

A. GENERAL INFORMATION

Exam Date: 6/6/2012

- | 3. <u>SOURCE</u> | <u>TRIBUTARY</u> |
|------------------|------------------|
| SNAKE RIVER | COLUMBIA RIVER |

1. Other water rights with the same place of use: 02-10416 Gem Irrigation District (Surface Water)
2. Other water rights with the same point of diversion: None

1. LOCATION OF POINT(S) OF DIVERSION:

Method of Determination: ArcMap (Aerial Photo); GPS (Pond) N. 43.33852°, W. 116.40525°, Garmin GPSIII Plus; Datum NAD83.

Twp	Rge	Sec	NE				NW				SW				SE				
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>Totals</u>
03N	04W	27										3.0							3.0
												L 6							

Total Acres: 3

Method of Determination:

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.

<u>Well or Diversion ID No.*</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
		<u>2</u>		<u>Gould</u>	<u>30421301 (3")</u>

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

D. FLOW MEASUREMENTS

1.

<u>Measurement Equipment</u>	<u>Type</u>	<u>Make</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Size</u>	<u>Calib. Date</u>
<u>None</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>

2. Measurements: No field measurements. River pump dischargers to bubbler in pond. Irrigation nozzles are square and rectangular, so the pitot tube pressure measurement taken was not accurate.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: (Theoretical HP Equation)

$$Q (\text{Sewage Pump}) = 8.8 \times 0.7 \times 2/30 + (2.31 \times 50) = 12.32/155.50 = 0.08 \text{ cfs}$$

Z = 30' (River to Pond)
 Hp = 2 (horsepower)
 P = 50 psi (Assumed)

$$Q (\text{Irrigation Pump}) = 8.8 \times 0.7 \times 1/8 + (2.31 \times 50) = 12.32/155.50 = 0.08 \text{ cfs}$$

Z = 8' (Est. Pump Depth)
 Hp = 1 (Assumed-No Data)
 P = 50 psi (Assumed)

Q (Sprinklers): 8 heads/station (Variable)
 Q (Sprinklers) = 35 gpm (0.08 cfs) – Assume
 sizes.

pump installer
 pes of sprinkler heads and nozzle

↑
 145.50
 same
 result

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3 \times 4.5 = 13.5 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.06 \times 260 \times 1.9835 = 30.0 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 13.5 \text{ afa}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS**RIVER PUMP SYSTEM:**

A 2-hp sewage pump, located approximately 90 – 100 feet from the river bank, pumps water through a 3" PVC suction/discharge pipe to an irrigation box located next to a dock on the river bank. The 3" PVC suction/discharge pipe has been placed in a 6" steel sleeve which extends from the pump to the irrigation box. The suction/discharge pipe is reduced to 2 ½" PVC at the irrigation box. The 2 ½" PVC suction/discharge pipe discharges to a bubbler platform in a small irrigation regulating pond. A 6" screened overflow standpipe is located near the south end of the pond. The 6" overflow pipe discharges to an irrigation box, where the flow is diverted back to the Snake River.

PRESSURIZED IRRIGATION SYSTEM:

The pressurized irrigation system is operated by a submersible pump in the irrigation regulating pond. The sewage pump in the Snake River and the submersible pump in the pond operate simultaneously to maintain adequate water levels in the pond when irrigating. The pressurized irrigation system is comprised of 12 stations, each with a mixture of eight (8) pop-up sprinkler heads. Irrigation usually begins around April 15, and terminates around October 10. The initial irrigation setting in early spring and fall for each station is 30 – 45 minutes. The station times are increased to a range of 1 – 1 ½ hours during the months of June, July, and August. Upon completion of the irrigation season, water is not diverted from the Snake River to the pond. Pond water surface levels decrease during the fall and winter and are not maintained by operation of the river sewage pump.

OVERLAP:

Surface water from the Gem Irrigation District. Applicant stated that water delivery is irregular and inadequate to irrigate the approximate 3-acres of lawn and landscaping.

RATE &/OR STORAGE RECOMMENDED FOR LICENSING

Description	Rate of Flow (cfs)		Storage (af)
Permit Amount	0.06	&/or	
Beneficial Use Limit	0.06	&/or	
System Measurement	0.08(Theoretical)	&/or	
Proof Fee Amount	0.06	&/or	
Recommended Amount	0.06		

Have conditions of permit approval been met? ____Yes ____X____No

Applicant is not using surface water from the Gem Irrigation District. According to the property caretaker, surface water is not used due to lack of water available on a regular basis to irrigate the Merle's property. At the time of the field exam, the only irrigation structure known to the property caretaker was the structure used for the irrigation pond overflow. During the field exam, there was no surface water flow through the structure. According to the property caretaker, the flows of the irrigation wastewater have decreased in recent years due to changes in irrigation practices for the upstream irrigators. Gravity surface water irrigation practices have been replaced by sprinkler irrigation systems, significantly reducing or eliminating the irrigation wastewater runoff available to the Merle's for irrigation of their property.

H. RECOMMENDATIONS

1. Recommended Amounts

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	3/01 to 11/15	0.060 CFS	13.5 AFA *
<u>Totals:</u>		0.060 CFS	

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 ____Other

I. AUTHENTICATION

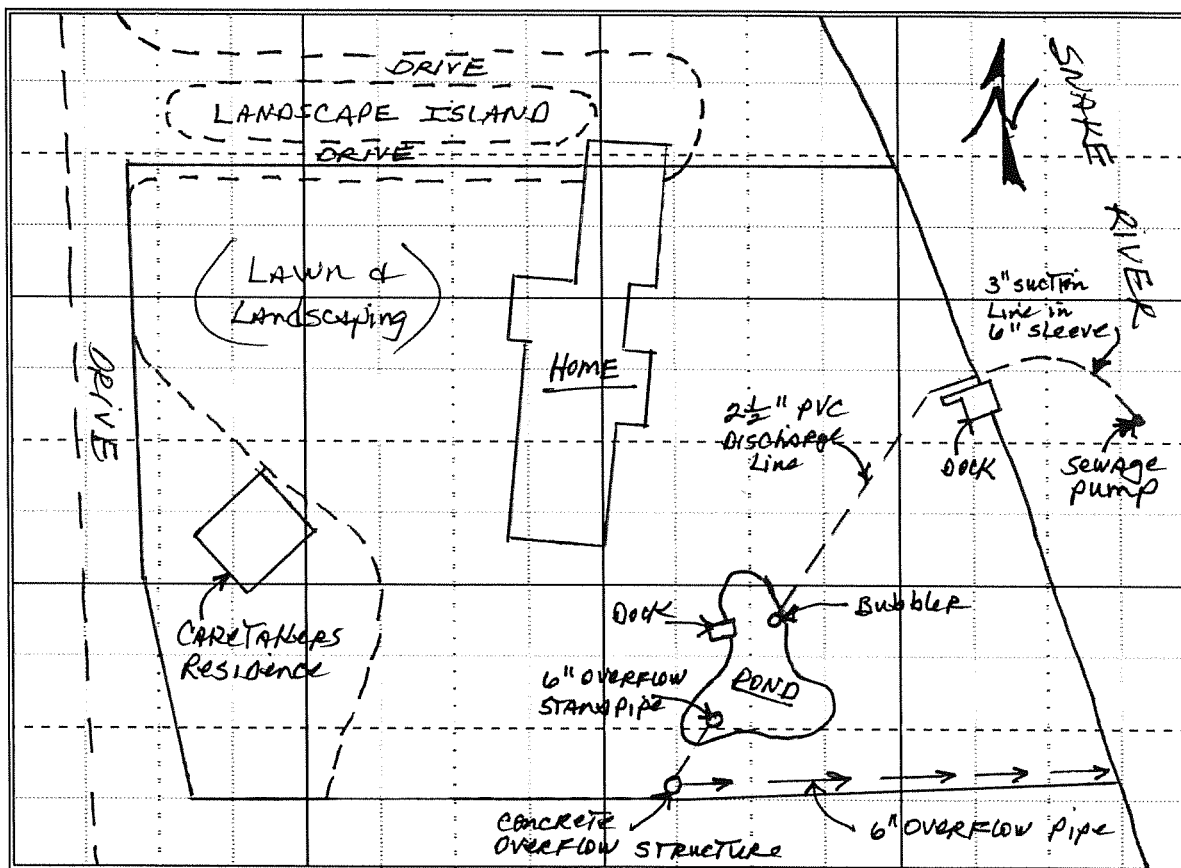
Field Examiner's Name Rick Collingworth Date 7-2-12

Reviewer _____ Date _____

* div. volume N/A per new b.m. ruler.
discussed with examiner, OK to license.

JL 7/12/12

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" = 100

- ☐ 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

02-7476
Gov't. Lot 6



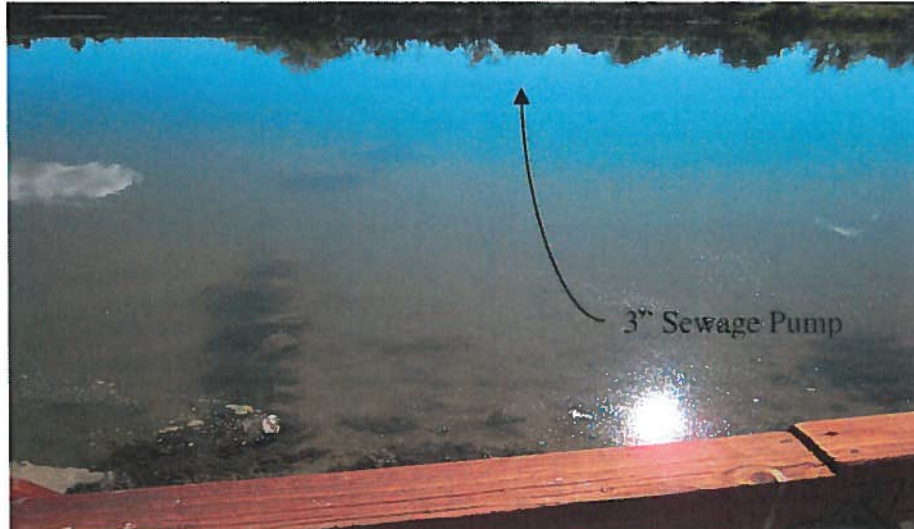
FIELD EXAM PHOTOS

Water Right Permit: 02-7476

Field Exam Date: 6-6-12

PLS: NW1/4, SW1/4 Section 27, T.03N, R.04W.

Field Examiner: RC



View east of the point of diversion in the Snake River. The 3" suction line, delineated by the line of rocks, is located within a 6" sleeve for protection. A 3" sewage pump diverts water from the Snake River to an irrigation pond for irrigation of lawn and landscaping on a 3-acre lot.



View northwesterly of place of use area west of home.



View southeasterly of river sewage pump discharging through a bubbler platform in irrigation pond. River sewage pump and irrigation pond submersible pump run simultaneously to maintain an approximate water surface elevation for the irrigation pond.



View southeasterly of irrigation pond and lawn sprinklers in operation. The bubbler platform for the river sewage pump discharge line is shown to the left.