

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 91-7295

Exam Date: 7/11/2016

1. Does this qualify for an in-office field exam (IDAPA 035.02.r)? ☒ Yes ☐ No
- Irrigation of 5 acres or less
 - Storage of up to 14.6 AF for stockwater purposes only
 - Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less**
 - Other < >

2. Current Owner: Name: Bernhard Hendewerk
Owner-of-Record Correct? ☒ Yes ☐ No
Address-of-Record Correct? ☒ Yes ☐ No
If No: <Address>

3. Beneficial Use Fees have been paid: ☒ Yes ☐ No Receipt No: N031992

4. SOURCE**TRIBUTARY**

St. Joe River

Coeur D' Alene Lake

Method of Determination: An aerial photo identifying the POD was submitted with application.

Change in Source: ☐ Yes ☒ No**B. OVERLAP REVIEW**

1. Other water rights with the same place of use: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments:

2. Other water rights with the same point of diversion: Overlap? ☐ Yes ☒ No

Water Right No.	Source	Purpose of Use	Basis

Comments:

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

Source	Govt. Lot	¼	¼	¼	Sec.	TWP	RGE		County
St. Joe River	4		NW	SW	14	46N	01W	B.M.	BENEWAH

Method of Determination: The legal description in the permit is validated by PLS data and aerial photography. The POD appears to be located inside L4 (NWSW), inside the river channel but outside of the taxlot boundary.

Change in POD? ☐ Yes ☒ NoAmendment Required? ☐ Yes ☒ No

2. **LOCATION OF PLACE(S) OF USE:** Use: Domestic

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
46N	01W	14											X						
													L4						

LOCATION OF PLACE(S) OF USE: Use: Irrigation

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
46N	01W	14											0.7						
													L4						

Method of Determination: The legal description in the permit is validated by PLS data and aerial photography. The property is also known as Lot 16, 1st Addition, St. Joe Riverside Tracts.

Change in POU? ☐ Yes ☒ No Amendment Required? ☐ Yes ☒ No

3.

☐ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

☒ 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
		1.0		Unknown shallow well pump	

*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

2. Measurements: In-office field exam. No measurements taken

E. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

	Irrigation	Domestic
Policy standard on proposed acre	0.03 cfs x 0.7 ac = 0.02 cfs	0.02 cfs
Permit allowed	0.03 cfs	0.02 cfs
License recommendation	0.02 cfs	0.02 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 0.7 \times 3.0 = 2.1 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.02 \times 231 \times 1.9835 = 9.2 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 2.1 \text{ af}$$

Volume Calculations for Other Uses: Domestic internal use = 0.6 af
License recommendation – 2.7 af total.

G. PURPOSE OF USEIrrigation ☒ Yes ☐ No # Stock _____ Domestic # of Homes 1

Other: < >

Change in Purpose of Use? ☐ Yes ☒ No

Method of Determination: Information in the water right file is consistent with aerial photography of the property.

If Yes: From Use _____ To Use _____ Amount _____ CFS _____ AFA _____

H. NARRATIVE/REMARKS/COMMENTS

Permit 91-7295 authorized a diversion from the St Joe River of 0.05 cfs for domestic and irrigation purposes. Based on the small permitted diversion rate, this permit qualifies for an in-office field exam.

The legal description of the POU was used to locate the property. Available Benewah County taxlot information shows the owner of the property as Bernhard H Hendewerk. A map identifying the POUs was submitted with the application and the shape outlined on that map matches the entire taxlot boundary. The taxlot is only 0.7 acre so the irrigation POU can be no more than 0.7 acre, and less than the permit authorized.

I created the POU shapes based primarily on aerial photography. In addition to IDWR's NAIP imagery, I also referred to Google Earth and LandSat imagery. I found that most of the property appears irrigated in late summer 2011 NAIP imagery and in late summer 2012 LandSat imagery.

The imagery shows a varying number of RVs were parked on the property during the development period. I recommend a single domestic use based on the one RV that is routinely on the property. The permit holder confirmed that he sets up his personal camp trailer at the beginning of the season and takes it down and away at the end of the season. However, I am recommending a year-round SOU.

Depending on the month and year, friends and relatives join him towing and parking their own RVs. Even multiple RVs at using approximately 30 gpd (see attached design information) would use much less volume of water than the standard domestic stick-built house. I am recommending a minimum volume for domestic, internal use.

The POD shape is based on the permit's POD shape. In a brief phone conversation on 7/11/2016, the permit holder stated the POD is sited west of the dock, on the river bank, that the system includes a small pressure tank and that the lift to the POU was 7-10 feet.

I confirmed that the POD is approximately 10 miles upstream from the established MSF point for the St. Joe River.

Have conditions of permit approval been met? ☒ Yes ☐ No

I. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
Domestic	01/01-12/31	0.02 cfs	0.6 af
Irrigation	04/01-10/31	0.02 cfs	2.1 af
	<u>Totals</u>	0.04 cfs	2.7 af

2. Recommended Amendments

☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Michele Edl Date July 11, 2016

Reviewer _____ Date _____

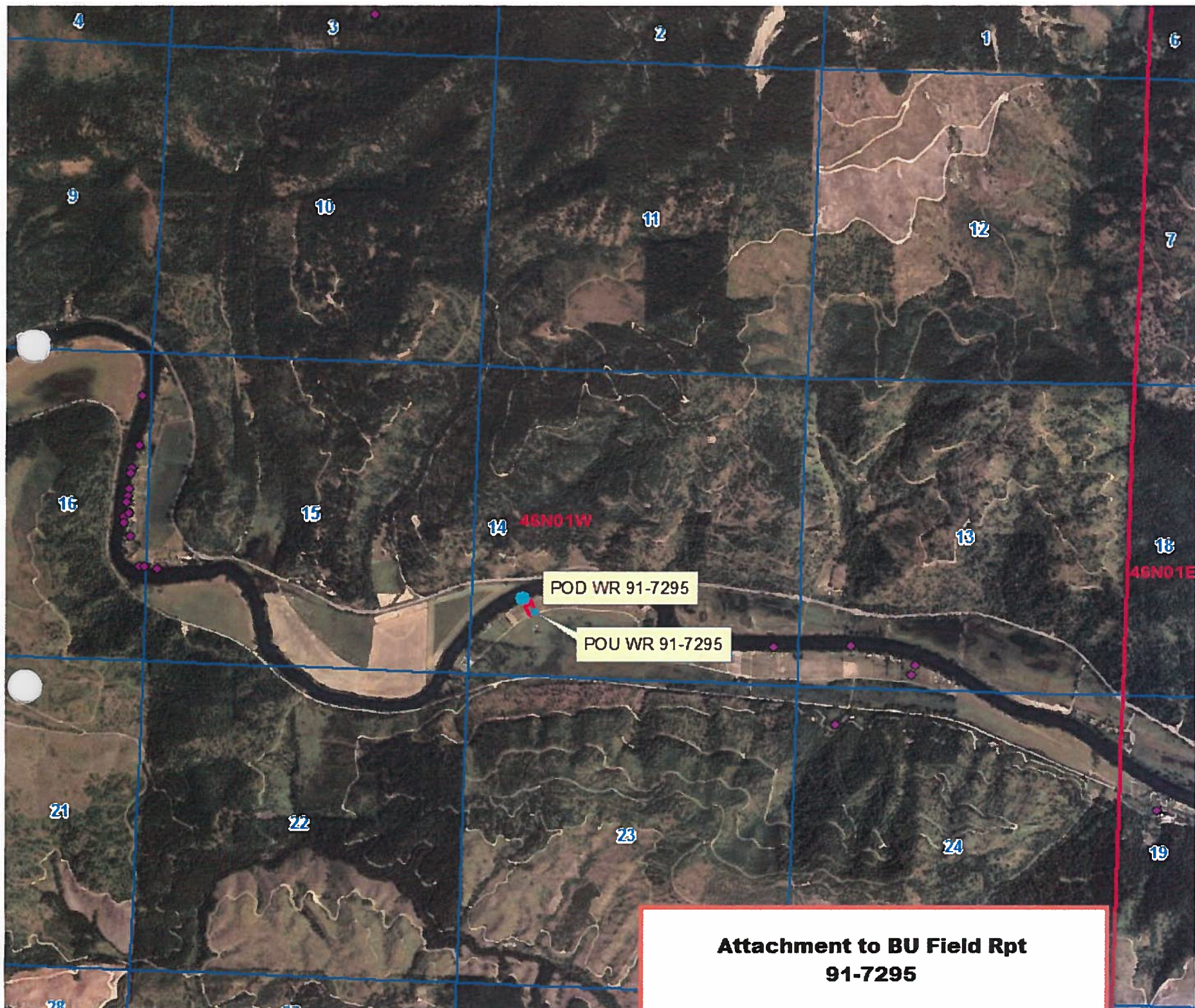
Workflow

Exam Date Entered ☒
 POU/POD shapes ☒
 Combined Rights Entry ☐
 Wild & Scenic Entry ☐
 Draft License and Maps ☒

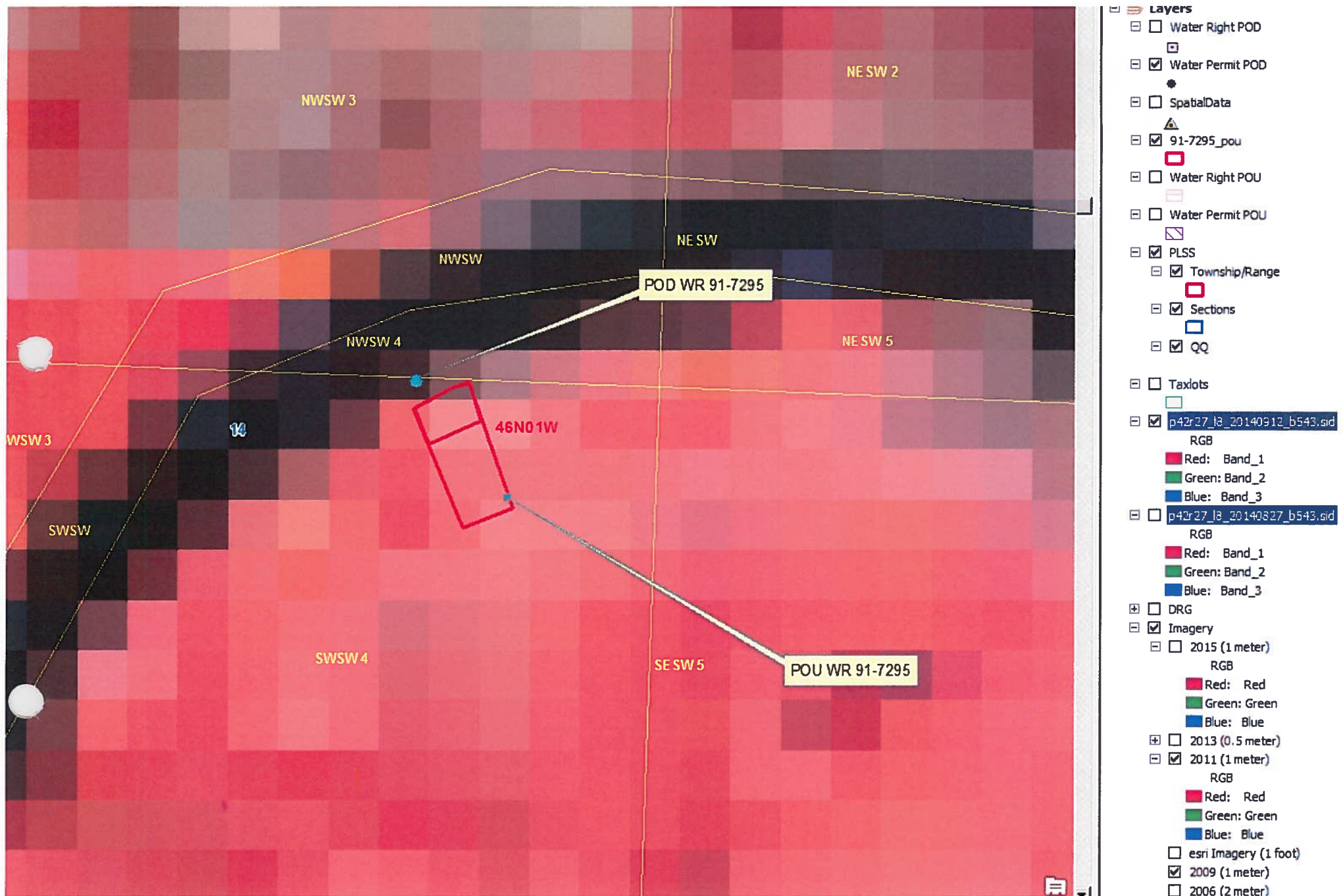
Supporting Documents

Historical Imagery ☒ Well Log ☐
 Photographs ☐ Diagrams ☐
 LandSat ☐ Theoretical ☒

Other: Table from USDA Forest Service RV water use



**Attachment to BU Field Rpt
91-7295**



Attachment to BU Field Rpt 91-7295



7/11/2016
1998 2014

**Attachment to BU Field Rpt
91-7295**

Google earth

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 91-7295
 Reviewer: Michele Edl
 Date of Review: 7/11/2016

P/D No.:	Senerio 1	Senerio 2	Senerio 3
PUMP HORSEPOWER	1	1	1
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	10.0	10.0	10.0
DISCHARGE PRESSURE	35	45	55
RATE OF FLOW (cfs)	0.07	0.05	0.04 0.056
(gpm)	30.43	24.26	20.17 24.956

The above calculates the formula =
$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: % 70 efficiency
 No Friction

Examiners Notes:

Horsepower was given by permit holder to be 1 HP. The permit holder also gave the lift as 7-10 ft. Discharge pressure ranges from 35-55 psi to account for expected system in use.

Forest Service Handbook 7409.11, Section 44.11 - Exhibit 01, Average Daily Design Flow (excerpted in table 1). The table lists average daily design flows used when designing water supply systems for Forest Service recreation areas.

It's important that the design flow table match actual water-use rates so Forest Service water systems can be designed and constructed to provide the amount of water that is needed without spending extra money for water systems that are larger than necessary. Data were collected to find out whether standard water-use rates for recreation areas have changed as a result of recreation and plumbing fixture changes and whether the table should be updated.

Collecting Data

Managers at a wide range of Forest Service recreation areas with drinking water systems were asked whether they would volunteer to collect data for the study. Recreation areas that supply water with hand pumps were not included in the study because there's no convenient way to meter water use.

Initially, managers at 67 recreation areas volunteered to collect information during the 2005 use season. Due to a variety of difficulties, such as winter storms, contractor delays, and miscommunication, information was collected monthly or more frequently at only 41 recreation areas.

Table 1—Forest Service Handbook 7409.11, Section 44.11 - Exhibit 01 (recreation information only).

<u>Average Daily Design Flow</u>		
<u>Consumer Use</u>	<u>Consumption in gallons per day</u>	<u>Unit</u>
<u>Camping Facility</u>		
Without flush toilets	5	PAOT*
With flush toilets	20-30	PAOT*
With flush toilets and showers	25-50	PAOT*
Trailer with —		
Water connection	25	PAOT*
Water and sewer connection	50	PAOT*
<u>Day use</u>		
Without flush toilets	1	Person
With flush toilets	5	Person
With toilets and showers	20	Person
<u>Travel Trailer Dump Station</u>	20-30	Trailer
<u>Miscellaneous</u>		
Organization camp	35-75	Person
*PAOT—Persons At One Time.		
The average daily demand should be computed as a summation of the products of individual system users and their respective per capita daily consumption.		

Attachment to BU Field Rpt 91-7295