

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17620
Exam Date: 08/18/2020

1. Current Owner:
JOHN HERN PO BOX 1060 COEUR D ALENE ID 83816
2. Accompanied by: John Hern
Phone No: 208-659-1181
Address: Same as above
Relationship to permit Holder: Permit holder

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-8232	GROUNDWATER	COMMERCIAL	LICENSE

Comments: 95-8232 is a groundwater source licensed right with a priority date of 1982 that overlaps this rights POU. Review of backfile documents show 95-8232's commercial use was identified as being south of the rail road tracks, which is not part of the applicant's property. 95-8232's POU was assigned a 160 acre tract shape, but as the water system is separate and commercial use not associated with the applicant's property, this right is not a concern for overlap with 95-17620.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis

Comments: _____

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼ NE¼, Sec. 33, Twp 51N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS. POD located at -116° 50.131, 47° 43.724.

PLACE OF USE: COMMERCIAL, DOMESTIC, and FIRE PROTECTION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
51N	04W	33	X	X															

Method of Determination: Field exam and Arcmap aerial imagery.

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

X

Indicate weir size/pipe as applicable.

Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X

Aerial Photo Attached (required for irrigation of 10+ acres).

X

Photo of Diversion and System Attached

X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
OLD WELL – NO DATA	FRANKLIN	5		GRUNDFOS	

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
NONE						

2. Measurements: Unable to perform flow measurement due to piping from well going directly into pressure tank with inadequate pipe requirements to perform a measurement.

E. FLOW CALCULATIONSX

Additional Computation Sheets Attached

Measured Method:

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} =$$

2. Volume Calculations for Other Uses:

- Domestic Annual Volume = 37 units x 2 people per unit x 20 gpd x 260 days (26ea two week/10 day pay periods) per year = 384,800 gal per year / 325,850 gal per af = **1.2 af**, considering department rounding standards.
- Commercial Annual Volume = 2,500 gpd commercial use x 365 days per year = 912,500 gal per year / 325,850 gal per af = **2.8 af**, considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 8/18/2020 with the applicant, John Hern, showed a well being used for commercial, domestic, and fire protection purposes. The well was old and had no construction documents on file, but Mr. Hern asserted in his application for permit the well was drilled in approximately 1970. At the time of exam, a new pump had been installed since the application was submitted; the 5 HP Grundfos pump was of like make and size as that which was previously installed. I was unable to perform a flow measurement because water was diverted directly into two pressure tanks without an adequate pipe length to perform the measurement. A theoretic pumping equation derives a flow rate of 0.07 cfs, with the pump depth estimated to be 330 feet (obtained at pump replacement) and a 65 PSI operating pressure. Although the theoretic pump equation calculated a 0.07 cfs diversion rate, the applicant is limited by the permit approved diversion rate of **0.06 cfs**, which will be carried forward to licensing as the maximum diversion rate. The 0.01 cfs difference is not being recommended as cause for concern, as there will likely some performance loss related to the aging diversion system.

The domestic POU is the same as the commercial POU for licensing purposes. During the field exam, Mr. Hern provided a site tour and explained the domestic use was for restrooms associated with a main office building, the recycling plant, 5ea commerce units with built-in services, and a centralized full service restroom facility. The commerce units without built-in restroom facilities were required to walk to the centralized facility for daily use. The domestic annual volume recommended for licensing equals 37 units x 2 people per unit x 20 gpd x 260 days (26ea two week/10 day pay periods) per year = 384,800 gal per year / 325,850 gal per af = **1.2 af**, considering department rounding standards. Mr. Hern stated there were 4 full time employees at the recycling plant, and 3 employees at the main office. The employee water use is covered under the 37 commerce units, assuming a few vacancies in tenants for commercial units throughout each year. The domestic POU was traced out using Arcmap aerial imagery, and encompasses the commercial structures on the applicant's property to include recycling plant.

The commercial POU encompasses the 37 unit commerce park and recycling plant. During the field exam, foundry machinery was found inside the recycling plant, but was not connected to water services and did not appear to have been operated in some time. Mr. Hern provided some information regarding the history of the machinery that dated back to his father's time running the plant, but that was not in the development period for this permit and not eligible for credit toward water use volume annually. Mr. Hern further stated the commerce park saw a decent amount of turnover in the rental of each commercial unit, which makes deriving an annual volume challenging. Due to the nature of the commerce park, there were periods of time when units were vacant awaiting new business tenants depending on the year.

At the time of the exam, a granite cutting business had been the primary user of water in the park. Other business entities include Hern Iron Works, Northwest Heating & Cooling, Blastmaster Sandblasting, and Lake City Powder Coating. Most commercial use was small scale upstart business ventures that were one-to-two person operations, used the space for storage, and most didn't incorporate water in their respective business uses. As such, the commercial annual volume for licensing purposes was determined using the following equation: 2,500 gpd commercial use x 365 days per year = 912,500 gal per year / 325,850 gal per af = **2.8 af**, considering department rounding standards. It is assumed that using the part B domestic volume of 2,500 gallons per day will proved an average throughout the year, and provide coverage for maximum usage of the commercial park annually. The recycling plant was observed to use little to no water aside from the domestic use for restroom services covered under the domestic beneficial use of this right. The 365 day commercial season of use differs from the 260 day domestic use due to the uncertainty of respective commercial unit days of operation. This allows for different work schedules than the traditional business work schedule of Monday-Friday throughout the year.

The fire protection POU was traced out using Arcmap aerial imagery, and covers the entirety of the applicant's parcel. Fire protection is by frost free hydrants, of which there are 8 spread throughout the commerce park. Hydrants and hoses were

observed during the field exam. There is no annual volume associated with the fire protection beneficial use, and due to the fire protection direct flow component, there will be no maximum diversion volume assigned to this license.

Condition 046 was removed from the permit during licensing review. A text condition for Commercial use was updated to describe the 37 unit commerce park and recycling facility. A text condition for Domestic use was updated to better describe that domestic use was for bathroom facilities in designated areas of the commerce park. All other conditions on the permit will remain on the license. Overlap concerns: 95-8232 is a groundwater source licensed right with a priority date of 1982 that overlaps this rights POU. Review of backfile documents show 95-8232's commercial use was identified as being south of the rail road tracks, which is not part of the applicant's property. 95-8232's POU was assigned a 160 acre tract shape, but as the water system is separate and commercial use not associated with the applicant's property, this right is not a concern for overlap with 95-17620. There are no other overlap concerns for this right.

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

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
COMMERCIAL	01/01 to 12/31	0.06 CFS	2.8 AF
DOMESTIC	01/01 to 12/31	0.06 CFS	1.2 AF
FIRE PROTECTION	01/01 to 12/31	0.06 CFS	

Totals: 0.06 CFS

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 ☒ None

I. AUTHENTICATION Luke Bates - Water Resource Agent

Field Examiner's Name  Date 1/13/2021
 Reviewer  Date 1/13/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-17620

COMMERCIAL and DOMESTIC system diagram.

04W

51N



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.04 0.08 0.16 Miles



State of Idaho
Department of Water Resources
Attachment to Field Exam
95-17620

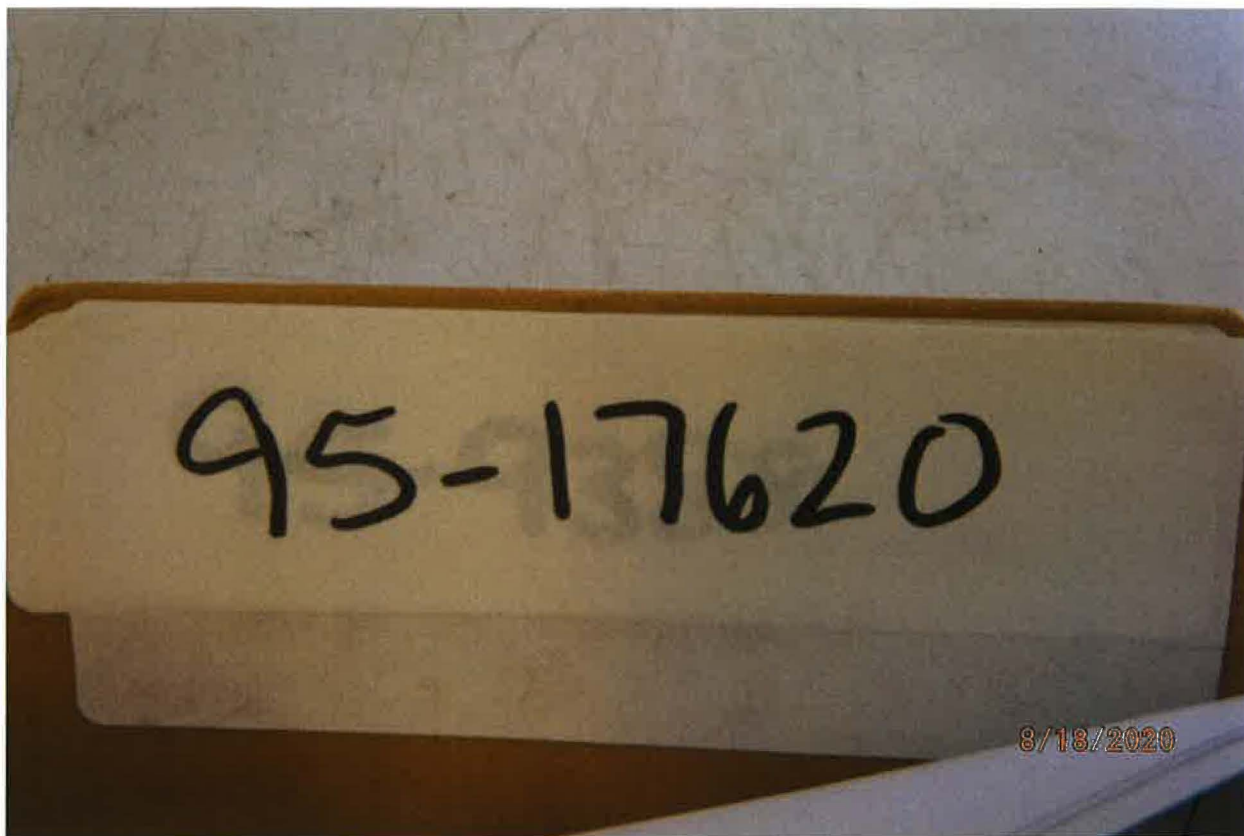
FIRE PROTECTION system diagram.



- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.05 0.1 0.2 Miles





FIELD EXAM DATE 8/18/2020



POD – OLD GROUNDWATER WELL



WELL DEQ IDENT TAG No. E0005372



2EA PRESSURE TANKS DIRECT LINE FROM WELL



FLOWMETER INSTALLED ON SYSTEM



65 PSI OPERATING PRESSURE

SERVICE INVOICE

825 E. 1st Avenue
Coeur d'Alene, ID 83814
208.694.2133 Phone
208.667.8775 Fax

Invoice No.: 296636
Invoice Date: 06/11/2020
Due Date: 07/11/2020
Custom No.: 6101557
Job No.: 30146

Bill To:
Hem Iron Works
PO Box 1060
Coeur d'Alene, ID 83816-1060

Job Location:
Jobsite
3610 W Hem Ave
Coeur d'Alene ID 83814

Hem Iron Works - T12544 - No Water

Item No.	Description	UOM	Qty	Rate	Amount
	Labor Job Order - RT - CDA - Joe Pollini	HR	1.25	\$95.00	\$118.75
	EQUIPMENT USED -- ON JOB ORDERS	MILE	10.00	\$0.80	\$8.00
**					
06/08/2020 Joe Pollini					
Checked system and found start winding is gone. Will return to pull.					

	GRNDFS PE 4" 25550-26 SHP	EA	1.00	\$1,194.00	\$1,194.00
	Labor Job Order - RT - CDA - Christian Heth	HR	1.25	\$95.00	\$93.75
	Labor Job Order - RT - CDA - Seth Hixson	HR	0.00	\$95.00	\$0.00
	Labor Job Order - RT - CDA - Joe Harper	HR	2.25	\$95.00	\$213.75
	EQUIP USE JOB ORDERS - PUMP HOIST UNIT # 35	HR	3.50	\$95.00	\$332.50
	EQUIPMENT USED -- ON JOB ORDERS	MILE	0.00	\$0.80	\$0.00
**					
06/09/2020 Seth Hixson, Christian Heth, & Joe Harper					
Replaced 5HP Well pump, 3 sticks of pipe, #8 wire and system tested good at 16amps.					
**					
	EQUIPMENT USED -- ON JOB ORDERS	MILE	66.00	\$0.80	\$52.80
	Franklin Electric Water Well 4" Motor 5.0 HP 230V 3-PH	EA	1.00	\$1,190.00	\$1,190.00
	FLOMATIC 80 CHK VLV BRZ 2"	EA	3.00	\$94.00	\$282.00
	GALV PIPE 2"	FT	63.00	\$4.05	\$255.15
	GALV NIPPLE SCH 40 1-1/2"x4"	EA	1.00	\$13.31	\$13.31
	GALV RED 2"x1-1/2"	EA	1.00	\$14.99	\$14.99
	ESP HEAT SHRINK 4-WIRE 8 AWG	EA	3.00	\$4.80	\$14.40
	RCW Jar 2 oz. w/ Chlorine Pellets	EA	1.00	\$2.00	\$2.00
	Scotch 700 Vinyl Electrical Tape Commercial Grade 3/4" x 66'	EA	1.00	\$2.75	\$2.75
	ELECTRICAL WRAP TAPE 2"x100FT	EA	3.00	\$6.75	\$20.25
	Cable Submersible Heavy Duty Flat Jacketed 6/3 w/grd	FT	200.00	\$1.75	\$350.00
	MISC SERVICE CONSUMABLES	EA	1.00	\$7.50	\$7.50
Subtotal:					\$3,321.50

5 HP GRUNDFOS PUMP WITH FRANKLIN MOTOR INSTALLED IN WELL



DOMESTIC POU – CENTRAL POINT RESTROOMS AND OFFICE BLDG RESTROOMS



FIRE PROTECTION POU – FROST FREE HYDRANTS POSITIONED THROUGHOUT COMMERCIAL PARK



COMMERCIAL POU



COMMERCIAL POU





COMMERCIAL POU





COMMERCIAL POU





COMMERCIAL POU





COMMERCIAL POU