

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17457
Exam Date: 05/11/2021

1. Current Owner:
CRYSTAL WATER CORP 6197 W MALLORY RD RATHDRUM ID 83858
2. Accompanied by: Kathline Wilson
Phone No: 208-916-6572
Address: Same as above
Relationship to permit Holder: Representative

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
95-8014	GROUNDWATER	DOMESTIC	DECREED

Comments: Decreed right 95-8014 uses the same groundwater source for domestic uses that overlap this water right's domestic and irrigation POU(s). Condition X35 was added during licensing review to provide combined use limitations between diversion rates that mitigate the overlap concerns between rights.

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

Water Right No.	Source	Purpose of Use	Basis
95-8014	GROUNDWATER	DOMESTIC	DECREED

Comments: Rights 95-8014 and 95-17457 share the same groundwater POD; condition F06 added during licensing review.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NW¼ SW¼, Sec. 29, Twp 52N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS; POD located at -116°52.105, 47°49.366 well 95-80-N-90

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	
52N	04W	29										1.0							1.0

Total Acres: 1.0

PLACE OF USE: STOCKWATER and 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	
52N	04W	29									X	X							

Method of Determination: Field exam, Arcmap aerial imagery, and backfile data for WR 95-8014

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
95-80-N-90	FRANKLIN	5			

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Unable to perform flow measurements due to inadequate pipe requirements. The main service pipe routes direct from the well to pressure tanks prior to distribution for uses. A theoretic pump equation derives a flow rate of 38.2 gpm or 0.09 cfs considering department rounding standards and is consistent with prior WR 95-8014's diversion rate from the same groundwater source.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: Theoretic Pump Equation – 5 HP pump installed at 310 ft with 45 PSI operating pressure derives a pump capacity of 38.2 gpm or 0.085 cfs = 0.09 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 1.0 \text{ ac} \times 3.0 \text{ afa} = 3.0 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 14.6 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{3.0 \text{ af}}$$

2. Volume Calculations for Other Uses:

- Stockwater annual volume = [(5 horses x 12 gpd) + (2 goats x 2 gpd)] x 365 days = 23,360 gal per year / 325,850 gal per af = **0.1 af** considering department rounding standards.
- Domestic annual volume = 2 homes x 0.6 af (in-home use only) = **1.2 af**.
- Maximum diversion volume = 3.0 af (irrigation) + 0.1 af (stockwater) + 1.2 af (domestic) = **4.3 af**.

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed with the applicant's representative, Kathline Wilson (Susan Kinkade's daughter), showed a well providing water for irrigation, stockwater, and domestic uses. At the POD well 95-80-N-90 has a 5 HP pump installed providing direct flow to pressure tank(s) prior to distribution. I was unable to perform flow measurements due to inadequate pipe requirements. A theoretic pump equation derives a flow rate of 38.2 gpm or 0.09 cfs considering department rounding standards and is consistent with prior WR 95-8014's diversion rate from the same groundwater source. The domestic diversion rate has been revised to **0.06 cfs** which is the department standard rate for 2 homes. The irrigation diversion rate has been revised to **0.03 cfs** due to a reduction in irrigation acres recommended for licensing from 3.0 down to 1.0. The stockwater diversion rate shall remain the same at **0.02 cfs**. Combined use diversion rate is limited to **0.09 cfs** which is the pump capacity for the system, as well as the permit approved max diversion rate.

During the field exam, both the domestic & irrigation POU for this permit as well as the domestic POU for prior right 95-8014 were evaluated to determine the extent of development for the 5 parcels associated with the water system. WR 95-8014 covered 4 of the six homes as recommended during the CSRBA, but 2 additional homes did not meet the requirements to be recommended thus necessitating WR 95-17457. The two homes applied for domestic use were observed and locations sketched out on field maps. During licensing review Arcmap aerial imagery was used to designate the domestic POU consisting of one mobile home located on parcel 52N04W295620 and one home located on parcel 52N04W295470. The annual volume for domestic use equals 2 homes x 0.6 af (in-home use only) = **1.2 af** that is recommended for licensing.

The stockwater use & POU was discussed with the applicant's representative and verified as 2 horses & 2 goats pastured at parcel 52N04W295620, and 3 horses pastured at parcel 52N04W295050. Arcmap aerial imagery was used during licensing review to trace out the pasture area where combined stockwater use occurs. The stockwater annual volume equals = [(5 horses x 12 gpd) + (2 goats x 2 gpd)] x 365 days = 23,360 gal per year / 325,850 gal per af = **0.1 af** considering department rounding standards.

The irrigation beneficial use was permit approved for 2.0 acres in the NE¼SW¼ & 1.0 acres in the NW¼SW¼ of Section 29. Following the field exam in which irrigation acreage for the 5 acres was observed and traced out on field maps, Arcmap aerial imagery was used to accurately trace out each parcel's irrigation as listed in the table below. It appears the acreage was applied for was transposed between quarter-quarter, as I identified approximately 2.0 acres in the NW¼SW¼ and 1.0 acres in the NE¼SW¼. Review of prior right 95-8014 as shown on the table below provides up to ½ an acre of irrigation for 4 of the 5 parcels.

CRYSTAL WATER CORP – WATER RIGHT BENEFICIAL USE BREAKDOWN

PARCEL #	WR 95-8014		WR 95-17457		
	Domestic (# homes)	½ irrigation under domestic use (ac)	Domestic (# homes)	Irrigation (ac)	Stockwater
52N04W295750	1	0.5	0	0	No
52N04W295620	1	0.5	1	0.5	Yes
52N04W295470	0	0	1	0.5	No
52N04W295050	1	0.5	0	0	Yes
52N04W295000	1	0.5	0	0	No
Annual Volume (af)	4 homes x 1.2 af = 4.8 af		2 homes x 0.6 af = 1.2 af	1.0 ac x 3.0 afa = 3.0 af	0.1 af
Maximum Diversion Volume (af)	4.8 af		4.3 af		

As a result, there is duplicity in irrigation occurring between water rights. Parcel 52N04W295620 is the only parcel irrigating greater than ½ an acre resulting from 2 service connections with homes on one parcel. I recommend licensing this right for 1.0 acres of irrigation, 0.5 ac for the parcel not covered by 95-8014 & 0.5 ac associated with the 2nd home on parcel 52N04W295620. The remaining parcels do not provide evidence of greater than ½ an acre irrigation occurring under domestic use already covered by 95-8014. The irrigation annual volume equals 1.0 ac x 3.0 afa = **3.0 af**. The maximum diversion volume recommended for licensing this right equals 3.0 af (irrigation) + 0.1 af (stockwater) + 1.2 af (domestic) = **4.3 af**.

Conditions 046, 26A, & X02 were removed from the permit during licensing review. Condition F06 was added to describe the shared well use between 95-8014 & 95-17457. All other conditions on the permit shall be carried forward to the license. Overlap concerns: decreed right 95-8014 overlaps this water right's domestic and irrigation POU(s). Condition X35 was revised during licensing review describing the combined use limitations of diversion rates that mitigate the overlap concerns between rights. There are no additional overlap concerns for this right.

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	0.03 CFS	3.0 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF
DOMESTIC	01/01 to 12/31	0.06 CFS	1.2 AF
<u>Totals:</u>		0.09 CFS	4.3 AF

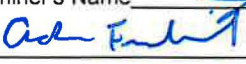
2. Recommended Amendments

 Change P.D. as reflected above Add P.D. as reflected above X None

 Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION Luke Bates - Water Resource Agent

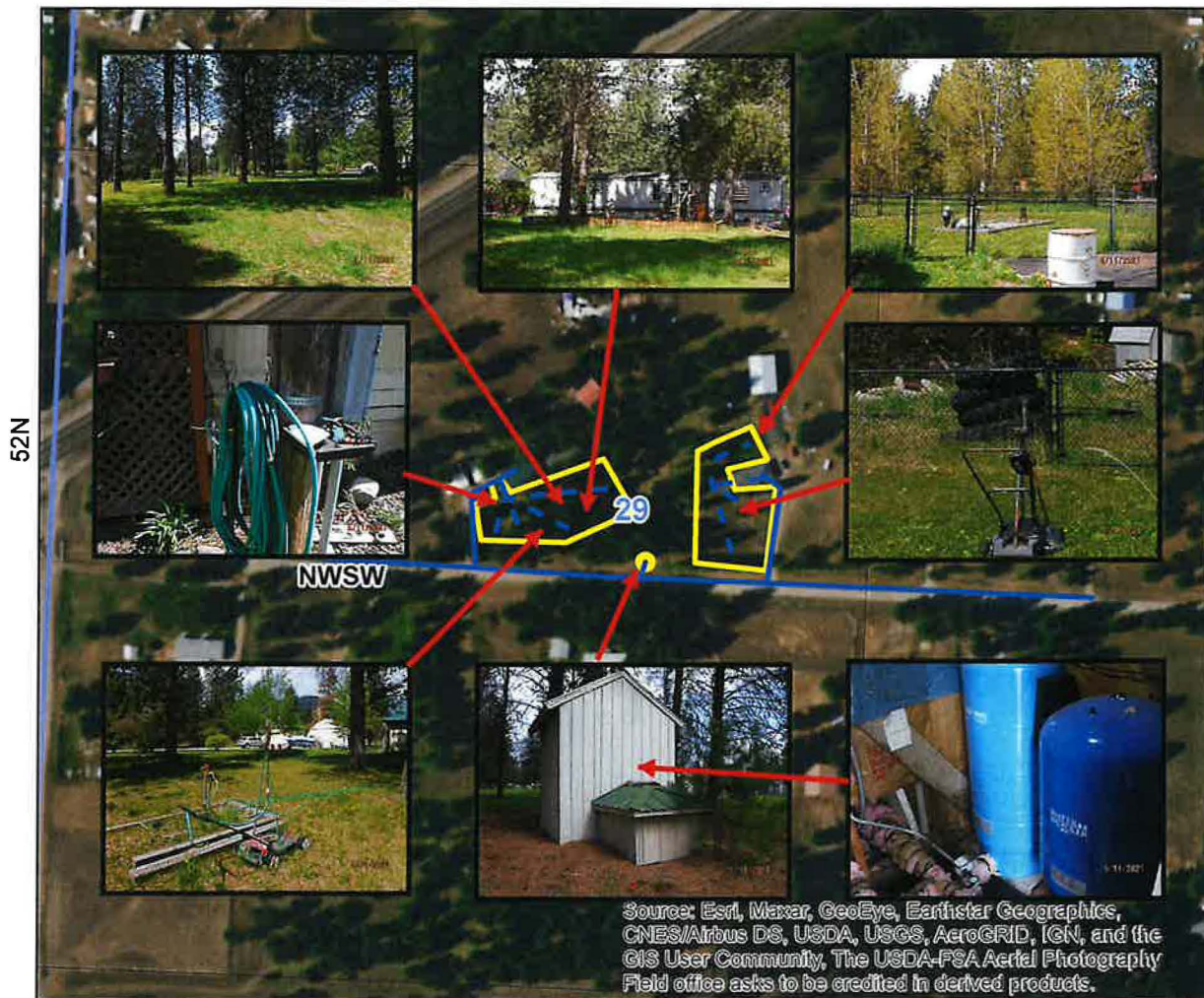
Field Examiner's Name  Date 11/4/2021

Reviewer  Date 11/16/2021

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-17457

IRRIGATION system diagram.

04W



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

0 0.035 0.07 0.14 Miles



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STOCKWATER system diagram.

04W



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

0 0.035 0.07 0.14 Miles



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DOMESTIC system diagram.



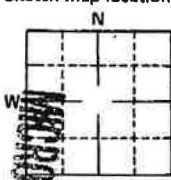
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.035 0.07 0.14 Miles



State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.



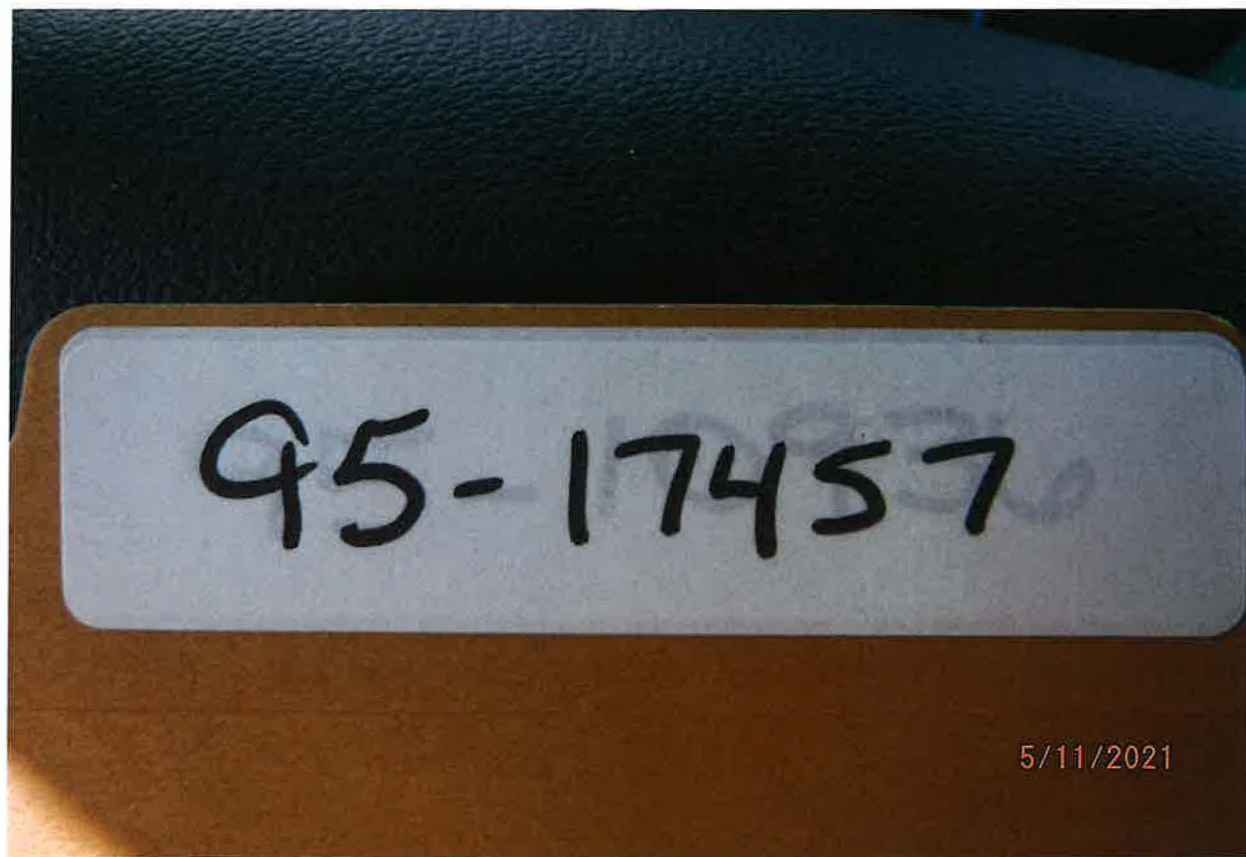
1. WELL OWNER Name <u>CHESTER DINE & DOROTHY LOUISE COZIAN</u> Address <u>Rt 3 Box 392F RATHORUM, IDAHO</u> Owner's Permit No. <u>95-80-N-90</u>	7. WATER LEVEL Static water level <u>340</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☒ Cap ☐ Plug Temperature <u>64</u> °F. Quality <u>Good</u>																																										
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____	8. WELL TEST DATA ☐ Pump ☐ Bailor ☒ Air ☐ Other _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td><u>106 GPM</u></td> <td><u>—</u></td> <td><u>1 hr.</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>106 GPM</u>	<u>—</u>	<u>1 hr.</u>																																				
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3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)	9. LITHOLOGIC LOG <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Hole Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th rowspan="2">Water Yes No</th> </tr> <tr> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>10</u></td> <td><u>0</u></td> <td><u>20</u></td> <td><u>Gravel</u></td> <td> </td> </tr> <tr> <td><u>8</u></td> <td><u>20</u></td> <td><u>71</u></td> <td><u>Gravel</u></td> <td> </td> </tr> <tr> <td> </td> <td><u>71</u></td> <td><u>83</u></td> <td><u>Small Boulders</u></td> <td> </td> </tr> <tr> <td> </td> <td><u>83</u></td> <td><u>262</u></td> <td><u>Gravel</u></td> <td> </td> </tr> <tr> <td> </td> <td><u>262</u></td> <td><u>279</u></td> <td><u>Gravel with Brown Clay</u></td> <td><u>X</u></td> </tr> <tr> <td> </td> <td><u>279</u></td> <td><u>288</u></td> <td><u>" " " "</u></td> <td><u>X</u></td> </tr> <tr> <td> </td> <td><u>288</u></td> <td><u>300</u></td> <td><u>Gravel</u></td> <td><u>X</u></td> </tr> </tbody> </table>	Hole Diam.	Depth		Material	Water Yes No	From	To	<u>10</u>	<u>0</u>	<u>20</u>	<u>Gravel</u>		<u>8</u>	<u>20</u>	<u>71</u>	<u>Gravel</u>			<u>71</u>	<u>83</u>	<u>Small Boulders</u>			<u>83</u>	<u>262</u>	<u>Gravel</u>			<u>262</u>	<u>279</u>	<u>Gravel with Brown Clay</u>	<u>X</u>		<u>279</u>	<u>288</u>	<u>" " " "</u>	<u>X</u>		<u>288</u>	<u>300</u>	<u>Gravel</u>	<u>X</u>
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4. METHOD DRILLED ☒ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary ☐ Cable ☐ Dug ☐ Other _____	RECEIVED JUN 16 1980 Department of Water Resources																																										
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>.150</u> inches</td> <td><u>8</u> inches</td> <td><u>0</u> feet</td> <td><u>279</u> feet</td> </tr> <tr> <td><u>.150</u> inches</td> <td><u>6</u> inches</td> <td><u>1</u> feet</td> <td><u>300</u> feet</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☒ Yes ☐ No How perforated? ☐ Factory ☒ Knife ☐ Torch Size of perforation <u>1/4</u> inches by <u>1 1/2</u> inches <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Number</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>45</u> perforations</td> <td><u>300</u> feet</td> <td><u>330</u> feet</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table> Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No ☐ Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>20</u> Material used in seal: ☐ Cement grout ☒ Puddling clay ☒ Well cuttings Sealing procedure used: ☐ Slurry pit ☒ Temp. surface casing ☒ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata Describe access port _____	Thickness	Diameter	From	To	<u>.150</u> inches	<u>8</u> inches	<u>0</u> feet	<u>279</u> feet	<u>.150</u> inches	<u>6</u> inches	<u>1</u> feet	<u>300</u> feet									Number	From	To	<u>45</u> perforations	<u>300</u> feet	<u>330</u> feet							RECEIVED										
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6. LOCATION OF WELL Sketch map location must agree with written location.  Subdivision Name _____ Lot No. _____ Block No. _____ Country <u>KOOTENAI</u> <u>N 1/4 SW 1/4 Sec. 29, T. 52, N 1/4, R. 4 E/W.</u>	10. Work started <u>4/17/80</u> finished <u>4/30/80</u>																																										
11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Donners Inc</u> Firm No. <u>245</u> Address <u>P.O. Box 123 E.D.A. Idaho</u> Date <u>4/30/80</u> Signed by (Firm Official) <u>Bob Thornton</u> and (Operator) <u>Robert F. Regitz</u>	RECEIVED																																										

USE ADDITIONAL SHEETS IF NECESSARY — FORWARD THE WHITE COPY TO THE DEPARTMENT

95-17457

CRYSTAL WATER CORP – WATER RIGHT BENEFICIAL USE BREAKDOWN

PARCEL #	WR 95-8014		WR 95-17457		
	Domestic (# homes)	½ irrigation under domestic use (ac)	Domestic (# homes)	Irrigation (ac)	Stockwater
52N04W295750	1	0.5	0	0	No
52N04W295620	1	0.5	1	0.5	Yes
52N04W295470	0	0	1	0.5	No
52N04W295050	1	0.5	0	0	Yes
52N04W295000	1	0.5	0	0	No
Annual Volume (af)	4 homes x 1.2 af = 4.8 af		2 homes x 0.6 af = 1.2 af	1.0 ac x 3.0 afa = 3.0 af	0.1 af
Maximum Diversion Volume (af)	4.8 af		4.3 af		



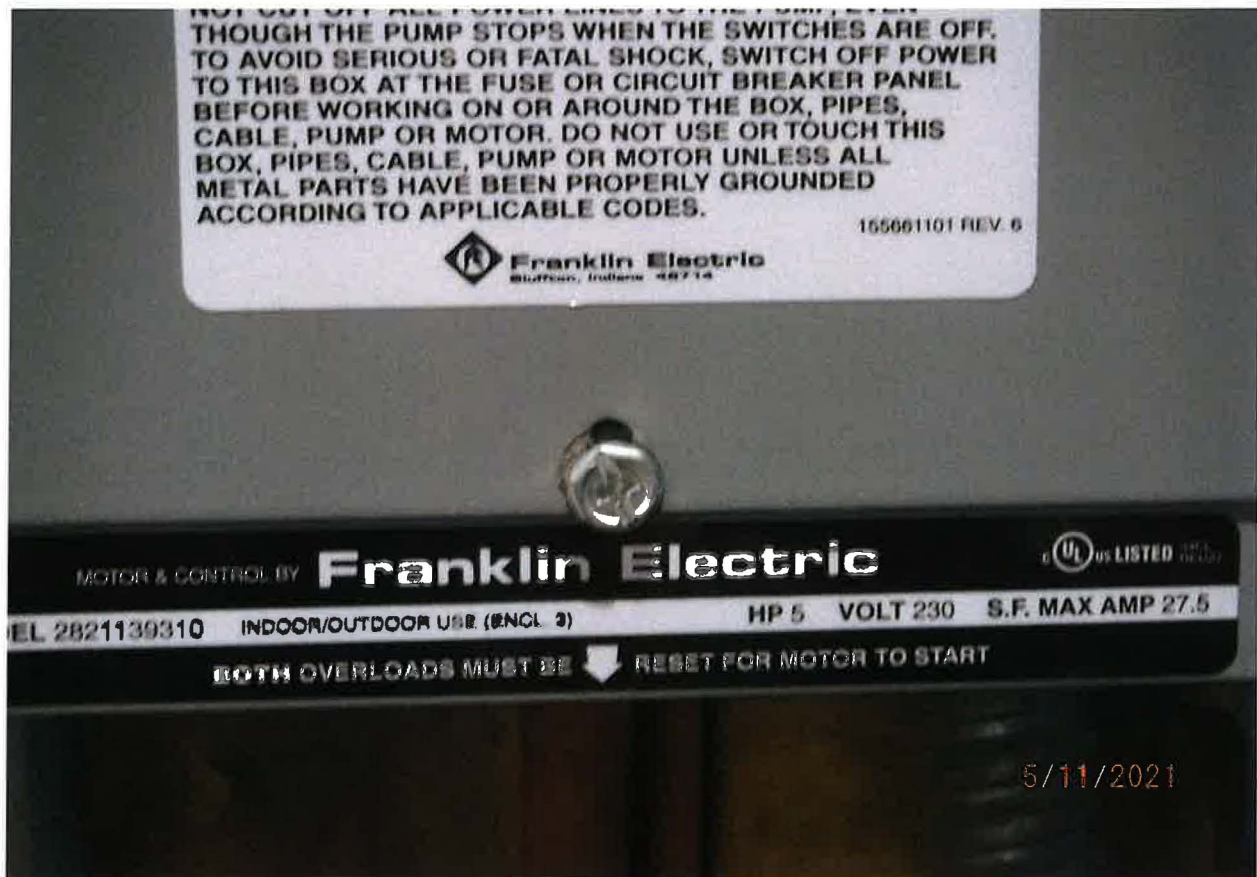
FIELD EXAM DATE 5/11/2021



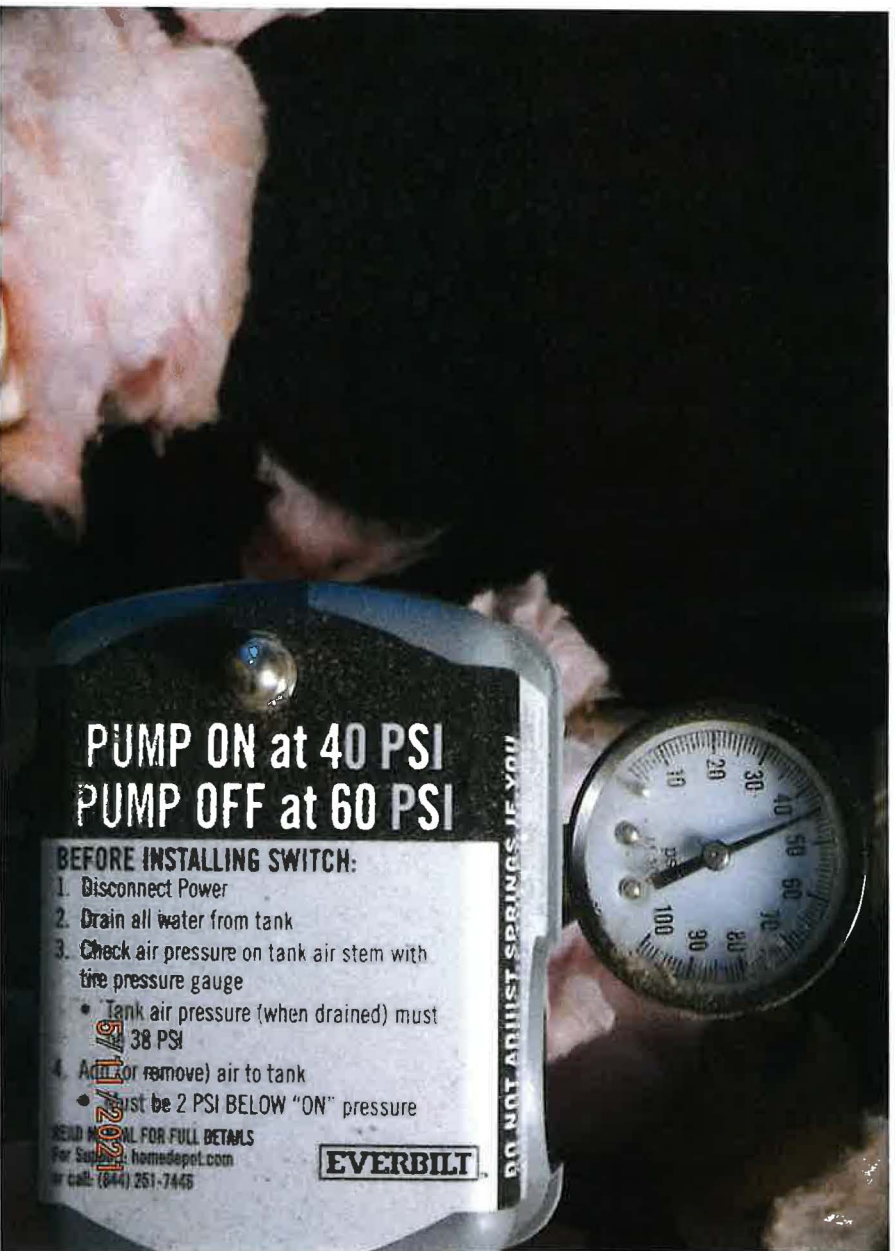
PUMP HOUSE & WELL (COVERED DOGHOUSE)



PIPING FROM WELL 95-80-N-90



5 HP PUMP IN WELL



45 PSI SYSTEM OPERATING PRESSURE



WATER SYSTEM DIVERTING WORKS



DOMESTIC POU – ERU LOCATED AT 6197 W MALLORY RD; PARCEL No. RP52N04W295620



DOMESTIC POU – HOME LOCATED AT 6051 W MALLORY RD; PARCEL No. RP52N04W295470



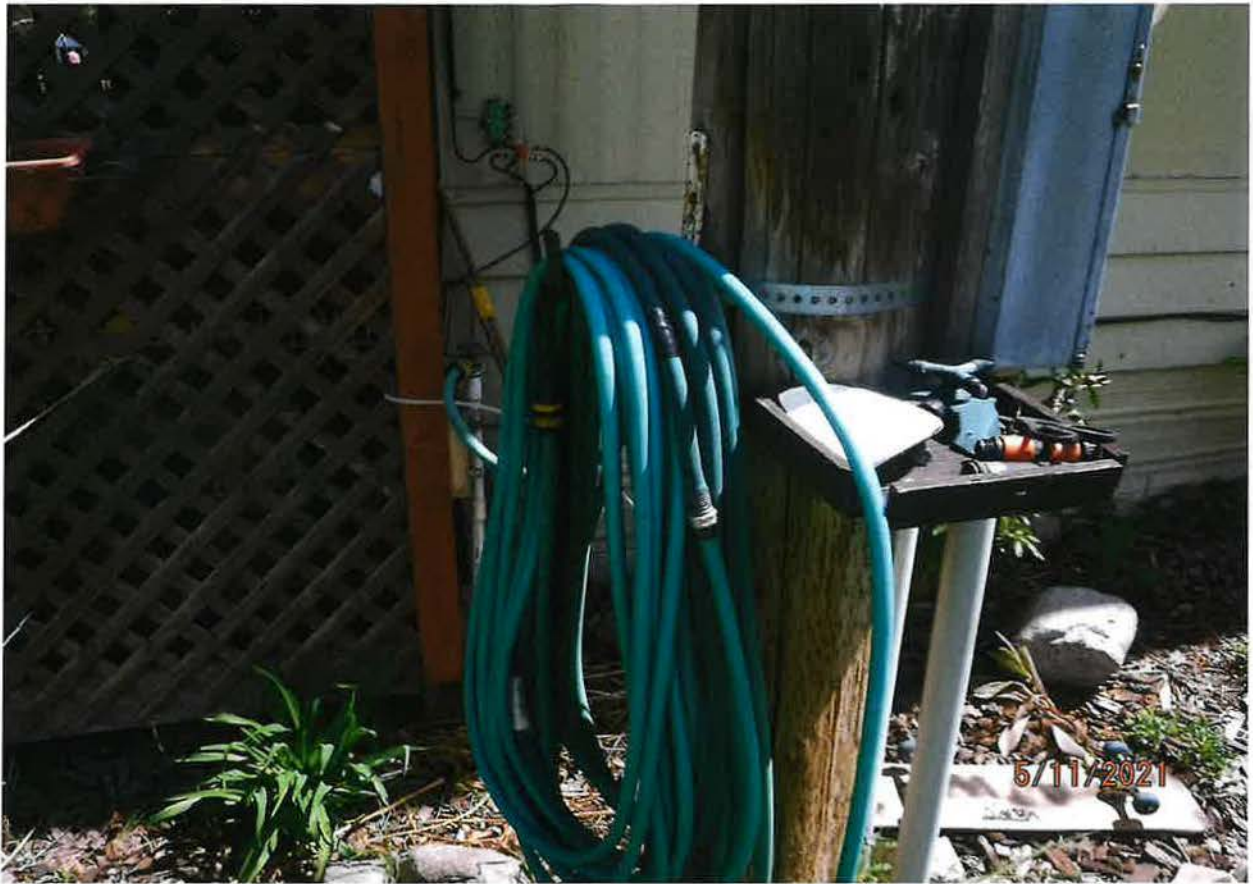
STOCKWATER POU – LOCATED ON MULTIPLE PARCELS





IRRIGATION POU – COVERS MULTIPLE PARCELS





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU



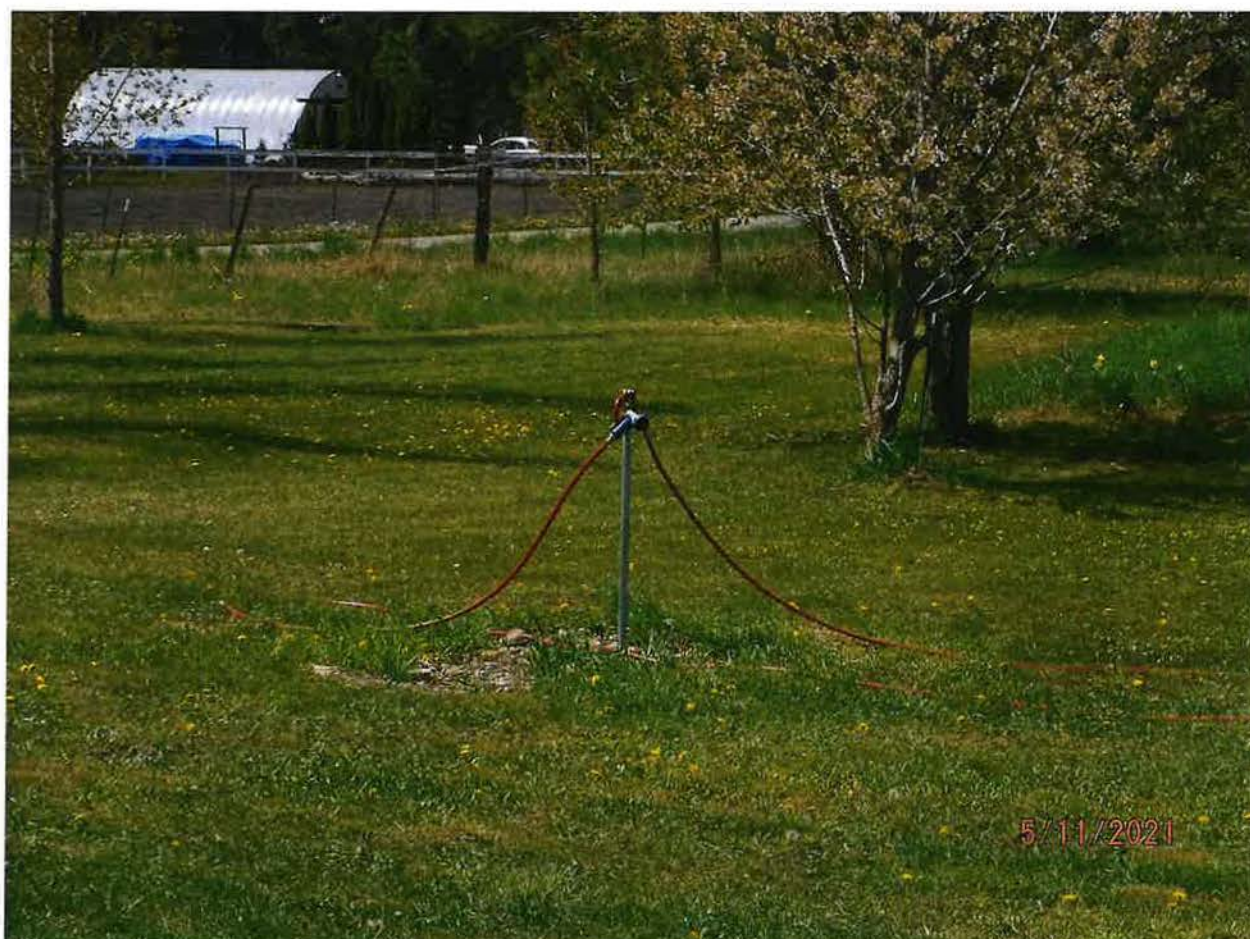


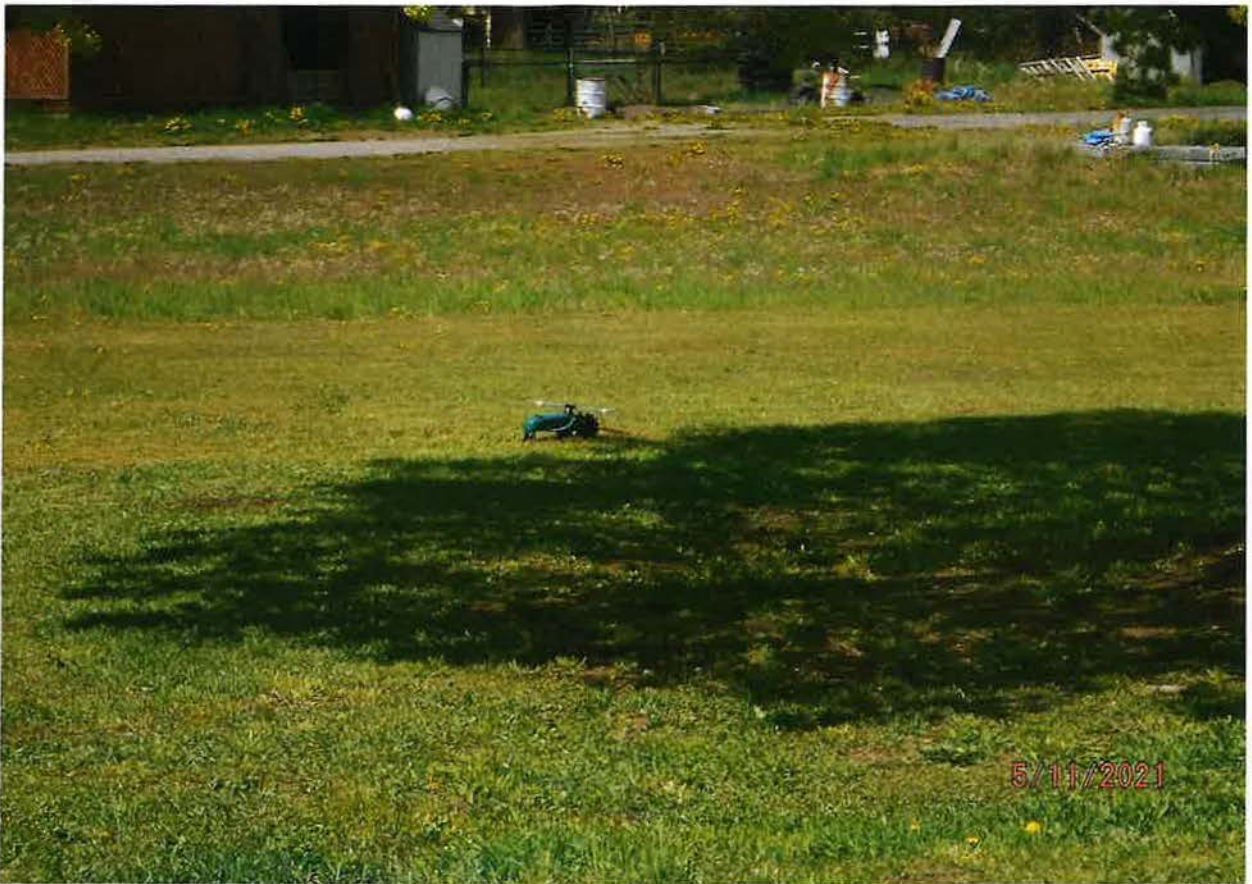
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