	1.68 (1.31-2.02)	2.10 (1.56-2.57)	2.48 (1.78-3.09)
<b>60-min</b>	0.438 (0.383-0.515)	0.565 (0.493-0.665)	0.777 (0.671-0.909)	0.957 (0.819-1.12)	1.24 (1.03-1.45)	1.48 (1.21-1.75)	1.76 (1.41-2.09)	2.08 (1.62-2.50)	2.60 (1.93-3.18)	3.07 (2.20-3.82)
<b>2-hr</b>	0.540 (0.474-0.624)	0.683 (0.600-0.791)	0.909 (0.794-1.05)	1.11 (0.960-1.28)	1.43 (1.21-1.65)	1.70 (1.41-1.99)	2.02 (1.64-2.38)	2.40 (1.89-2.84)	2.99 (2.25-3.61)	3.53 (2.56-4.35)
<b>3-hr</b>	0.612 (0.546-0.697)	0.769 (0.684-0.879)	0.988 (0.877-1.13)	1.19 (1.05-1.36)	1.50 (1.30-1.72)	1.76 (1.50-2.03)	2.08 (1.74-2.42)	2.45 (2.00-2.88)	3.05 (2.40-3.66)	3.60 (2.73-4.39)
<b>6-hr</b>	0.807 (0.726-0.903)	1.00 (0.906-1.12)	1.24 (1.11-1.39)	1.44 (1.29-1.62)	1.73 (1.53-1.95)	1.99 (1.74-2.25)	2.29 (1.97-2.61)	2.64 (2.23-3.04)	3.24 (2.67-3.80)	3.78 (3.05-4.51)
<b>12-hr</b>	1.02 (0.930-1.13)	1.26 (1.15-1.40)	1.54 (1.39-1.71)	1.78 (1.60-1.97)	2.10 (1.87-2.34)	2.36 (2.09-2.64)	2.63 (2.30-2.97)	2.97 (2.56-3.38)	3.57 (3.02-4.11)	4.13 (3.45-4.82)
<b>24-hr</b>	1.18 (1.07-1.31)	1.47 (1.33-1.63)	1.81 (1.64-2.02)	2.09 (1.88-2.32)	2.46 (2.21-2.74)	2.75 (2.45-3.07)	3.06 (2.70-3.41)	3.36 (2.94-3.77)	3.78 (3.26-4.26)	4.17 (3.50-4.87)
<b>2-day</b>	1.40 (1.27-1.55)	1.75 (1.59-1.93)	2.16 (1.96-2.39)	2.50 (2.26-2.77)	2.98 (2.67-3.29)	3.35 (2.99-3.71)	3.75 (3.31-4.17)	4.15 (3.63-4.64)	4.71 (4.05-5.31)	5.16 (4.37-5.86)
<b>3-day</b>	1.57 (1.43-1.75)	1.96 (1.78-2.19)	2.44 (2.20-2.71)	2.83 (2.55-3.14)	3.37 (3.01-3.75)	3.80 (3.37-4.23)	4.25 (3.74-4.74)	4.72 (4.10-5.29)	5.36 (4.59-6.06)	5.88 (4.96-6.69)
<b>4-day</b>	1.74 (1.58-1.95)	2.18 (1.97-2.44)	2.71 (2.45-3.03)	3.15 (2.83-3.52)	3.76 (3.35-4.20)	4.24 (3.75-4.75)	4.75 (4.17-5.32)	5.28 (4.58-5.94)	6.02 (5.13-6.81)	6.60 (5.55-7.53)
<b>7-day</b>	2.15 (1.94-2.40)	2.69 (2.43-3.01)	3.36 (3.02-3.75)	3.91 (3.50-4.37)	4.67 (4.15-5.22)	5.28 (4.65-5.92)	5.92 (5.17-6.65)	6.58 (5.68-7.43)	7.50 (6.36-8.54)	8.23 (6.89-9.45)
<b>10-day</b>	2.48 (2.25-2.76)	3.11 (2.81-3.46)	3.88 (3.50-4.31)	4.50 (4.04-5.00)	5.34 (4.76-5.95)	6.00 (5.31-6.70)	6.69 (5.87-7.49)	7.38 (6.42-8.31)	8.35 (7.14-9.46)	9.11 (7.70-10.4)
<b>20-day</b>	3.45 (3.11-3.83)	4.33 (3.91-4.81)	5.41 (4.88-6.01)	6.27 (5.63-6.96)	7.43 (6.62-8.24)	8.33 (7.36-9.26)	9.26 (8.12-10.3)	10.2 (8.86-11.4)	11.5 (9.83-12.9)	12.5 (10.6-14.2)
<b>30-day</b>	4.24 (3.82-4.69)	5.30 (4.79-5.88)	6.58 (5.93-7.30)	7.59 (6.81-8.40)	8.93 (7.97-9.90)	9.95 (8.84-11.0)	11.0 (9.70-12.2)	12.0 (10.5-13.5)	13.4 (11.6-15.1)	14.5 (12.4-16.5)
<b>45-day</b>	5.26 (4.77-5.83)	6.60 (5.99-7.31)	8.18 (7.40-9.06)	9.42 (8.48-10.4)	11.1 (9.90-12.3)	12.4 (11.0-13.7)	13.7 (12.0-15.2)	15.0 (13.1-16.8)	16.9 (14.5-19.0)	18.3 (15.5-20.8)
<b>60-day</b>	6.31 (5.71-6.97)	7.93 (7.18-8.76)	9.84 (8.89-10.9)	11.3 (10.2-12.5)	13.2 (11.9-14.7)	14.7 (13.1-16.4)	16.2 (14.3-18.1)	17.7 (15.5-19.9)	19.8 (17.0-22.3)	21.4 (18.2-24.3)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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**NOAA Atlas 14, Volume 1, Version 5**  
**Location name: Huntington, Utah, USA\***  
**Latitude: 39.3195°, Longitude: -111.1828°**  
**Elevation: 8509.63 ft\*\***



\* source: ESRI Maps  
 \*\* source: USGS

**POINT PRECIPITATION FREQUENCY ESTIMATES**

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

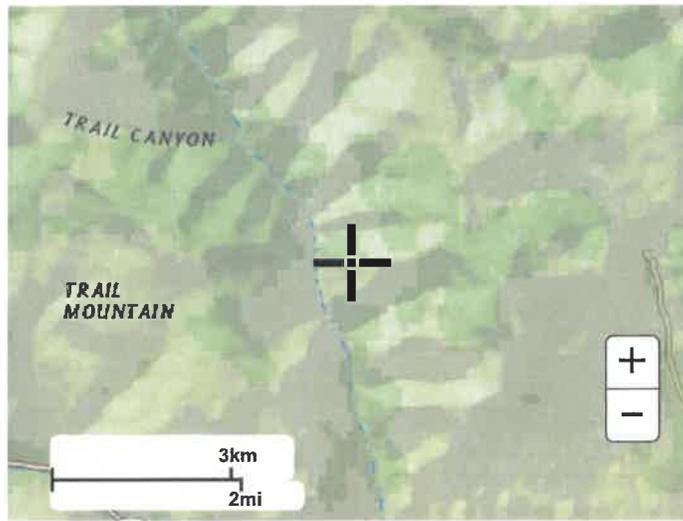
[PF tabular](#) | [PF graphical](#) | [Maps & aeriels](#)

**PF tabular**

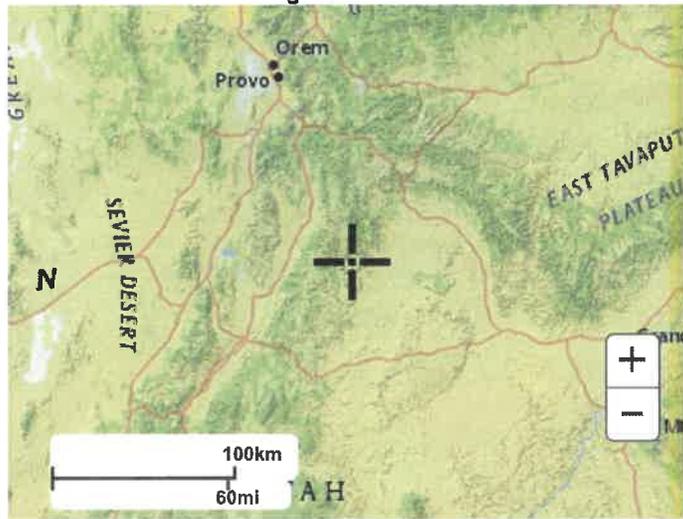
<b>PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)<sup>1</sup></b>										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
<b>5-min</b>	<b>1.68</b> (1.46-1.97)	<b>2.15</b> (1.88-2.54)	<b>2.96</b> (2.57-3.47)	<b>3.65</b> (3.13-4.30)	<b>4.72</b> (3.94-5.54)	<b>5.64</b> (4.63-6.66)	<b>6.71</b> (5.39-7.97)	<b>7.96</b> (6.20-9.52)	<b>9.91</b> (7.38-12.1)	<b>11.7</b> (8.40-14.6)
<b>10-min</b>	<b>1.27</b> (1.11-1.49)	<b>1.64</b> (1.43-1.93)	<b>2.26</b> (1.95-2.64)	<b>2.78</b> (2.38-3.26)	<b>3.59</b> (3.00-4.22)	<b>4.30</b> (3.52-5.07)	<b>5.11</b> (4.10-6.07)	<b>6.05</b> (4.72-7.24)	<b>7.55</b> (5.62-9.22)	<b>8.92</b> (6.39-11.1)
<b>15-min</b>	<b>1.05</b> (0.920-1.24)	<b>1.36</b> (1.18-1.60)	<b>1.87</b> (1.61-2.18)	<b>2.30</b> (1.97-2.70)	<b>2.96</b> (2.48-3.49)	<b>3.55</b> (2.91-4.19)	<b>4.22</b> (3.39-5.02)	<b>5.00</b> (3.90-5.99)	<b>6.24</b> (4.64-7.62)	<b>7.36</b> (5.28-9.18)
<b>30-min</b>	<b>0.708</b> (0.618-0.832)	<b>0.914</b> (0.796-1.08)	<b>1.26</b> (1.08-1.47)	<b>1.55</b> (1.32-1.82)	<b>2.00</b> (1.67-2.35)	<b>2.39</b> (1.96-2.82)	<b>2.84</b> (2.28-3.38)	<b>3.37</b> (2.63-4.03)	<b>4.20</b> (3.13-5.13)	<b>4.96</b> (3.56-6.18)
<b>60-min</b>	<b>0.438</b> (0.383-0.515)	<b>0.565</b> (0.493-0.665)	<b>0.777</b> (0.671-0.909)	<b>0.957</b> (0.819-1.12)	<b>1.24</b> (1.03-1.45)	<b>1.48</b> (1.21-1.75)	<b>1.76</b> (1.41-2.09)	<b>2.08</b> (1.62-2.50)	<b>2.60</b> (1.93-3.18)	<b>3.07</b> (2.20-3.82)
<b>2-hr</b>	<b>0.270</b> (0.237-0.312)	<b>0.342</b> (0.300-0.396)	<b>0.454</b> (0.397-0.526)	<b>0.556</b> (0.480-0.642)	<b>0.712</b> (0.602-0.826)	<b>0.850</b> (0.706-0.993)	<b>1.01</b> (0.820-1.19)	<b>1.20</b> (0.944-1.42)	<b>1.49</b> (1.13-1.80)	<b>1.76</b> (1.28-2.17)
<b>3-hr</b>	<b>0.204</b> (0.182-0.232)	<b>0.256</b> (0.228-0.293)	<b>0.329</b> (0.292-0.377)	<b>0.395</b> (0.348-0.454)	<b>0.498</b> (0.432-0.572)	<b>0.585</b> (0.498-0.677)	<b>0.692</b> (0.578-0.805)	<b>0.816</b> (0.666-0.959)	<b>1.02</b> (0.799-1.22)	<b>1.20</b> (0.910-1.46)
<b>6-hr</b>	<b>0.135</b> (0.121-0.151)	<b>0.167</b> (0.151-0.187)	<b>0.207</b> (0.186-0.231)	<b>0.241</b> (0.216-0.270)	<b>0.289</b> (0.255-0.325)	<b>0.331</b> (0.290-0.375)	<b>0.382</b> (0.328-0.436)	<b>0.440</b> (0.372-0.507)	<b>0.540</b> (0.446-0.634)	<b>0.631</b> (0.509-0.753)
<b>12-hr</b>	<b>0.085</b> (0.077-0.094)	<b>0.105</b> (0.096-0.116)	<b>0.128</b> (0.116-0.142)	<b>0.148</b> (0.133-0.164)	<b>0.174</b> (0.156-0.194)	<b>0.196</b> (0.173-0.219)	<b>0.219</b> (0.191-0.246)	<b>0.246</b> (0.213-0.280)	<b>0.296</b> (0.251-0.341)	<b>0.343</b> (0.286-0.400)
<b>24-hr</b>	<b>0.049</b> (0.044-0.055)	<b>0.061</b> (0.055-0.068)	<b>0.075</b> (0.068-0.084)	<b>0.087</b> (0.078-0.097)	<b>0.103</b> (0.092-0.114)	<b>0.115</b> (0.102-0.128)	<b>0.127</b> (0.112-0.142)	<b>0.140</b> (0.123-0.157)	<b>0.157</b> (0.136-0.178)	<b>0.174</b> (0.146-0.203)
<b>2-day</b>	<b>0.029</b> (0.027-0.032)	<b>0.036</b> (0.033-0.040)	<b>0.045</b> (0.041-0.050)	<b>0.052</b> (0.047-0.058)	<b>0.062</b> (0.056-0.069)	<b>0.070</b> (0.062-0.077)	<b>0.078</b> (0.069-0.087)	<b>0.086</b> (0.076-0.097)	<b>0.098</b> (0.084-0.111)	<b>0.107</b> (0.091-0.122)
<b>3-day</b>	<b>0.022</b> (0.020-0.024)	<b>0.027</b> (0.025-0.030)	<b>0.034</b> (0.031-0.038)	<b>0.039</b> (0.035-0.044)	<b>0.047</b> (0.042-0.052)	<b>0.053</b> (0.047-0.059)	<b>0.059</b> (0.052-0.066)	<b>0.065</b> (0.057-0.073)	<b>0.075</b> (0.064-0.084)	<b>0.082</b> (0.069-0.093)
<b>4-day</b>	<b>0.018</b> (0.016-0.020)	<b>0.023</b> (0.021-0.025)	<b>0.028</b> (0.025-0.032)	<b>0.033</b> (0.029-0.037)	<b>0.039</b> (0.035-0.044)	<b>0.044</b> (0.039-0.049)	<b>0.050</b> (0.043-0.055)	<b>0.055</b> (0.048-0.062)	<b>0.063</b> (0.053-0.071)	<b>0.069</b> (0.058-0.078)
<b>7-day</b>	<b>0.013</b> (0.012-0.014)	<b>0.016</b> (0.014-0.018)	<b>0.020</b> (0.018-0.022)	<b>0.023</b> (0.021-0.026)	<b>0.028</b> (0.025-0.031)	<b>0.031</b> (0.028-0.035)	<b>0.035</b> (0.031-0.040)	<b>0.039</b> (0.034-0.044)	<b>0.045</b> (0.038-0.051)	<b>0.049</b> (0.041-0.056)
<b>10-day</b>	<b>0.010</b> (0.009-0.012)	<b>0.013</b> (0.012-0.014)	<b>0.016</b> (0.015-0.018)	<b>0.019</b> (0.017-0.021)	<b>0.022</b> (0.020-0.025)	<b>0.025</b> (0.022-0.028)	<b>0.028</b> (0.024-0.031)	<b>0.031</b> (0.027-0.035)	<b>0.035</b> (0.030-0.039)	<b>0.038</b> (0.032-0.043)
<b>20-day</b>	<b>0.007</b> (0.006-0.008)	<b>0.009</b> (0.008-0.010)	<b>0.011</b> (0.010-0.013)	<b>0.013</b> (0.012-0.014)	<b>0.015</b> (0.014-0.017)	<b>0.017</b> (0.015-0.019)	<b>0.019</b> (0.017-0.021)	<b>0.021</b> (0.018-0.024)	<b>0.024</b> (0.020-0.027)	<b>0.026</b> (0.022-0.030)
<b>30-day</b>	<b>0.006</b> (0.005-0.007)	<b>0.007</b> (0.007-0.008)	<b>0.009</b> (0.008-0.010)	<b>0.011</b> (0.009-0.012)	<b>0.012</b> (0.011-0.014)	<b>0.014</b> (0.012-0.015)	<b>0.015</b> (0.013-0.017)	<b>0.017</b> (0.015-0.019)	<b>0.019</b> (0.016-0.021)	<b>0.020</b> (0.017-0.023)
<b>45-day</b>	<b>0.005</b> (0.004-0.005)	<b>0.006</b> (0.006-0.007)	<b>0.008</b> (0.007-0.008)	<b>0.009</b> (0.008-0.010)	<b>0.010</b> (0.009-0.011)	<b>0.011</b> (0.010-0.013)	<b>0.013</b> (0.011-0.014)	<b>0.014</b> (0.012-0.016)	<b>0.016</b> (0.013-0.018)	<b>0.017</b> (0.014-0.019)
<b>60-day</b>	<b>0.004</b> (0.004-0.005)	<b>0.006</b> (0.005-0.006)	<b>0.007</b> (0.006-0.008)	<b>0.008</b> (0.007-0.009)	<b>0.009</b> (0.008-0.010)	<b>0.010</b> (0.009-0.011)	<b>0.011</b> (0.010-0.013)	<b>0.012</b> (0.011-0.014)	<b>0.014</b> (0.012-0.015)	<b>0.015</b> (0.013-0.017)

<sup>1</sup> Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

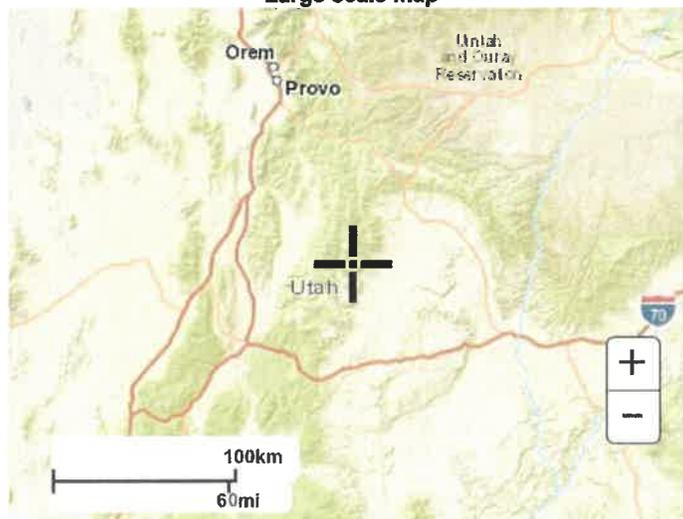
[Back to Top](#)



Large scale terrain



Large scale map



Large scale aerial

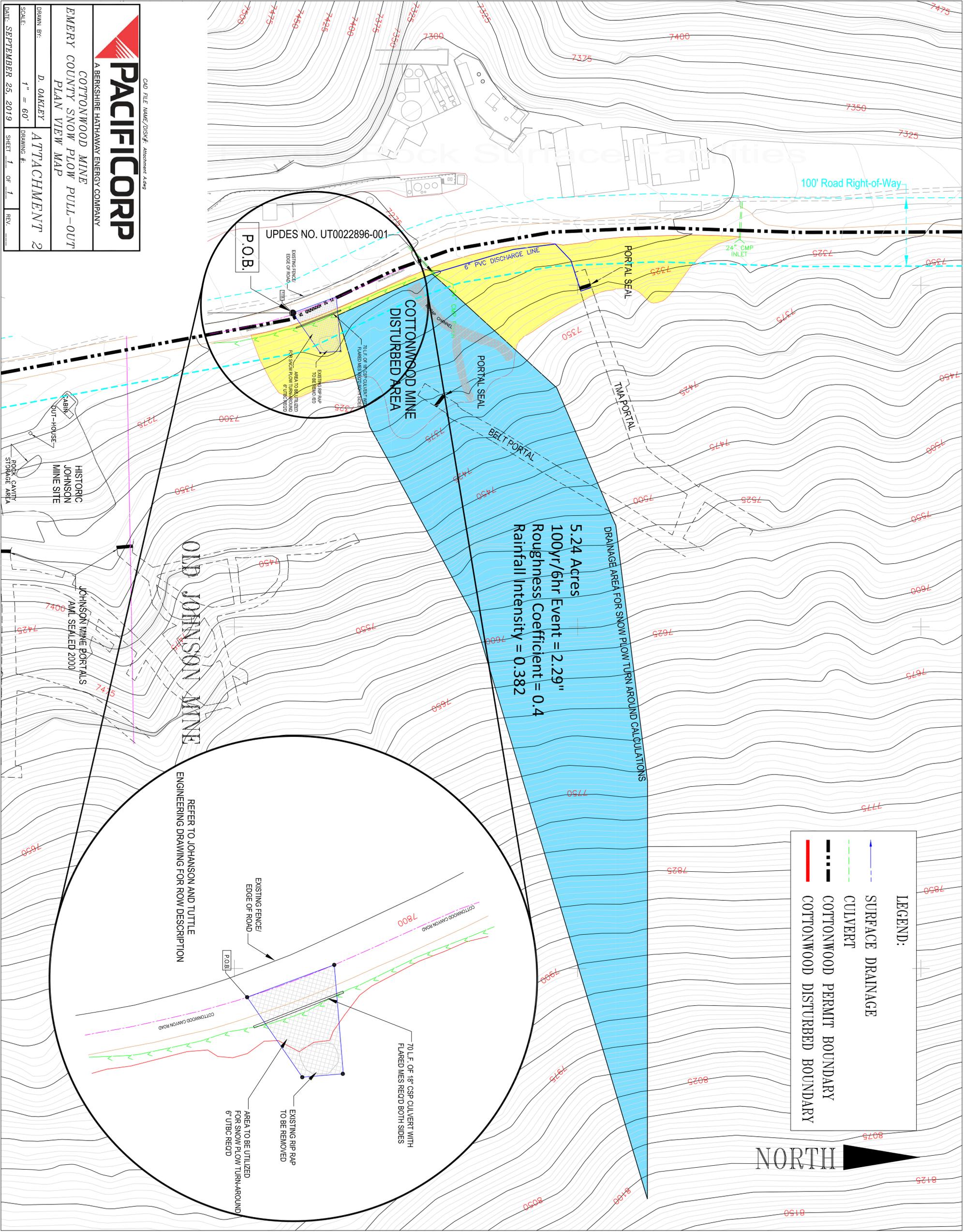
CAD FILE NAME/DISK#: Attachment A.dwg

**PACIFICORP**  
A BERKSHIRE HATHAWAY ENERGY COMPANY

COTTONWOOD MINE  
EMERY COUNTY SNOW PLOW PULL-OUT  
PLAN VIEW MAP

DRAWN BY: D. OAKLEY  
SCALE: 1" = 60'  
DATE: SEPTEMBER 25, 2019

ATTACHMENT 2  
DRAWING #:  
SHEET 1 OF 1  
REV: \_\_\_\_\_



**LEGEND:**

	SURFACE DRAINAGE
	CULVERT
	COTTONWOOD PERMIT BOUNDARY
	COTTONWOOD DISTURBED BOUNDARY



DRAINAGE AREA FOR SNOW PLOW TURN AROUND CALCULATIONS

5.24 Acres  
100yr/6hr Event = 2.29"  
Roughness Coefficient = 0.4  
Rainfall Intensity = 0.382

REFER TO JOHANSON AND TUTTLE  
ENGINEERING DRAWING FOR ROW DESCRIPTION

CERTIFICATE

I, WACEY R. ALLRED, A PROFESSIONAL LAND SURVEYOR HOLDING UTAH CERTIFICATE NO. 11179291, DO HEREBY CERTIFY THAT THE PLAT SHOWN HEREON HAS BEEN PREPARED FROM A FIELD SURVEY MADE UNDER MY DIRECTION AND CORRECTLY SHOWS THE DIMENSIONS AND MONUMENTS OF THE PROPERTY DESCRIBED TO THE BEST OF MY KNOWLEDGE AND BELIEF.



PURPOSE OF SURVEY:

PacifiCorp is deeding a parcel of land to Emery County Road Department for the use of a snow plow turn around.

LOCATION OF SURVEY:

Located within the Southwest quarter of the Northeast quarter of Section 25, Township 17 South, Range 6 East, Salt Lake Base and Meridian.

PROPERTY DESCRIPTION:

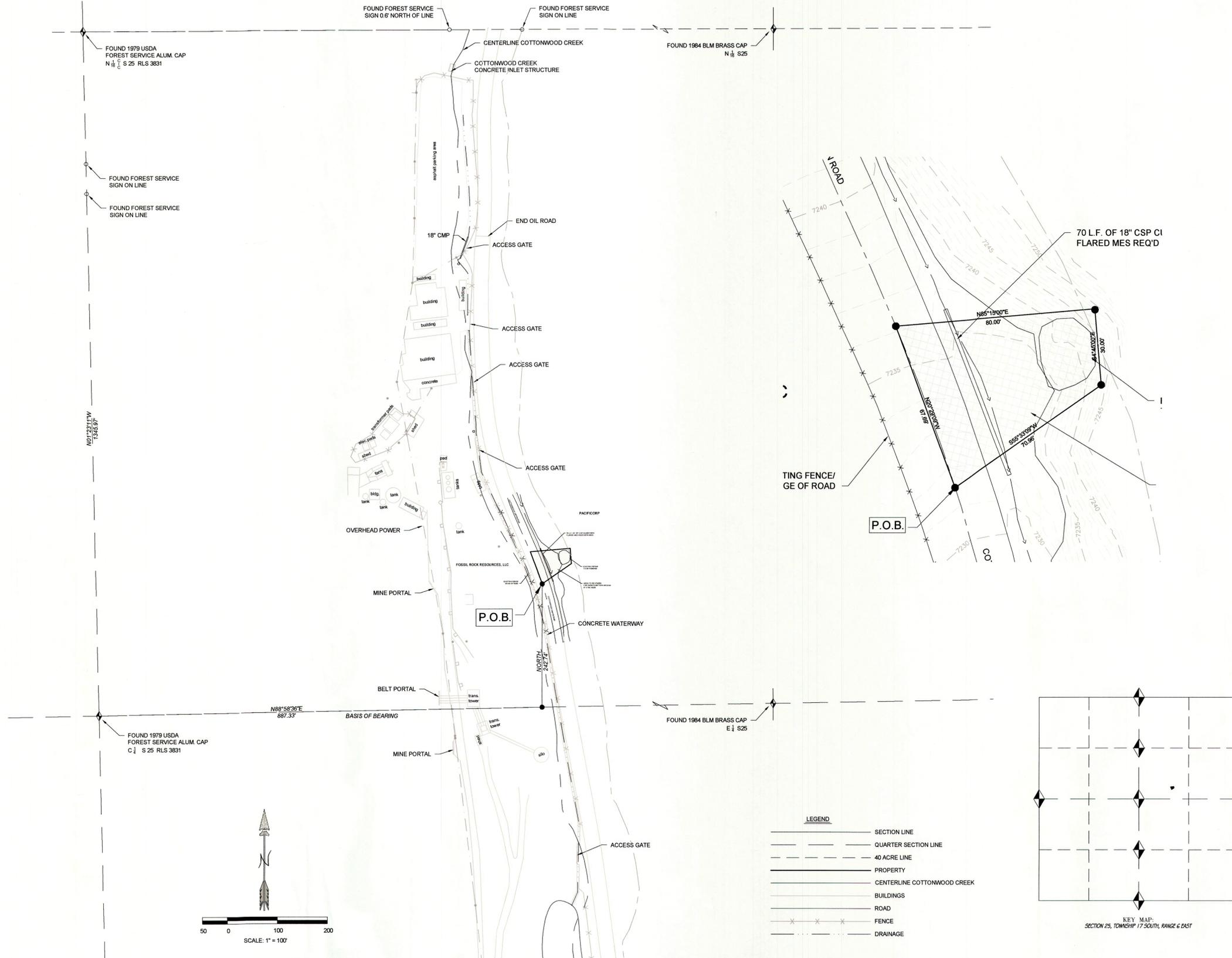
Beginning at a point which is located N 88°58'36" E, 887.33 feet along the Center Section Line and North, 242.74 feet from the Center of Section 25, Township 17 South, Range 6 East, SLB&M, said point being at the center of Cottonwood Canyon Road; thence N 20°29'09" W, 67.69 feet along said centerline; thence N 85°15'00" E, 80.00 feet; thence S 04°45'00" E, 30.00 feet; thence S 55°33'09" W, 70.96 feet more or less to the point of beginning. Containing 0.08 acres more or less.

BASIS OF BEARING:

N 88°58'36" E between the Center and the East Quarter Corner of Section 25, T 17 S, R 6 E, SLB&M.

MONUMENTS FOUND:

◆ Denotes Section monument found.



DESIGNED	CHECKED	DATE	SCALE
DRAWN	WRA	08/06/19	1" = 100'
SURVEYED	LO	08/06/19	DRAWN BY
R.O.W.	CHECKED		M/LB
PROJECT FILE: Please Surveys@PacifiCorp.com			
<b>WACEY R. ALLRED</b>			
PROFESSIONAL LAND SURVEYOR 11179291			
<b>PACIFICORP</b>			
<b>TRAIL MOUNTAIN MINE</b>			
SECTION	TOWNSHIP	RANGE	DATE
25	17 S.	6 E.	08/06/19
PROJECT No.			
SHEET No.			
			1

WHEN RECORDED, RETURN TO:

Rocky Mountain Power  
Attn: Lisa Louder/ Clint Herrera  
1407 West North Temple, Suite 110  
Salt Lake City, Utah 84116  
Parcel No. UTEM-0524  
File No. \_\_\_\_\_  
Tax ID No. L3-0011-0002

## PUBLIC ROADWAY EASEMENT

ROCKY MOUNTAIN POWER, an unincorporated division of PacifiCorp, successor in interest to Utah Power & Light Company, whose principal office is located at 1407 West North Temple, Salt Lake City, Utah, 84116, (“GRANTOR”), hereby CONVEYS to Emery County Road Department, its successors-in-interest and assigns (“GRANTEE”), in consideration of the mutual promises and other good and valuable consideration, a perpetual easement and right of way for the installation, construction, operation, maintenance and repair of a public roadway turn around (referred hereafter as “Turn Around”), along with a perpetual easement and right of way for the associated public utilities, in on, and/or across the following described real property owned by Grantor located in Emery County, State of Utah, to-wit:

The Turn Around is located alongside Emery County Road No. 506 within the Southwest quarter of the Northeast quarter of Section 25, Township 17 South, Range 6 East, Salt Lake Base and Meridian.

Beginning at a point which is located N 88°58'36" E, 887.33 feet along the Center Section Line and North, 242.74 feet from the Center of Section 25, Township 17 South, Range 6 East, SLB&M, said point being at the center of Cottonwood Canyon Road (Emery County Road No. 506); thence N 20°29'09" W, 67.69 feet along said centerline; thence N 85°15'00" E, 80.00 feet; thence S 04°45'00" E, 30.00 feet; thence S 55°33'09" W, 70.96 feet more or less to the point of beginning.  
Containing 0.08 acres more or less.

This easement is granted subject to the following restrictive conditions:

- 1) Grantee, its successors and assigns, will not make or allow to be made any use of the easement herein granted that is inconsistent with, or interferes in any manner with Grantor's operation, maintenance or repair of Grantor's existing installations or additional construction and installations constructed after the granting of this easement, including electric transmission and distribution circuits that cross over or above the property as herein described.
- 2) Prior to making any improvements to the land or placing any structure within Grantor's Land, Grantee shall submit detailed plans and specifications to Grantor at least thirty (30) days in advance.

Grantor reserves the right to deny or require modifications to such plans to ensure the improvements will not impair Grantor's facilities or uses of its property. All improvements shall be made in a good and workmanlike manner consistent with applicable building codes or other applicable governmental requirements.

- 3) Grantee, acknowledges that the location of the Turn Around as described above is situated within PacifiCorp's Cottonwood mine and reclamation permit no. C/015/0119, of which have been reclaimed in accordance with federal and state laws, and Grantee further acknowledges and agrees to support PacifiCorp's permitting efforts with the Utah Division of Oil, Gas & Mining to remove the described Turn Around area from the said permit, to secure all necessary approvals and bond release on this particular area of the Turn Around.
- 4) Grantee will install a drainage culvert of adequate size with flared ends at the toe of the slope to collect and pass precipitation storm events to bypass the reclaimed mine lands, perform regular maintenance to keep it clear of debris and free flowing. Grantee shall keep the culvert operational at all times. In the event, the culvert becomes plugged and causing it to runoff over the top of the inlet, Grantee shall immediately remove the material and debris from the culvert and repair any and all damage, gullies and rills caused by the uncontrolled storm water flows. Furthermore, the Grantee may utilize some of the existing larger rocks at the site to construct a protective barrier at the toe of the reclaimed slope to prevent encroachment onto the adjacent reclaimed mine lands. Grantee shall not regrade any of the reclaimed mine land slopes. The creation and construction of the Turn Around to meet the needs of the Grantee will be built by the Grantee at its sole expense and to the satisfaction of the Grantor.
- 5) In the event that curb and gutter is constructed on the easement herein granted by Grantee or made as a condition of development by Grantee, said curb and gutter will be high-back type and will contain a 30-foot curb cut on both sides of the roadway located at place designated by the Grantor, which curb cut will permit passage of Grantor's equipment used for repair and maintenance of Grantor's substation and electric transmission lines. Roadway construction will be sufficient to support Grantor's equipment in excess of 50 tons.
- 6) Grantee, its successors and assigns, will not use or permit to be used on said easement construction cranes or other equipment that violate OSHA and UTAH High Voltage Act Safety Clearance Standards. Grantee shall not store materials within the easement area. Grantee will not excavate within 50 feet of Grantor's transmission structures. The storage of flammable and hazardous materials or refueling of vehicle/equipment is prohibited within the easement area. At no time shall Grantee place any equipment or materials of any kind that exceeds twelve (12) feet in height, or that creates a material risk of endangering Grantor's facilities, or that may pose a risk to human safety or environmental harm. Grantee's use of the easement area shall comply with OSHA and UTAH High Voltage Act Safety Clearance Standards.
- 7) Grantee shall not place or allow to be placed any trees or other vegetation within the easement.
- 8) In the event Grantee ceases to use, for purposes of a roadway, the property herein described, this easement shall thereupon immediately terminate, with all rights and interest conveyed herein by Grantor to revert back to Grantor by instrument of disclaimer from Grantee, or its successors or

assigns.

- 9) Grantor shall have the right, at any time and from time to time, to cross and recross with equipment, personnel, overhead power lines or underground power lines and access roads, at any location or locations thereon, the lands included with the easement herein conveyed by Grantor to Grantee.
- 10) Release and Indemnification
  - a) Grantee, its successors and assigns, shall use the Easement Area at its own risk and agrees to indemnify, defend and hold harmless Grantor and Grantor's affiliated companies, officers, directors, shareholders, agents, employees, successors and assigns, (the "Indemnified Parties") for, from and against all liabilities, claims, damages, losses, suits, judgments, causes of action, liens, fines, penalties, costs, and expenses (including, but not limited to, court costs, attorney's fees, and costs of investigation), of any nature, kind or description of any person or entity, directly or indirectly arising out of, caused by, or resulting from (in whole or in part), (i) the breach by Grantee of any provision of this agreement, (ii) Grantee's use and occupation of the Easement Area, (iii) any act or occurrence on the Easement Area, or (iv) any act or omission of Grantee, any independent contractor retained by Grantee, anyone directly or indirectly employed by them, or anyone authorized by Grantee to control or exercise control over (hereinafter collectively referred to as "claims"), even if such claims arise from or are attributed to the concurrent negligence of any of the Indemnified Parties.
  - b) The Indemnified Parties shall never be liable in any manner to Grantee for any injury to or death of persons or for any loss of or damage to property of Grantor, its employees, agents, customers, invitees, or to others, even if such loss or damage is caused in part by the negligence of any Indemnified Party. All personal property and fixtures, if allowed by Grantor, located within the Easement Area shall be maintained and used at the risk of Grantee and the Indemnified parties shall not be liable for any damage thereto or theft thereof, even if due in whole or in part to the negligence of the Indemnified Parties.
- 11) To the fullest extent permitted by law, each of the parties hereto waives any right it may have to a trial by jury in respect of litigation directly or indirectly arising out of, under or in connection with this agreement. Each party further waives any right to consolidate any action in which a jury trial has been waived with any other action in which a jury trial cannot be or has not been waived.

IN WITNESS WHEREOF, the Grantor has caused its corporate name to be hereunto affixed by its duly authorized officer this 23 day of September, 2019.

**ROCKY MOUNTAIN POWER,**  
an unincorporated division of PacifiCorp

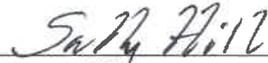


By: Dana M. Ralston  
Its: Sr. Vice President of Thermal Generation & Mining



STATE OF UTAH            )  
  ):ss  
COUNTY OF SALT LAKE )

On the 23 day of September, 2019, personally appeared before me Dana M. Ralston, who being duly sworn did say that he is the signer of the within instrument on behalf of Rocky Mountain Power, an unincorporated division of PacifiCorp and that the within and foregoing instrument was signed by authority of said corporation and said Sr. Vice President duly acknowledged to me that said corporation executed the same.

  
\_\_\_\_\_  
Notary Public

My Commission Expires:

Residing at: Grantsville, UT

