

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

Clear Form

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

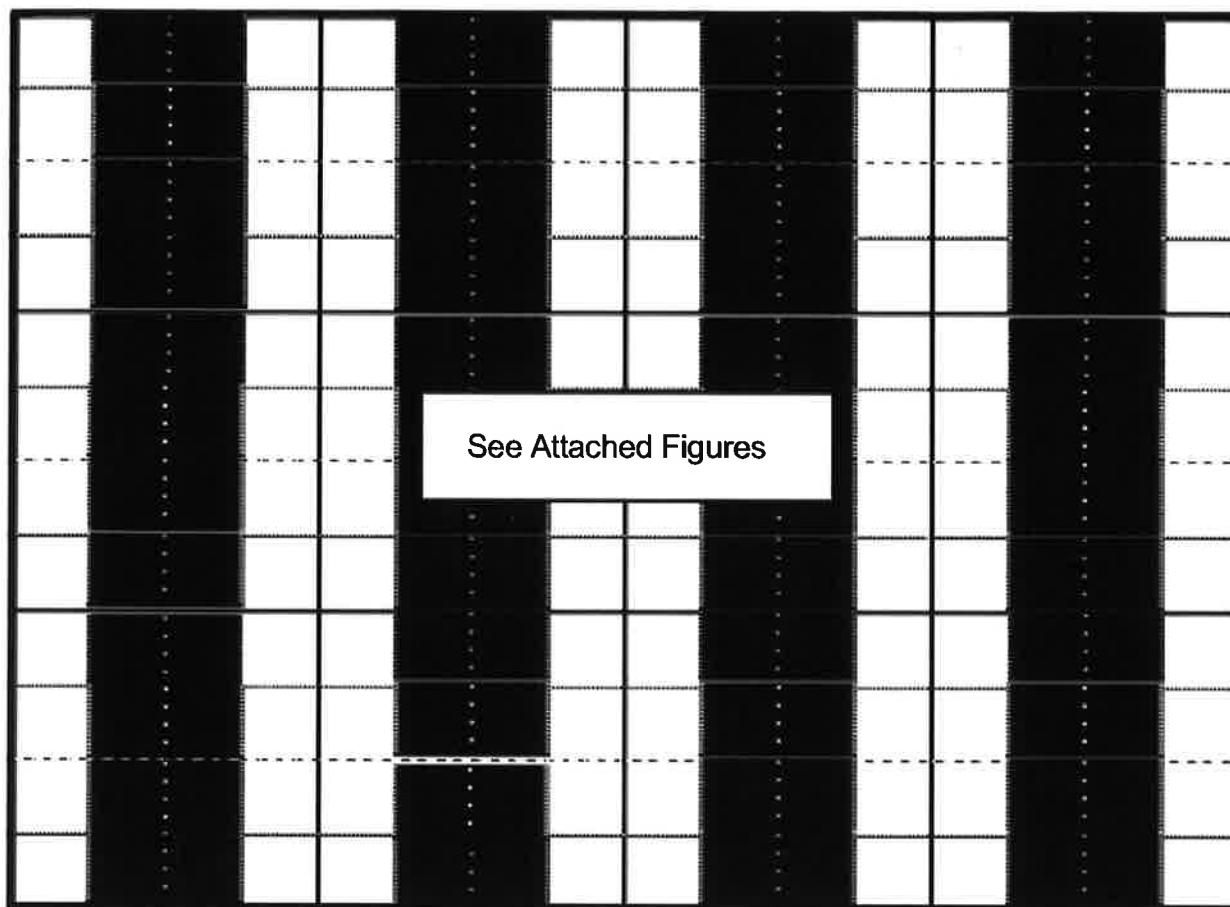
A. GENERAL INFORMATIONPermit No. 13-79341. Owner PacifiCorp Phone No. 801-220-7803 (Buffi Morris)Current address 1407 W. North Temple, Suite 110, Salt Lake City, UT 841162. Examiner's name Patrick Naylor (Rocky Mtn. Environmental Assoc.) EXAM DATE October 2, 20193. Accompanied by Stewart Edwards Email stewart.edwards@pacificcorp.comAddress 1407 W. North Temple, Suite 210, Salt Lake City, UT 84116Relationship to permit holder Self (PacifiCorp) Phone No. Same4. Source Bear River tributary to Great Salt Lake**B. OVERLAP REVIEW**1. Other water rights with the same place of use 13-957 (overlapping); 13-958 (overlapping)2. Other water rights with the same source and point of diversion 13-957; 13-958; 13-7688; 13-7701**C. DIVERSION AND DELIVERY SYSTEM****1. Point(s) of Diversion:**

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
	2		NW	NE	1	10S	40E	Caribou	Onsite observation; IDWR Aerial Photo

2. Place(s) of Use: Method of determination Onsite observation; IDWR Aerial Photo

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
10S	40E	21			X						X								0.24

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.



Scale: 1" = _____

- ☒ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (**required**) Aerial
☒ photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
	N/A				Gravity

*Code to correspond with no. on map and aerial photo

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Upper Bed Flow Totalizer Meter	Disc Nutation	Badger	T-450Recordall	64085-002	3"	Unknown
Lower Bed Flow Totalizer Meter	Mag. Drive	Hersey/Mueller	MRV 350	15089809	3"	01/15

2. Measurements:

Upper Bed Meter: Measured 4 times, 100 gal/1m-36.50 sec; 100 gal/1m-37.47 sec; 100 gal/1m-38.37sec;

100 gal/1m-38.63 sec

Lower Bed Meter: Measured 3 times, 100 gal/2m-11.00 sec; 100 gal/2m-10.53 sec; 100 gal/2m-10.50 sec

E. NARRATIVE/REMARKS/COMMENTS

The water right overlaps 2 water rights, 13-957 and 13-958, both of which have a POU SW 1/4, Sec 21, T10S, R40E. Both of the overlapped water rights are for power (hydropower) at the Grace Hydroelectric Plant. Both share the same POD as this permit, both are for 500 CFS continuously.

An 11-ft. dia. flowline (wood stave initially, transitioning to steel between the POD and POU) diverts water from the Grace Dam on the Bear River. Water is conveyed via gravity through the flowline approx. 4 miles (including this permit and water rights 13-957 and 13-958) to the Grace Hydro Plant.

For the Upper Ground Bed (NE 1/4 of Sec 21), a 6-inch steel welded pipe taps the flowline. A 6" X 4" steel reducer constricts flow to 4" which flows through a filter, housed in an above-ground 6' X 10' X 6' deep valve box, then goes underground in 4" wrapped galvanized pipe for ~ 10 feet to a 3" flow meter in a buried box. After the meter, water is conveyed under gravity pressure to four buried valve boxes which distribute water to two sets of two, 4-inch polyethylene lines which convey flow along the east and west sides of the ground bed. Each 4-inch line is buried in 5-ft deep trenches with end laterals feeding 12, 1 1/2" drip lines each. The Upper Ground Bed POU is 1.7 acres.

For Lower Ground Bed (SW 1/4 of Section 21), a 4-inch dia. welded steel pipe taps the penstock pipe at the end of the flowline. The 4-inch line feeds two pressure-reducing valves which reduce pipeline water pressure from 200-250 psi to ~50 psi. The PRV's are in an above-ground 6' X 10' X 6' deep wood box. Flow then passes through a filter and goes underground in a 4-inch wrapped galvanized pipe to a buried meter box, approx. 100 feet east. After passing through the 3" flow meter, the 4" line continues to three buried valve boxes at the south end of the Lower Ground Bed. The valve boxes distribute water to two sets of 3, 4-inch polyethylene lines which convey flow along the east and west sides of the ground bed. Each 4-inch line is buried in 5-ft deep trenches with end laterals feeding 12, 1 1/2" drip lines each. The Lower Ground Bed POU is 1.4 acres.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

Conditions of Approval met:

1. Industrial use for pipeline corrosion system.
2. Water use is regulated by Watermaster for District 11.
3. Use of water is non-consumptive (returns via sub-surface flow to Bear River)
4. Project construction commenced in 2015 and was completed in 2017.

F. FLOW CALCULATIONS

☐ Additional computation sheets attached

Measured Method:

Upper Ground Bed: Measured 4 times using flow totalizing meter and stopwatch: 1) 100 gal/1 36.5/60 min = 62.18 gpm; 2) 100 gal/1-37.47/60 min = 61.56 gpm; 3) 100 gal/1-38.37/60 min = 60.99 gpm; 4) 100 gal/1-38.63/60 = 60.83 gpm for an average of 61.39 gpm.

Lower Ground Bed: Measured 3 times using flow totalizing meter and stopwatch: 1) 100 gal/2-11.00/60 min = 45.80 gpm; 2) 100 gal/2-10.53/60 min = 45.57 gpm; 3) 100 gal/2-10.50/60 = 45.98 gpm for an average of 45.92 gpm.

Combined Total = 107.31 gpm = 0.24 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I,R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \text{N/A}$$
$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = \underline{\hspace{10cm}}$$
$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \underline{\hspace{2cm}}$$

2. Volume Calculations for Other Uses:

Non-consumptive use (cathodic protection): Water permit is continuous and year-round. (0.24 cfs) (365 days/year)

$$(86/400 \text{ sec/day}) (1 \text{ acre}/43,560 \text{ ft}^2) = 173.75 \text{ ac-ft/yr}$$

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Cathodic Protection	1/1	12/31	0.24	
		Totals:	0.24	

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☒ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other

I. AUTHENTICATION

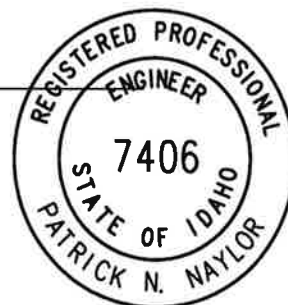
Field Examiner's Signature

Patrick M Mayo

Date March 13, 2020

Reviewer

Date _____



1 inch = 2,500 feet

POD

Turner Rd

Pipeline

34

Upper
Bed

Lower
Bed

2017 Aerial Photography



POU



Place of Use Boundary

0 1,250 2,500 5,000 7,500 10,000 Feet

Field Examination Map General Locations - Permit 13-7934

822 Grace Power Plant Rd
Grace, Idaho

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Rocky Mountain
ENVIRONMENTAL
ASSOCIATES, INC.

PacifiCorp
Beneficial Use Field Report
Project Manager: Patrick Naylor

Date: 12/18/2019

Project #: 18-0175

Drawn by: JP

1 inch = 100 feet



2017 Aerial Photography



POU



Place of Use Boundary



Main Laterals



Lower Ground Bed Field Examination Map - Permit 13-7934

PacifiCorp

822 Grace Power Plant Rd
Grace, Idaho

Date: 1/16/2020



Project #: 18-0175

Drawn by: JP



Rocky Mountain
ENVIRONMENTAL
ASSOCIATES, INC.

1 inch = 100 feet



2017 Aerial Photography



POU



Place of Use Boundary



Main Laterals



Upper Ground Bed Field Examination Map - Permit 13-7934

PacifiCorp

822 Grace Power Plant Rd
Grace, Idaho

Date: 1/16/2020

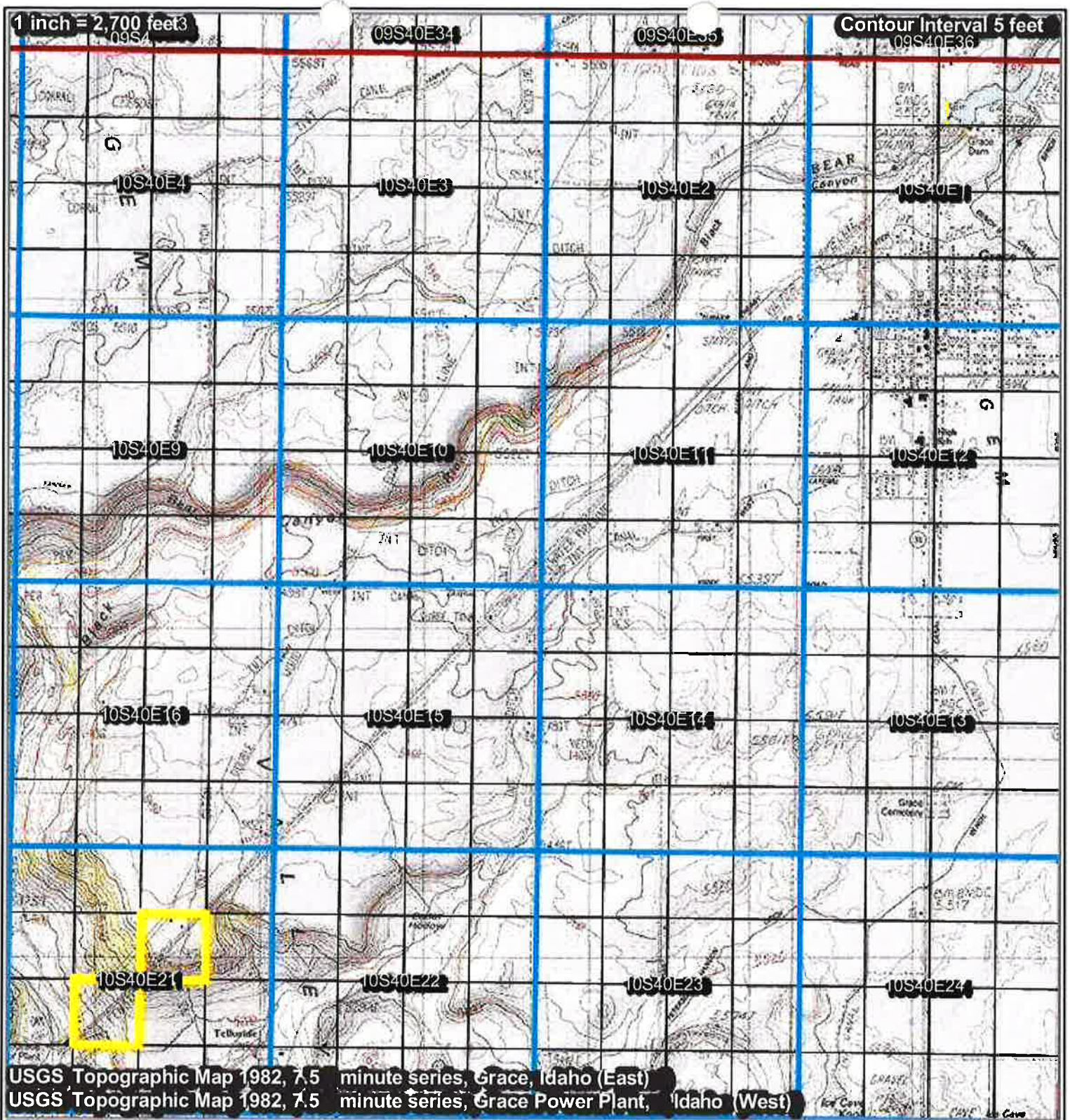


Project #: 18-0175

Drawn by: JP



Rocky Mountain
ENVIRONMENTAL
ASSOCIATES, INC.



- Place of Use Boundary
- Point of Diversion
- Twp & Rng
- Section
- QQ

0 1,250 2,500 5,000 7,500 10,000 Feet

USGS Grace, Idaho Quadrangle, and USGS Grace Power Plant Quadrangles, 1:24,000

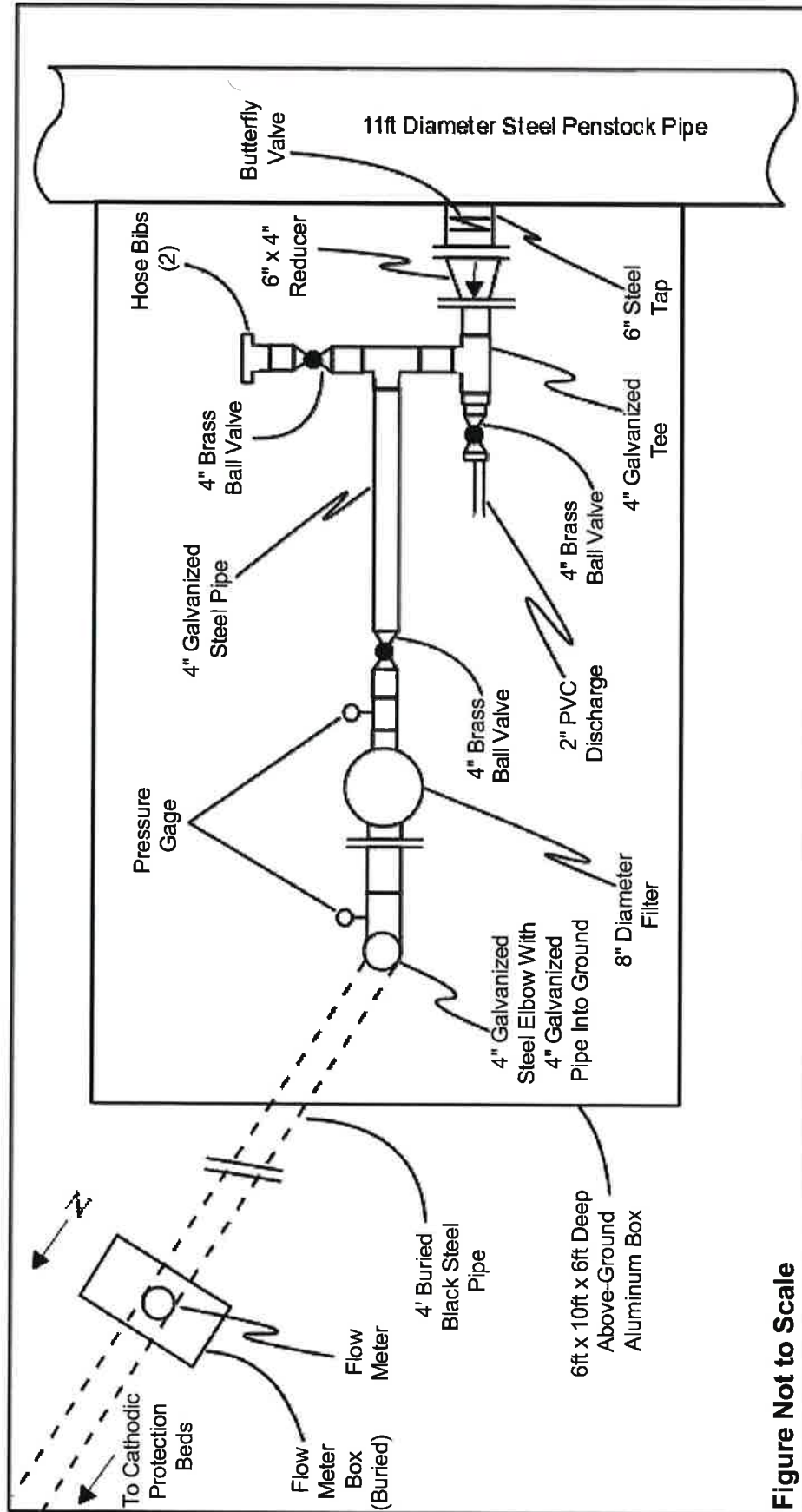
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Upper Cathodic Protection Beds Valve and Gage Configuration Schematic

822 Grace Power Plant Rd
Grace, Idaho



PacifiCorp
Beneficial Use Field Report

Date: 12/31/2019
Project #: 18-0175
Drawn by: JP

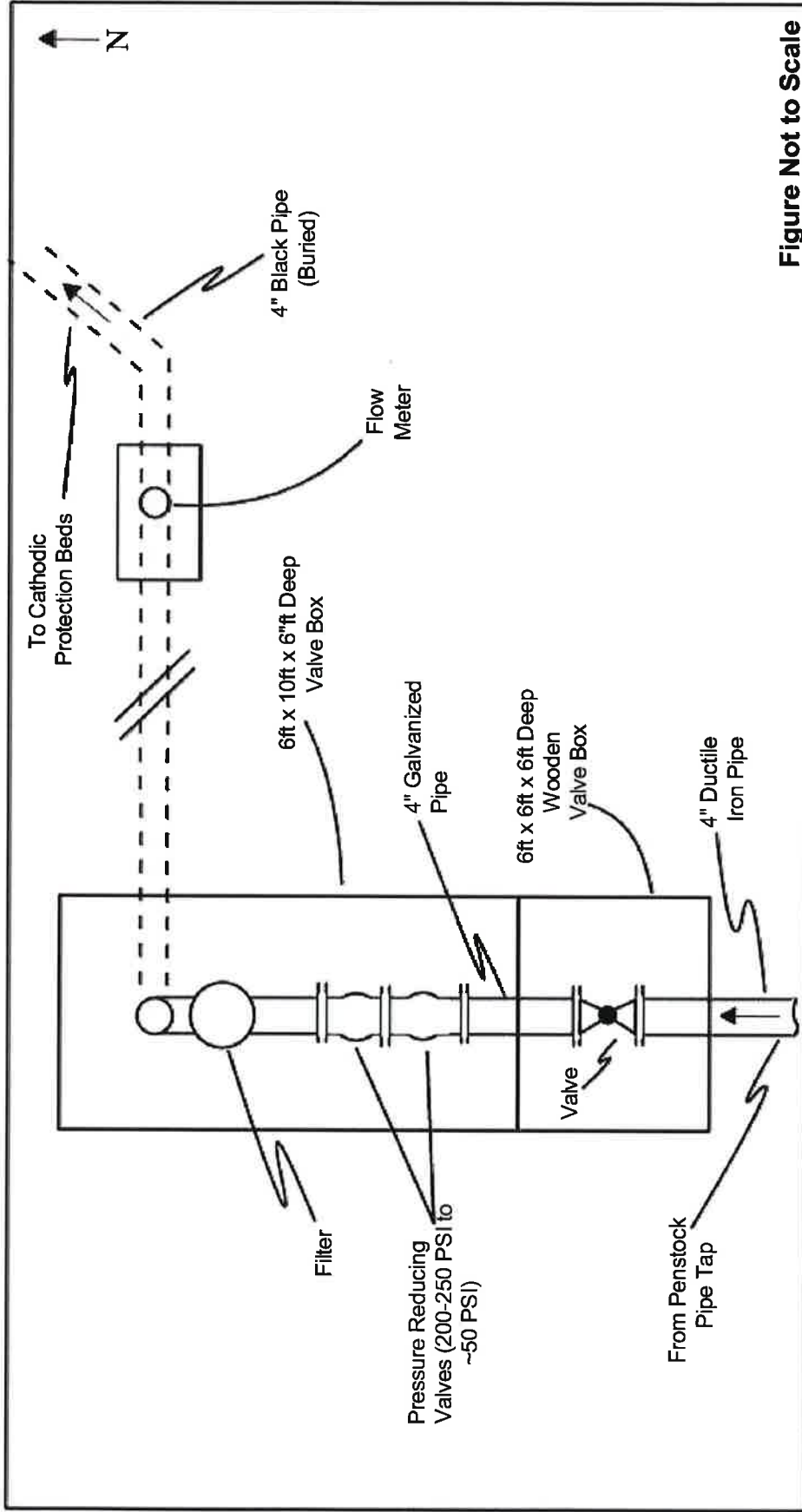


Figure Not to Scale

**Lower Cathodic Protection Beds
Valve and Gage Configuration Schematic**
822 Grace Power Plant Rd
Grace, Idaho

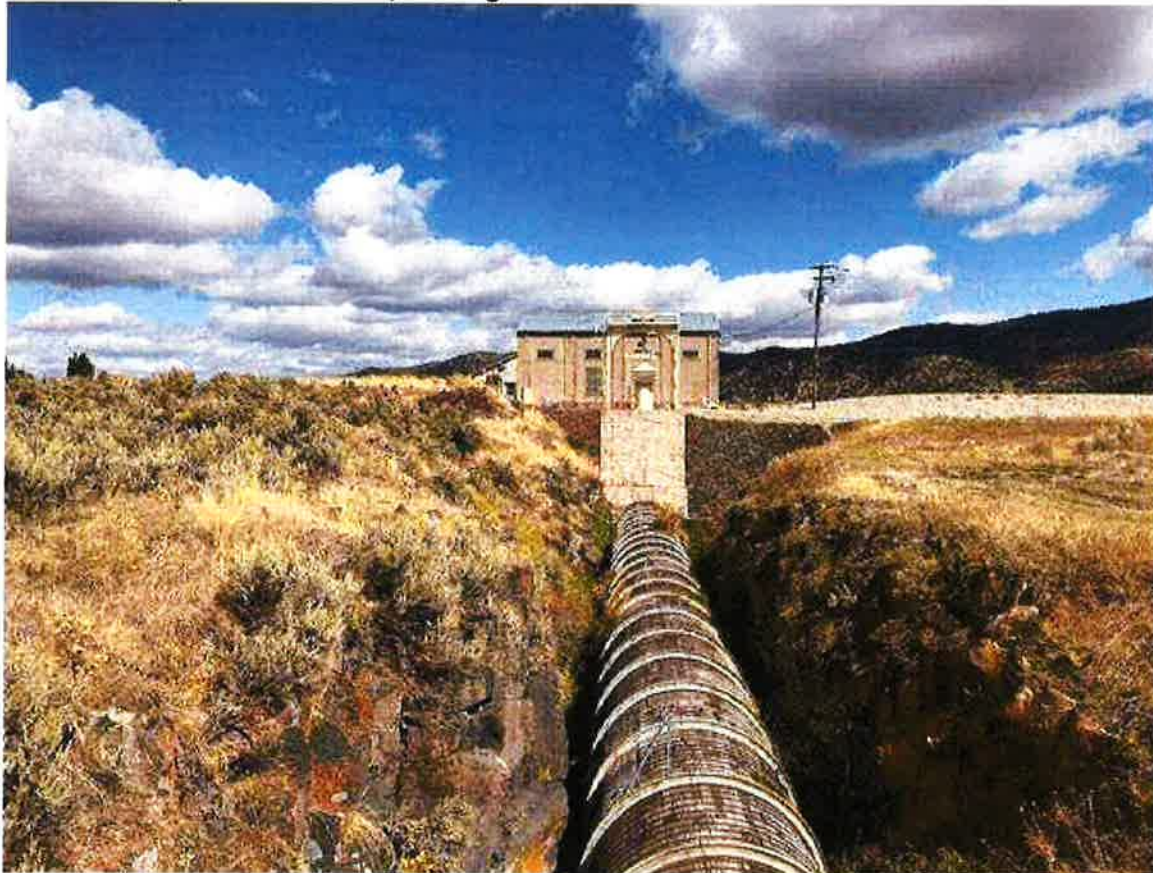
	PacifiCorp Beneficial Use Field Report		
	Date: 12/30/2019	Project #: 18-0175	Drawn by: JP

Photos of Diversion and Cathodic Systems (Upper and Lower Ground Beds)

Diversion Intake at Grace Dam (Submerged), Viewing East



Wood Stave Pipeline Below Dam, Viewing North



Upper Cathodic Protection Ground Bed with Surge Tower in Distance, Viewing Southwest



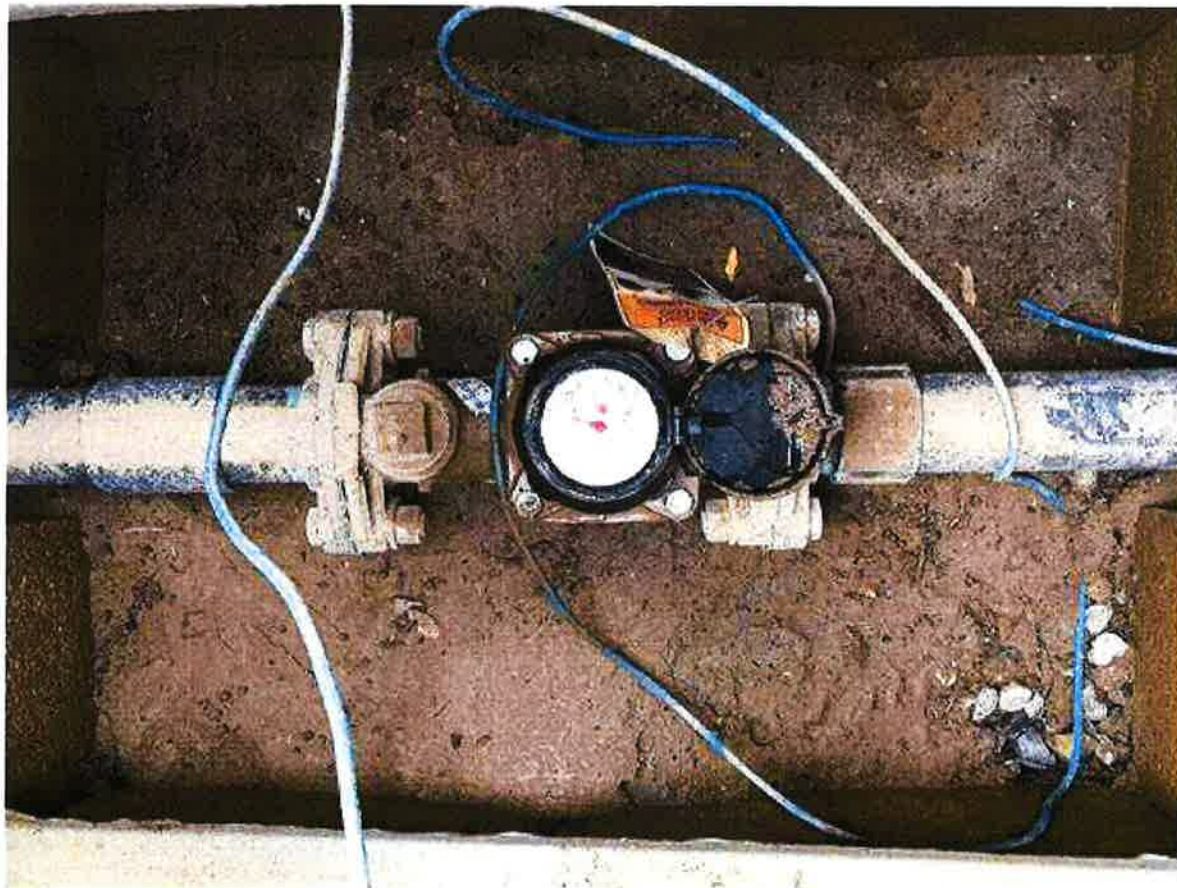
Steel Pipeline and Upper Ground Bed Above-Ground Tap/Valve Box and Buried Flow Meter Box



Inside Upper Ground Bed Tap/Valve Box on North Side of Pipeline



Inside Upper Ground Bed Flow Meter Box



Upper Ground Bed Valve Boxes



Upper Ground Bed Blowoff Box at Northeast Corner of Ground Bed



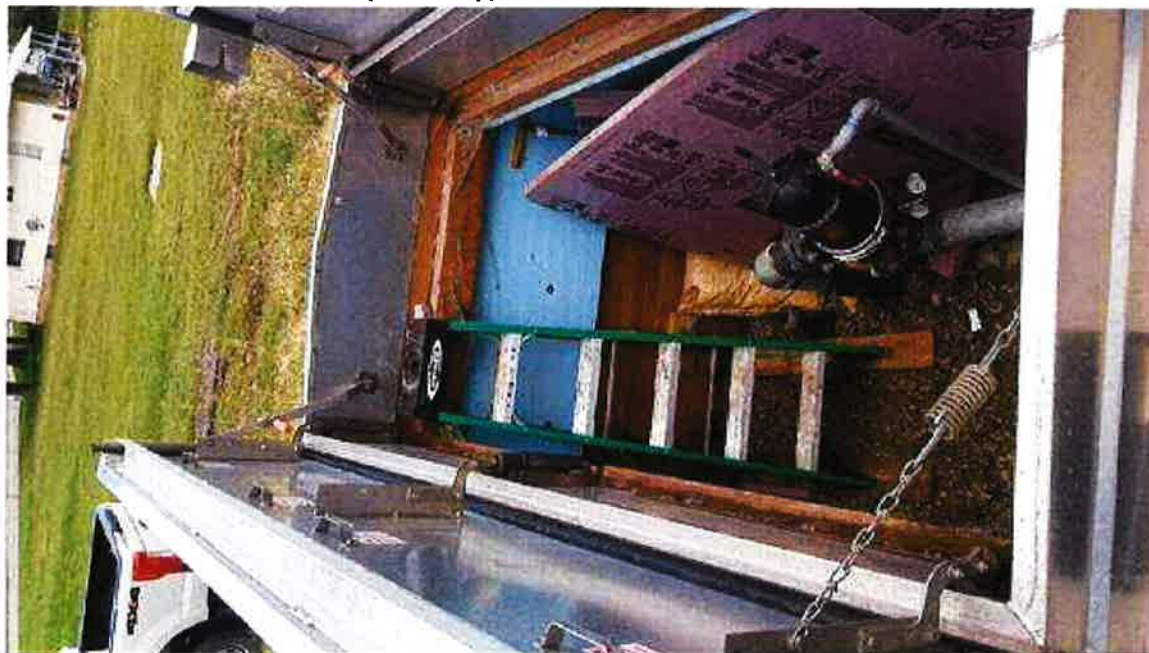
Upper Ground Bed Cathodic Protection Drip Line in Open Trench during Construction



Lower Cathodic Protection Ground Bed, Viewing North



Lower Ground Bed Penstock Pipeline Tap/Valve Box



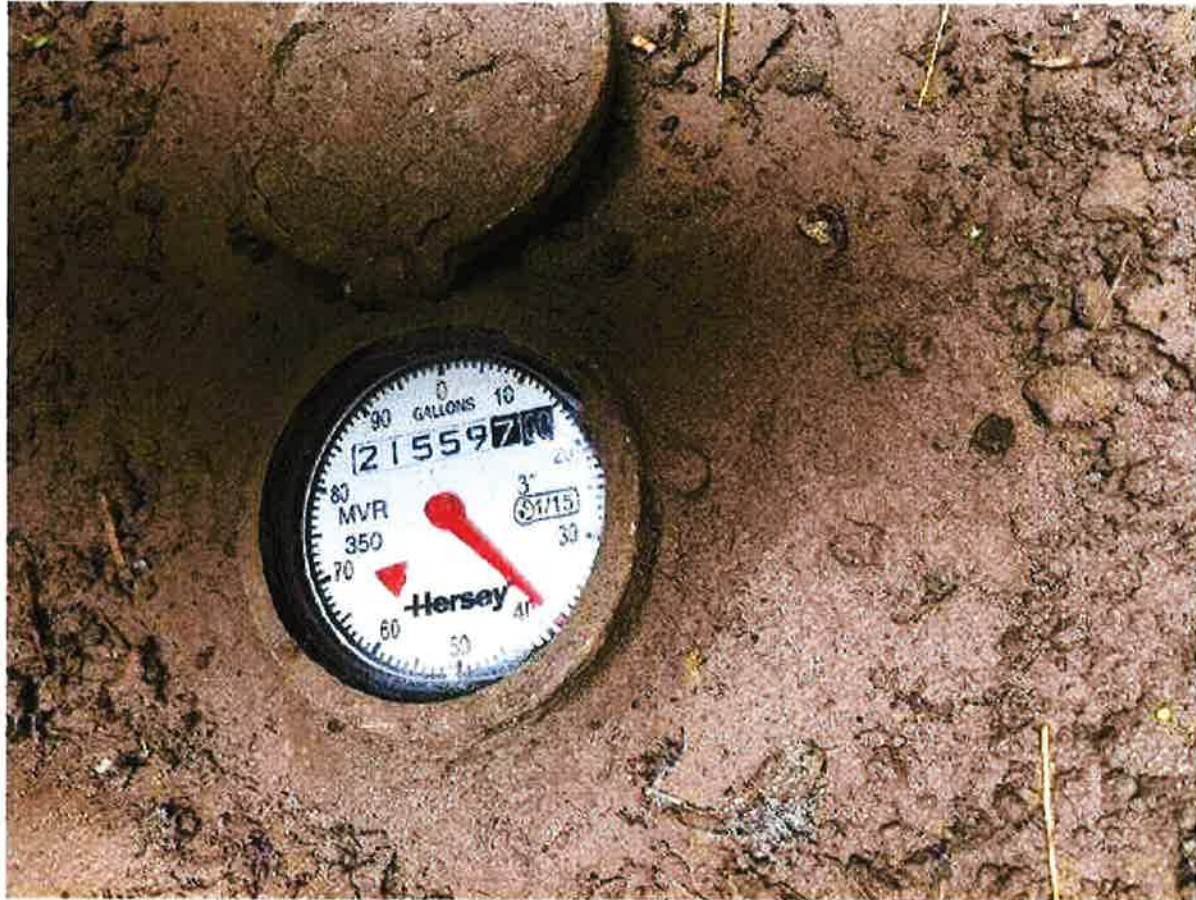
Inside Lower Ground Bed Penstock Tap/Valve Box



Lower Bround Bed Meter Box



Lower Ground Bed Totalizing Flow Meter



Lower Ground Bed Valve Boxes



Inside Lower Ground Bed Valve Box



Inside Lower Ground Bed Blowoff Box



Lower Ground Bed Cathodic Protection Drip Line in Open Trench during Construction

