

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 81-11894
Exam Date: 07/23/2015

1. Current Owner:
RIVER DANCE LODGE LLC PO BOX 579 COEUR D ALENE ID 83814
2. Accompanied by: Peter Grubb
Phone No: 208-755-6840 (Betsy Bowen)
Address: Same as above
Relationship to permit Holder: Peter Grubb – Representative, Betsy Bowen – 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
81-7006	DOMESTIC	UNNAMED STREAM	DECREEED
81-7060A	DOMESTIC	GROUNDWATER	DECREEED
81-10205	DOMESTIC	SPRINGS	DECREEED
81-7151	DOMESTIC	SPRINGS	LICENSE
81-7153	DOMESTIC	SPRINGS	LICENSE
81-7179	DOMESTIC	SPRING	LICENSE
81-11925	Fire Protection from Storage	BIG SMITH CREEK	LICENSE

Comments:

- 81-7006 – Decreed WR that uses unnamed stream water for domestic use including ½ acre associated with parcel No. RP33N06E329020, currently showing WR ownership by Willard N Irion. Parcel currently owned by River Dance Lodge LLC – change in ownership documents provided to Betsy Bowen to transfer the water right into current parcel owner's name. Condition X35 was added to this permit during licensing review to describe combined use for domestic purposes between 81-7006 & 81-11894.
- 81-7060A & 81-10205 – backfile research identifies each decreed WRs POU is not related to this right's POU; proof reports for each decreed right identify parcels RP33N06E329520A (81-7060A) & RP33N06E339770A (81-10205), with neither being a concern for overlap with 81-11894.
- 81-7151 & 81-7153 – backfile research identifies each licensed WR POU are related to this right's commercial use at the Syringa Café POU. Each WR uses a spring source that is separate from this WRs water system, but is licensed for domestic use at the cafe; condition X35 was added describing combined use limitations between 81-7151, 81-7153, & 81-11894 for commercial and domestic use at Syringa Café shall not exceed 2.0 af per year.
- 81-7179 – backfile research identifies licensed WR uses a spring source for domestic use that is not associated with the applicant's water system. 81-7179's POU was assigned a generic bulk shape when licensed. This right is not a concern for overlap for 81-11894.
- 81-11925 – backfile research identifies licensed WR using Big Smith Creek was assigned a generic bulk shape for fire protection from storage when licensed. Licensed WR may provide fire protection services to the applicant's property but is not part of the applicant's water system and is not a concern for overlap with 81-11894.

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

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

GROUND WATER L1 (SE¼ SE¼), Sec. 32, Twp 33N, Rge 06E, B.M. IDAHO County

Method of Determination: GPS. POD is a groundwater well D0033610 located at -115°43.536, 46°09.103.

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
33N	06E	32																2.0 L1	2.0
33N	06E	33											0.5 L1						0.5

Total Acres: 2.5

PLACE OF USE: COMMERCIAL

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
33N	06E	32																X L1	
33N	06E	33											X L1						

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
33N	06E	32																X L1	

Method of Determination: Beneficial use field examination and Arcmap aerial imagery.

3.

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

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

☒ Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0033610	GOULDS	1.5	BF20 (VFD)		

D. FLOW MEASUREMENTS

1.

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

2. Measurements: I was unable to perform flow measurements due to main service line from well routing direct to storage cisterns prior to distribution using transfer pumps. A Theoretic Pump Equation was developed to derive diversion rate equal to 20.4 GPM or 0.05 cfs considering department rounding standards. The 1.5 hp pump operating at 55 PSI is installed at approximately 105 ft.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation = 1.5 HP pump @ 105 ft, with 55 PSI operating pressure = 20.4 GPM or **0.05 cfs** considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.5 \text{ ac} \times 3.0 \text{ afa} = 7.5 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.05 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 24.4 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{7.5 \text{ af}}$$

2. Volume Calculations for Other Uses:

Domestic use: 1 home (does not include ½ ac irrigation) = **0.6 af**

Commercial use: listed below for 6 log cabins, 2 duplex units & 4 single units (8-unit resort) & restaurant use. There are full-service bathrooms in each cabin + 2 shower houses, a central bathroom, and laundry facilities for resort guests & staff.

- Resort season of use = 4/1 through 10/16 = 200 days.
 - 70 person lodging maximum capacity operating at 75% during development period = 70 x 0.75 = 53 guests daily.
 - Lodging annual volume = 53 guests x 200 days x 50 gal per day = 530,000 gal annually.
- Restaurant season of use = 4/1 through 10/16 = 200 days.
 - 45 customers per day average x 12 gal per customer x 200 days = 108,000 gal annually.
- Employees = 40 hrs per week standard work schedule
 - 10 seasonal full time staff members (rotating between restaurant & resort)
 - 200-day season of use / 7 day per week = 19 weeks
 - 5 workdays per week x 19 weeks = 95 days
 - 10 staff x 95 days x 20 gal per person = 19,000 gal annually.
 - 4 part time staff members (20 hrs per week on average)
 - Avg of 2.5 full workdays per week x 19 weeks = 47.5 days
 - 4 part-time staff x 47.5 days x 20 gal per person = 3,800 gal annually.

- Commercial total volume = 530,000 gal + 108,000 gal + 19,000 gal + 3,800 gal = 660,800 gal / 325,850 gal per acre-feet = **2.0 af** considering department rounding standards.

G. NARRATIVE/REMARKS/COMMENTS

Department staff performed an initial field examination on 7/23/2015, which showed groundwater well D0033610 being used for domestic, commercial, & irrigation uses. Sufficient data was not captured during the initial exam to accurately license this water right and a follow-up beneficial use examination was performed on 6/7/2022 with the applicant's representative, Peter Grubb, to fully catalog the development of groundwater associated with a single home, irrigation, and commercial use occurring at River Dance Lodge. During the follow-up exam it was validated that the recreation storage pond was not developed by the applicant, and I have stripped both the recreation storage beneficial use and diversion to storage component from the permit during licensing review.

At the POD, well D0033610 has a 1.5 hp Goulds submersible pump installed in the well. I was unable to perform flow measurements due to main service line from well routing direct to storage cisterns prior to distribution using transfer pumps. A Theoretic Pump Equation was developed to derive diversion rate equal to 20.4 GPM or 0.05 cfs considering department rounding standards. The 1.5 hp pump operating at 55 PSI is installed at approximately 105 ft. For licensing purposes, the domestic use diversion rate was authorized for 0.04 cfs which is recommended for licensing; the irrigation & commercial use(s) diversion rate(s) are limited to the pump performance found at time of exam which equals 0.05 cfs respectively. The maximum diversion rate for licensing purposes equals **0.05 cfs**. A Badger flowmeter is installed on the system, but it calculates flow from the cisterns transfer pump not from the well pump. Water is pumped into 2ea 1,500-gal storage cisterns before main service line distribution diverting works including a 3 hp & ¾ hp transfer pump(s) and pressure tanks for water system uses.

The domestic use POU consists of a single residence located at 125 Edgewater Rd, parcel No. RP33N06E329020. Arcmap aerial imagery was used to trace out the POU during licensing review. The permit was approved for in-home domestic use only which is recommended for licensing with an annual volume equal to **0.6 af**. Irrigation occurring at this dwelling is associated with a separate water system covered under decreed WR 81-7006. The ¾ hp transfer pump is used to service this dwelling from the well pump house location directly downgrade from the home.

The irrigation POU was walked with Mr. Grubb during the exam and sketched out on field maps. During licensing review Arcmap aerial imagery was used to accurately trace out the irrigation POU consisting of 2.5 acres of lawn and landscape area. Irrigation annual volume equals 2.5 ac x 3.0 afa = **7.5 af**. The applicant irrigates using both a pressurized system of micro emitters for landscaping throughout the POU, and hose & sprinklers from multiple frost-free hydrants to irrigate lawn space. Some portions of the applicant's property are not actively irrigated but do benefit from sub-irrigation from parcels higher in elevation resulting in field areas staying green through part of the summer months. These areas were not included in the irrigation POU acreage.

River Dance Lodge commercial use consists of 6 cabins supporting 2 duplex and 4 single unit full-service rentals, a full serve restaurant/lounge, an office building, and a dedicated bath/shower/laundry unit facility. There is a row of tent glamping units on-site, but there aren't dedicated water services to these tent locations resulting in exclusion from the POU shape. The POU was traced out using Arcmap aerial imagery during licensing review.

Evaluating commercial annual volume that occurred during the development period, 6/16/2003 – 5/17/2013, was difficult considering the passage of time between statement of completion submission and final field examination dates in 2022. Having said, the applicant has good record keeping practices and the commercial use volume computations listed above provide by line breakdowns of water usage in an average season of use. A flowmeter is installed, but to date the Department has not required the applicant track annual flow. It is recommended the applicant pursue annual volume readings for personal records moving forward in time.

The commercial season of use typically runs April to mid-October, but I am recommending a year-round season of use for licensing purposes; the lodge has the capability of remaining open year-round depending on weather and reservations. Commercial annual volume for both workers and guests' usage equals **2.0 af** considering department rounding standards as detailed above. The maximum diversion volume recommended for licensing purposes equals 0.6 af (domestic) + 7.5 af (irrigation) + 2.0 af (commercial) = **10.1 af**.

Conditions 26A, 046 and a recreation storage text condition have been removed from the permit during licensing review. Condition 004 was added; conditions 197 & 198 were added describing to notify the applicant that in future years the Department may require volume records associated with Wild & Scenic regulatory management. Condition X35 was added to describe overlap concerns between Rights 81-7006 & 81-11894 associated with domestic use for 1 home. A 2nd condition X35 was added describing combined uses for Rights 81-7151, 81-7153, & 81-11894 for commercial and domestic use at the Syringa Café shall not exceed 2.0 af annually. All other conditions on the permit shall be carried to licensing. Aside from overlap concerns quantified by two condition X35 added at time of licensing, additional overlap concerns have been detailed on PG 1 of this report and following evaluation do not result in a concern for enlargement or stacking of water rights for 81-11894. There are no further overlap concerns for this right. This right was not entered into the W&S database due to it being a groundwater source that is not tributary to the Middle Fork Clearwater River.

Have conditions of permit approval been met? X 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>
IRRIGATION	03/15 to 11/15	0.05 CFS	7.5 AF
COMMERCIAL	01/01 to 12/31	0.05 CFS	2.0 AF
DOMESTIC	01/01 to 12/31	0.04 CFS	0.6 AF

Totals: 0.05 CFS 10.1 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 ☒ None

I. AUTHENTICATION Luke Bates -

Field Examiner's Name LS 2B Date 8/11/2020
Reviewer Chris Beel Date 5/15/24

State of Idaho
Department of Water Resources
Attachment to Field Exam
81-11894

IRRIGATION system diagram.



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

0 0.035 0.07 0.14 Miles



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COMMERCIAL system diagram.



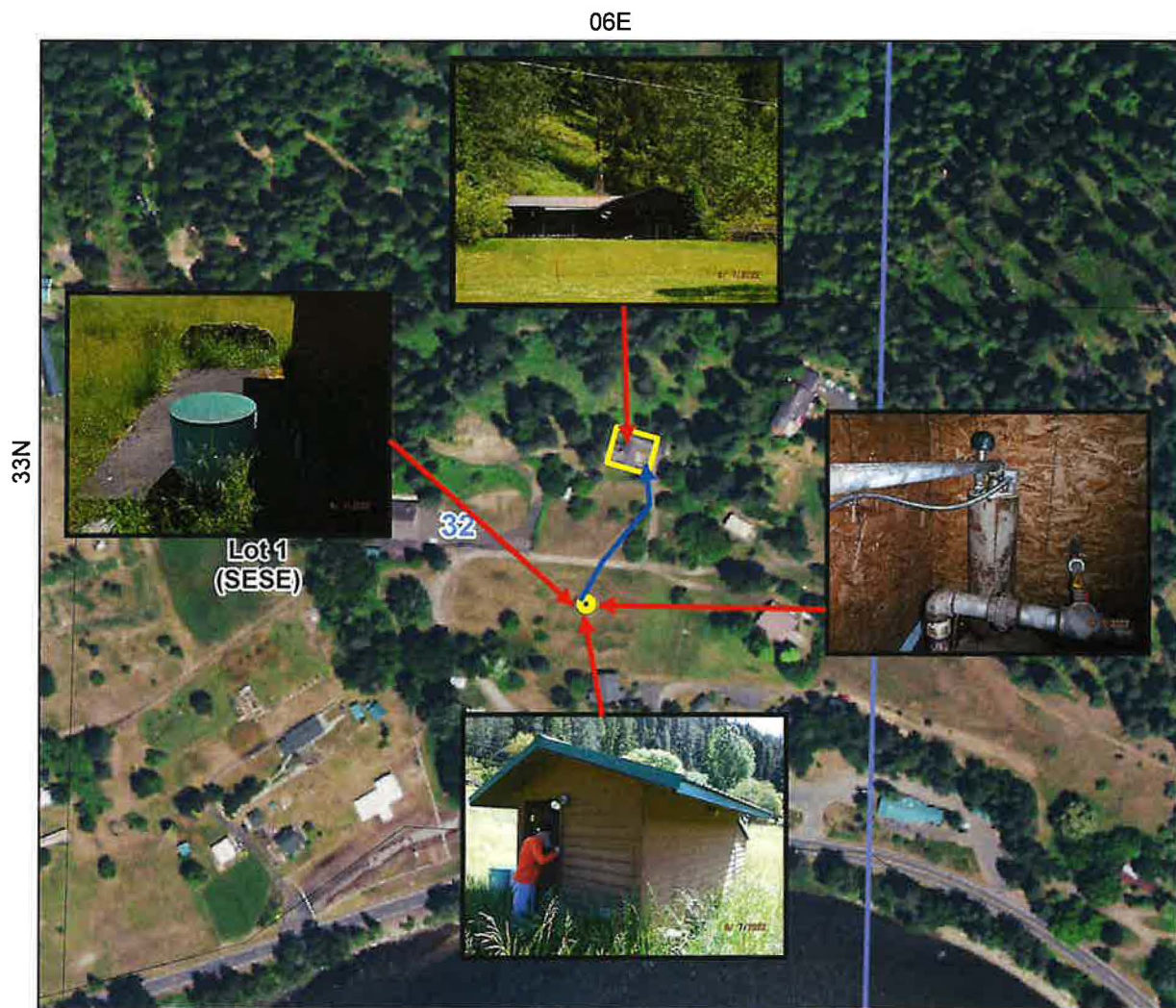
- 06E 06E
-  Place Of Use Boundary
 -  Townships
 -  PLS Sections
 -  Quarter Quarters
 -  Point of Diversion

0 0.035 0.07 0.14 Miles



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DOMESTIC system diagram.



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

0 0.035 0.07 0.14 Miles



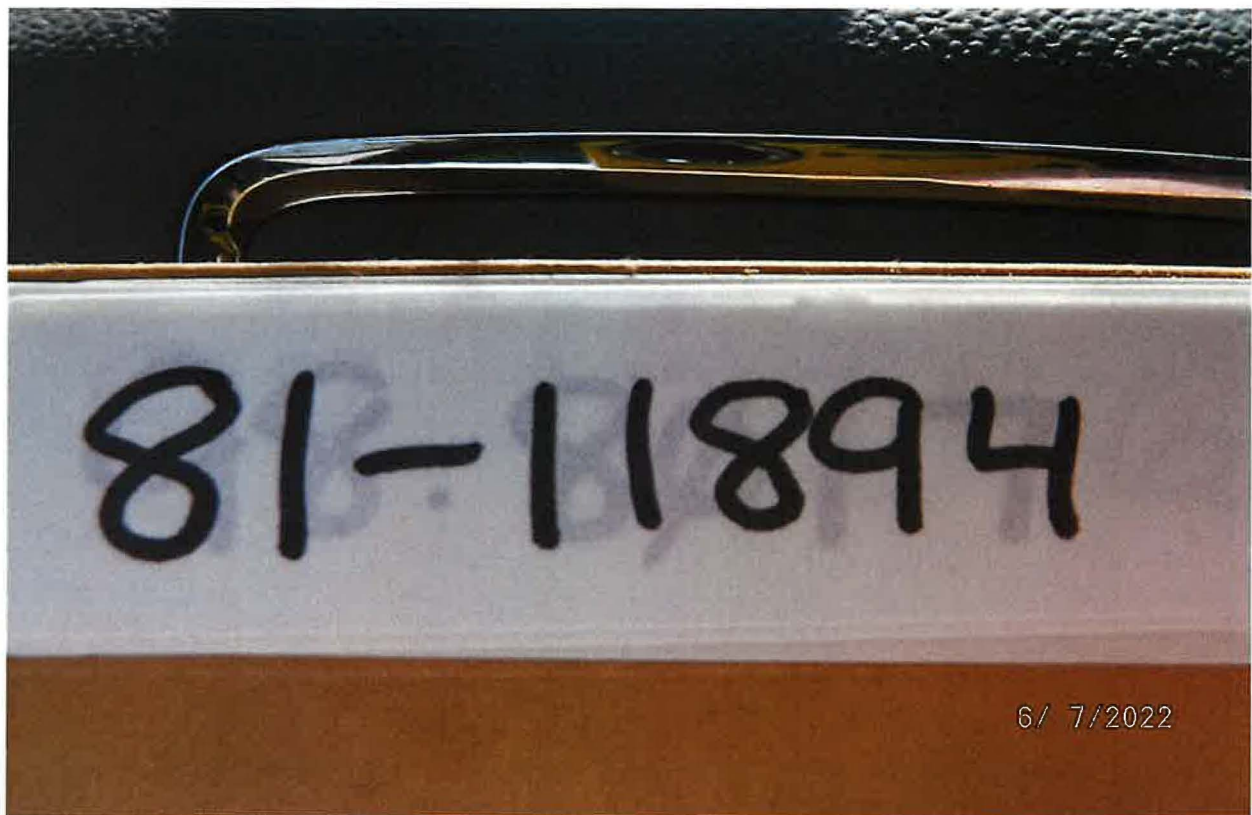
THEORETICAL PUMPING EQUATION(S) FOR WR# 81-11894

Theoretical Pumping Equation is required because system did not allow for a proper measurement. Pump is estimated to lift 105 ft, and running at 55 psi.

PUMP EQUATION

WATER RIGHT No. 81-11894

D0033610	HP	H in feet	Efficiency as a decimal	Pumping lift in feet	System pressure in PSI
Q = $HP * 8.8 * Eff / H$	1.5	232.2109	0.8	105	55
Q = 0.046 cfs 20.4 gpm					



INITIAL FIELD EXAM DATE 7/23/2015; FOLLOW-UP BENEFICIAL USE EXAM DATE 6/7/2022



POD – PUMP STATION WITH DOG HOUSE IN BACK HOUSING GROUNDWATER WELL

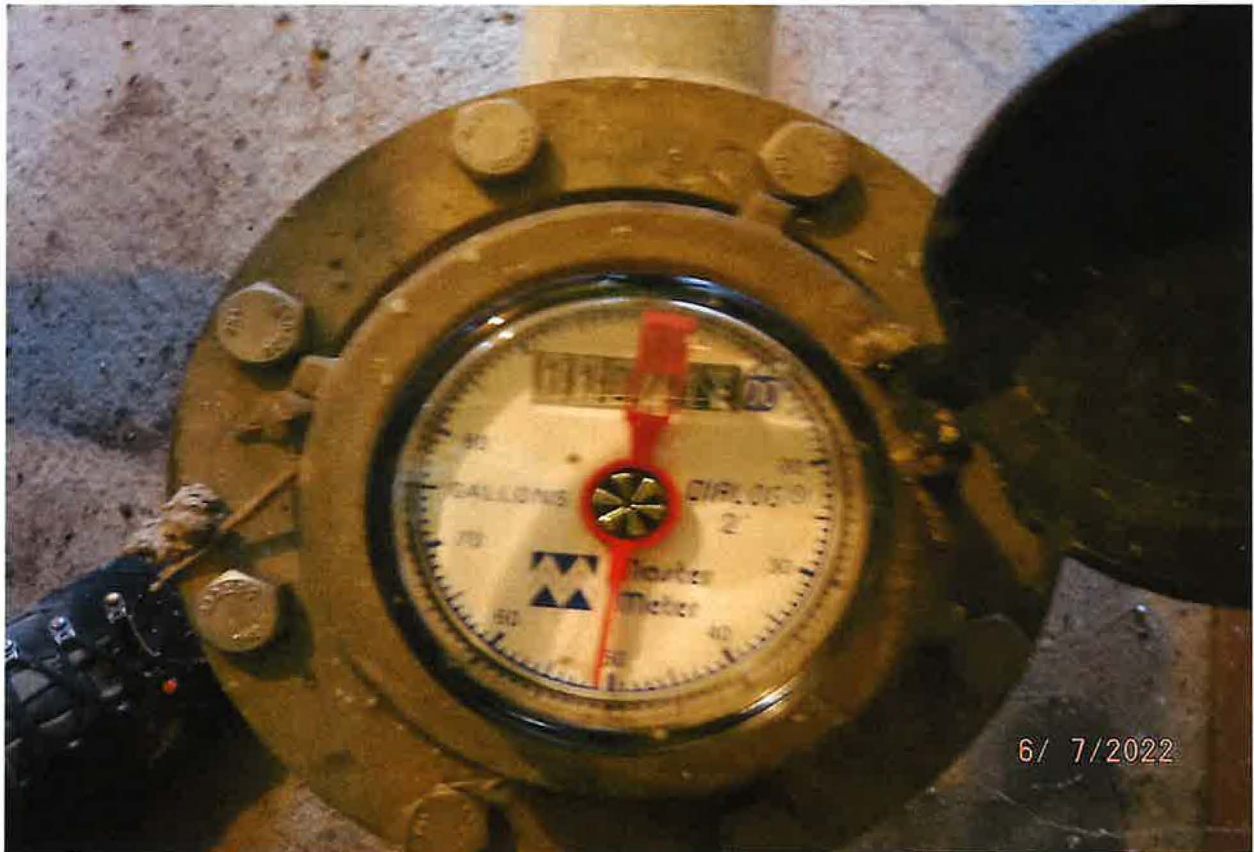


POD – GROUNDWATER WELL D0033610





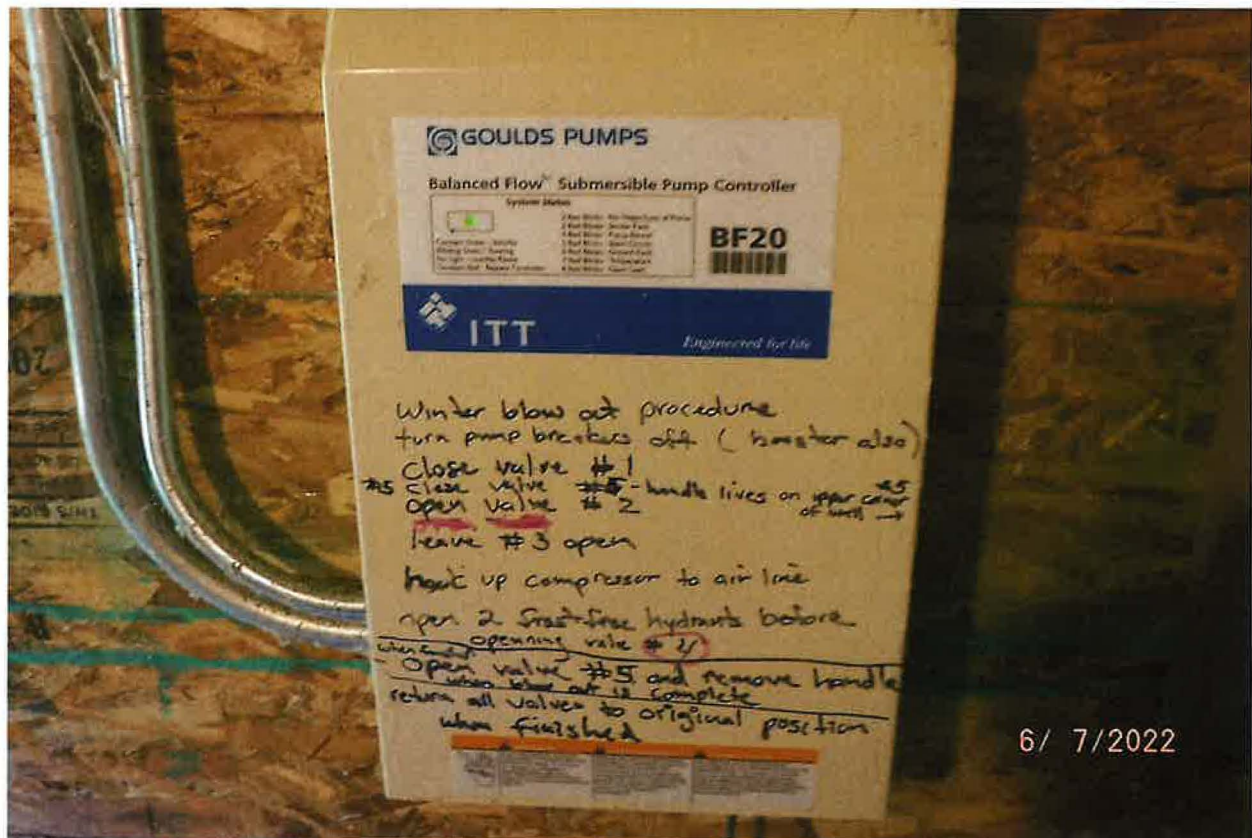
DIVERTING WORKS



MASTER METER FLOWMETER



TWO EACH TRANSFER PUMP CONTROL PANELS



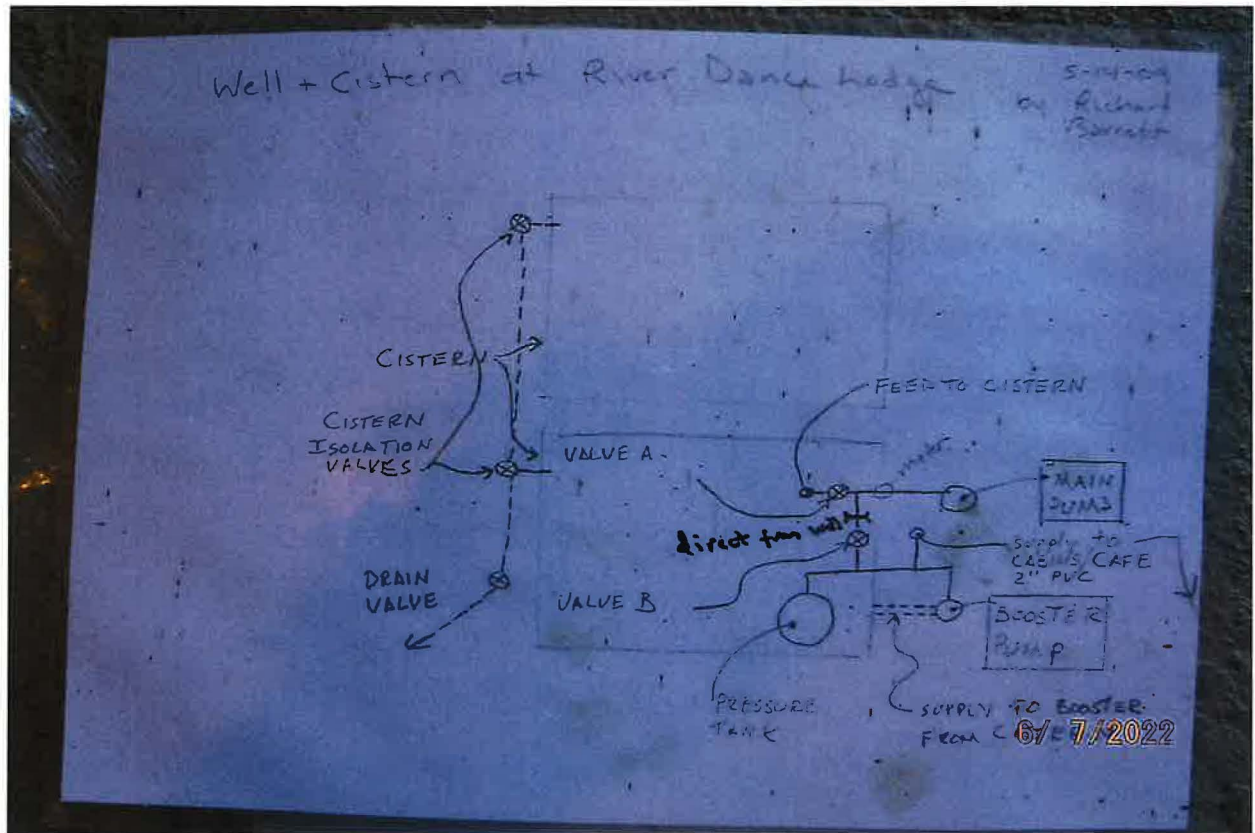
WELL PUMP MOTOR - GOULDS BF20 1.5 HP



VAULTED 1,500 GAL CISTERN – LID LOCATED WITHIN PUMP HOUSE



VAULTED 1,500 GAL CISTERN – LID LOCTED OUTSIDE PUMP HOUSE



WATER SYSTEM SCHEMATIC



55 PSI OPERATING PRESSURE



DOMESTIC POU – IN-HOME WATER USE FOR DWELLING LOCATED ON PARCEL RP33N06E329020



COMMERCIAL POU – 1 OUT OF 4 SINGLE UNIT RENTAL CABINS



COMMERCIAL POU – 1 OF 2 DUPLEX RENTAL CABINS





COMMERCIAL POU – RIVER DANCE LODGE CAFÉ





COMMERCIAL POU – OFFIC BUILDING (L/H), BATHROOMS (MIDDLE), & LAUNDARY ROOM (R/H)



IRRIGATION POU – HOSE AND SPRINKLERS FROM FROST-FREE HYDRANT



IRRIGATION POU AROUND RENTAL CABINS BY PRESSURIZED MICRO-EMITTER SPRINKLERS





IRRIGATION POU – GRASS, BUSHES, LANDSCAPING TREES AROUND RENTAL CABINS



IRRIGATION POU – FROST FREE HYDRANT TO HOSE & SPRINKLER



IRRIGATION POU





IRRIGATION POU

