

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 3-10282

Exam Date: 7/30/2020 & 8/10/2020

1. Current Owner:
ROBERT A DOBERSTEIN 854 UPPER RD WEISER ID 83672 AND
CAROL A DOBERSTEIN 854 UPPER RD WEISER ID 83672
2. Accompanied by: Robert A. Doberstein (both pumps)
Phone No: 520-508-2235
Address: 1310 Airport Road, Weiser, ID 83672
Relationship to permit Holder: owner

3. **SOURCE:**
GROUND WATER
SNAKE RIVER

Tributary
COLUMBIA RIVER

Method of Determination: looked up the overlapping water rights whose POD's are being utilized.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: No Overlap

Water Right No.	Source	Purpose of Use	Basis

2. Other water rights with the same point-of-diversion: Yes Overlap

Water Right No.	Source	Purpose of Use	Basis
3-2036A	Snake River	Irrigation	Decreed
67-2226	Groundwater	Irrigation	Decreed

Comments: The first point of diversion is from a slough located at the extreme northeast portion of the property. The second point of diversion is from an existing well. While the application does not include the pump near the farmhouse, that pump is part of the irrigation system when rights are combined.

C. DIVERSION AND DELIVERY SYSTEM

Both the groundwater well and two surface water pumps are linked together to irrigated three pivots north of the farmhouse. When needed, the pump near the farmhouse is also used to irrigate by gravity a field to the south of the farmhouse. The combined limit of the three water rights is 2.32 cfs.

It appears that the Dobersteins enlarged the diversion capacity of the Slough Pump and that the enlarged pumping capacity of surface water resulted in electrical capacity issues when they tried to run the groundwater pump along with the surface water pumps. With the two surface water pumps diverting a combined rate of 3.59 cfs at the time of the field exam, the Dobersteins have exceeded the diversion limits on their water rights and the Permit 3-10282. Because the surface water rights have separate places of use, the combined limits on the water right were not applicable. At the time of the field exam the Dobersteins were irrigating 20 acres of land with water from the Snake River outside of the POU's for their Snake River Water rights and Permit. The following three paragraphs describe the three points of diversion.

Farm house pump (3-2032):

The farmhouse pump built by US Electrical Motors Inc. consists of a pump of unknown horsepower that diverts water from the Snake River on the west side of the property near an existing farmhouse. The head on the pump is approximately 10 to 15 feet. The pump diverts the water into a bubbler. From the bubbler the water can be diverted either into a gravity system that irrigates the field south of the farmhouse using gated pipe, or the water passes through a 25 horsepower Baldor Reliance booster pump to three pivots located north of the farmhouse. This water right allows for the diversion of 1.82 cfs.

Slough Pump (3-2036A):

A 30 horsepower Baldor Reliance Pump with a 10-15 foot head pulls water from a slough of the Snake River into the pressurized irrigation system that is supplied by two surface water pumps and a groundwater pump as described above. The POD for this water right in the GIS layers appears to be located in the slough. Water Right 3-2036A describes the POD as being in the NWNE of Section 8, Township 10N, Range 05W. The new pump appears to fall just within the NENW. It may be that when the new pump was installed the location was adjusted just across the quarter quarter line. Because the permit called for the POD to be within the NENW, and the pump appears to be located within the NENW, I am suggesting the license recognize the POD for 3-10282 as being within the NENW even though 3-2036A is decreed within the NWNE.

Groundwater Pump (67-2226):

This pump was not in operation at the time of the field exam. Robert indicated that they were working on getting the pump back online but had electrical capacity issues that they were trying to resolve. He also indicated that the pump was facing problems with too much drawdown and they might need to deepen the well. Because the well was not in use we did not measure it. The previous field exam indicates that the pump could divert 35 inches which is equivalent to the water right of 0.7 cfs. This pump ties into a pressurized system with three pivots north of the farmhouse.

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NE¼ SW¼, Sec. 8, Twp 10N, Rge 05W, B.M. WASHINGTON County
 SNAKE RIVER NE¼ NW¼, Sec. 8, Twp 10N, Rge 05W, B.M. WASHINGTON County

Method of Determination: Locations as identified on existing rights were used.

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	
10N	05W	8								2									2

Total Acres: 2

Method of Determination: Aerial photo showing recently cleared farmland. The Proof of Beneficial use statement claims four acres, but the field exam revealed two acres of land without existing water rights was cleared.

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

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

☒ X

☒ 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
652098	Uniclosed	NA	3047791	US Motors	6 inches
652098	Baldor	25	219124 10.5		
937267	Baldor	30	Z1608150607		6 inches

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
-----------------------	------	------	-----------	------------	------	-------------

Panametrics	PT878	GE	PT878	IDWR 282124		

2. Measurements:

The pump near the farmhouse that pulls water from the Snake River was measured, while the pump pulling water from the slough at the northeast corner of the property and the groundwater well were estimated using a theoretical calculations.

_____ Additional Computation Sheets Attached

E. FLOW CALCULATIONS

Snake River Pump (near the farmhouse): measured 1.87 cfs

File Title: C:\Users\dnelson\Desktop\LOG01.LOG
File Name: C:\Users\dnelson\Desktop\LOG01.LOG
Start Time: 7/30/2020 13:31
End Time: 7/30/2020 13:42
Interval: 60
Records: 11
Cyclic Flags: 2
Error Flags: 8208

Date/Time	Velocity (ft/s)	(+)Total (gal)	Volume (gal/m)	Error #
7/30/2020 13:31	3.56734691	281069.5847	835.2826201	0
7/30/2020 13:32	3.604130646	281899.2378	843.8954117	0
7/30/2020 13:33	3.625109298	282764.9183	848.8074945	0
7/30/2020 13:34	3.59598595	283597.5031	841.9883578	0
7/30/2020 13:35	3.570852197	284471.3393	836.1033716	0
7/30/2020 13:36	3.608187441	285299.1972	844.8452971	0
7/30/2020 13:37	3.587938459	286128.7434	840.1040641	0
7/30/2020 13:38	3.585485362	286956.9589	839.5296796	0
7/30/2020 13:39	3.589913498	287822.6852	840.5665131	0
7/30/2020 13:40	3.59232254	288649.8933	841.1305823	0
7/30/2020 13:41	3.598988153	289478.4503	842.691314	0

Average GPM per Totalizer =	841 (or 1.87 cfs)
Average GPM per Instant Reading =	841

Slough Pump: A measurement on the Slough Pump failed to measure a reasonable level of flow (8/10/2020). Flow measurements varied from 297.9 gpm to 354.4 gpm. There was much difficulty in getting a proper signal and sound speed. Without proper diagnostics a measurement has a high degree of uncertainty. Therefore a theoretical calculation was made to determine the capacity of the pump. The pump capacity was found to be 1.72 cfs or 810 gpm.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 3-10282
 Reviewer: David Hoekema
 Date of Review: 8/26/2020

P/D No.:	D0059170
PUMP HORSEPOWER	30
BOOSTER HORSEPOWER	0
PUMPING LEVEL (head)	15
DISCHARGE PRESSURE	40
RATE OF FLOW (cfs)	1.72
RATE OF FLOW (gpm)	772

Groundwater Pump: At the time of the field exam the groundwater pump was not operational due to issues with providing the pump with adequate electricity to run. Therefore for determining capacity we are relying on the previous field exam in which the measured discharge was used to set the water right at 0.70 cfs.

1.87 cfs Snake River Pump (near farmhouse)

1.72 cfs Slough Pump

0.70 cfs Groundwater Pump

4.29 cfs Total System Capacity (3.59 cfs of surface water)

Water rights 3-2036A, 3-2032, and 67-2226 are limited to a combined diversion rate of 2.32 cfs. If the whole system is diverting water at the same time there would be an over diversion of 1.97 cfs. At the time of the field visit the groundwater pump was not in operation. Since there is no overlap in the surface water rights, the Snake River pump was over diverting by a slight amount: $1.87 - 0.182 = 0.05$ cfs which is likely within the measurement uncertainty. However the Slough pump was over diverting by a significant margin: $1.72 \text{ cfs} - 0.135 \text{ cfs} = 1.585 \text{ cfs}$.

Because condition three of the permit limits diversion to 0.03 cfs per acre and the slough pump has excess diversion capacity, I am recommending the maximum diversion rate of 0.03 cfs/acre or 0.06 cfs to irrigate the two acres of newly developed land.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2 \text{ acres} \times 4.5 \text{ ac-ft / acre} = 9.0 \text{ ac-ft}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.06 \text{ cfs} \times 260 \text{ days} \times 1.9835 \text{ ac-ft / cfs days} = 30.9 \text{ ac-ft}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 9.0 \text{ ac-ft}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

The Doberstein's applied for a permit to divert groundwater and surface water from two existing PODs in order to clear about 5 acres of land along the Snake River for irrigation. Their farm is located on Long Island, an island on the Snake River just below the town of Weiser. Access to the island occurs via a bridge located at the corner of Scheloske Lane and Airport Road. The Doberstein's farm includes all of the island north of the bridge. The Zinikers own the land on the island south of the bridge. Currently the Doberstein's have three water rights to irrigate their farmland on the island. In the following sections, I will describe Doberstein's water rights based on individual limits and then with their combined limits.

Water Right 67-2226 (Groundwater)

Provides irrigation via groundwater to most of the northern portion of the island above the farmhouse located about ¼ mile north of the bridge. The water right has a rate of 0.70 cfs on 87 acres and a priority date of 12/15/1952. The volume limit on the water right is 361 ac-ft/year. The water right provides a diversion rate of 0.70 cfs on 87 acres. When combined with the other water rights, the combined water rights are limited to 116 acres. If used solely to irrigate the 87 acres on the water right, the volume limit would limit the annual irrigation rate to 361 ac-ft/yr / 87 acres to 4.15 ft/yr, which is short of the 4.5 ft / yr headgate delivery limit in this region of Idaho. I have assumed the diversion rate of the well is 0.70 cfs, based on historic beneficial use field exams.

See attachments:

- Groundwater Rights Map

Water Right 3-2032 (Snake River Pump near the Farmhouse)

Provides irrigation via the Snake River to land both south and north of the farmhouse. The POD is located just to the south of the farmhouse along the main stem of the Snake River. The POU does not extend to the northern extent of the island. The water right has a rate of 1.82 cfs on 91 acres and a priority date of 12/15/1952. There is no volume limit on the water right. The 1.82 cfs is adequate to irrigate 91 acres on farm to a depth exceeding 4.5 ft/yr. The measured diversion rate of the pump was 1.87 cfs which is close to the water right.

See attachments:

- Surface water rights maps
- Photos of farmhouse pump

Water Right 3-2036A (Slough)

Provides irrigation via Snake River water out of the slough to 7 acres at the top of the island. The POD is located on a slough of the Snake River at the northeastern edge of the 7 acres associated with this water right. The water right has a rate of 0.135 cfs on 7 acres and a priority date of 3/08/1955. There is no explicit volume limit on the face of the water right. The current rate of diversion is estimated to be 1.72 cfs, which far exceeds the water right at the POD.

See attachments:

- Surface water rights map
- Photos of slough pump

Combined Water Right Limits:

Since the groundwater right overlaps both surface water rights, there is a combined limit on the rights to 2.32 cfs on 116 acres. There are currently 96 acres in irrigation north of the farmhouse and 20 acres below the farmhouse. There are also 4.5 acres located on a peninsula or island that extends into the slough. These 4.5 acres are located below the farmhouse. At the time of the beneficial use exam, Robert indicated that land was not being irrigated.

Irrigation Layout:

The irrigation system for this farm consists of two surface water pumps and a groundwater pump. The three pumps are linked to form a pressurized irrigation system with three pivots. See attached Delivery System Diagram. The farmhouse pump provides irrigation water to the both a pressurized irrigation system which is attached to the other two pumps and a 20 acre field to the south of the farm that is irrigated by gated pipe. It is clear from the field exam and aerial photos that some

of the land that was previously unirrigated has been brought under irrigation. Aerial photos from 2017 and 2019 indicate that about 2.0 acres of land was cleared that had neither surface water nor groundwater rights.

At the time of the field exam, the farmhouse pump was delivering water at close to its water right limit of 1.82 cfs. The groundwater pump was not operational, and the slough pump was far exceeding its water right 0.135 cfs, with an estimated diversion of 1.72 cfs. Because the irrigator was not running the groundwater pump, he should have limited his irrigation to the 98 acres covered by his surface water rights, instead of the full 116 acres of land under irrigation at the time. He was found to be irrigating 20 acres of land on which he had no surface water rights and not irrigating 4.5 acres on which he had surface water rights. Dan Nelson and I talked to him about bringing his irrigation system into compliance by restoring his groundwater pump and suggested that he apply for a permit or transfer so that he can apply his surface water and groundwater to all the irrigated portions of his farm.

Based on the field exam, I recommend that this right include a diversion rate of 0.06 cfs of surface water and groundwater for 2 acres within the SENW quarter-quarter and that this right when combined with the other rights be limited to 118 acres and a diversion rate of 2.38 cfs.

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>Volume</u>
IRRIGATION	03/01 to 11/15	0.06	

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

David Hoekema - Hydrologist, Technical

Field Examiner's Name David Hoekema Date 3/2/2021

Reviewer Angela M. Gunn Date 3/5/2021

State of Idaho
Department of Water Resources
Attachment to Water Right License
3-10282

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



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

0 0.05 0.1 0.2 Miles



State of Idaho
Department of Water Resources
Doberstein's Irrigation System 2020



Quarter Quarters

0 0.075 0.15 0.3 Miles



State of Idaho
Department of Water Resources
Aerial Photo 2019

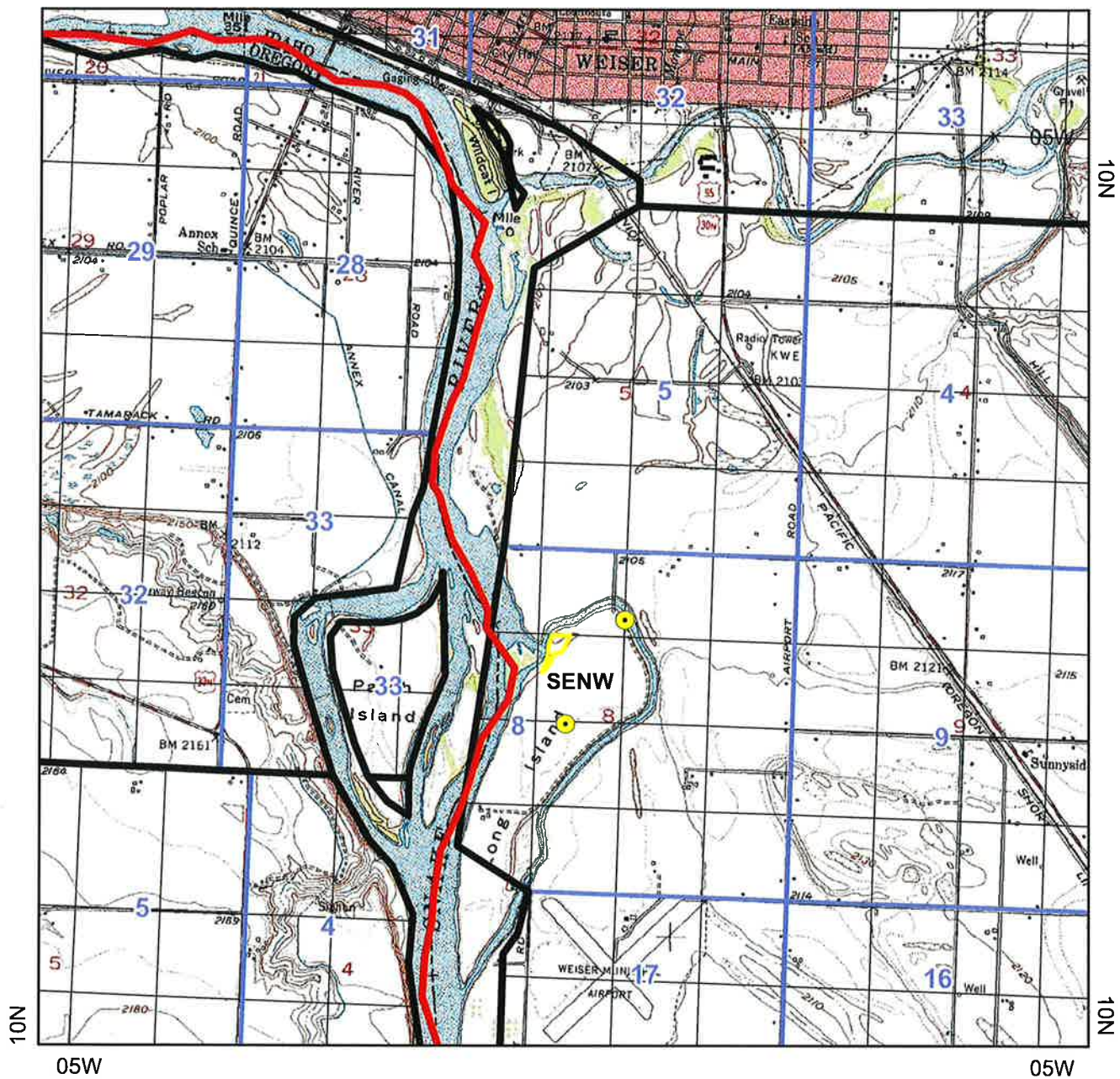


 Quarter Quarters

0 0.075 0.15 0.3 Miles



State of Idaho
Department of Water Resources
Location Map
3-10282

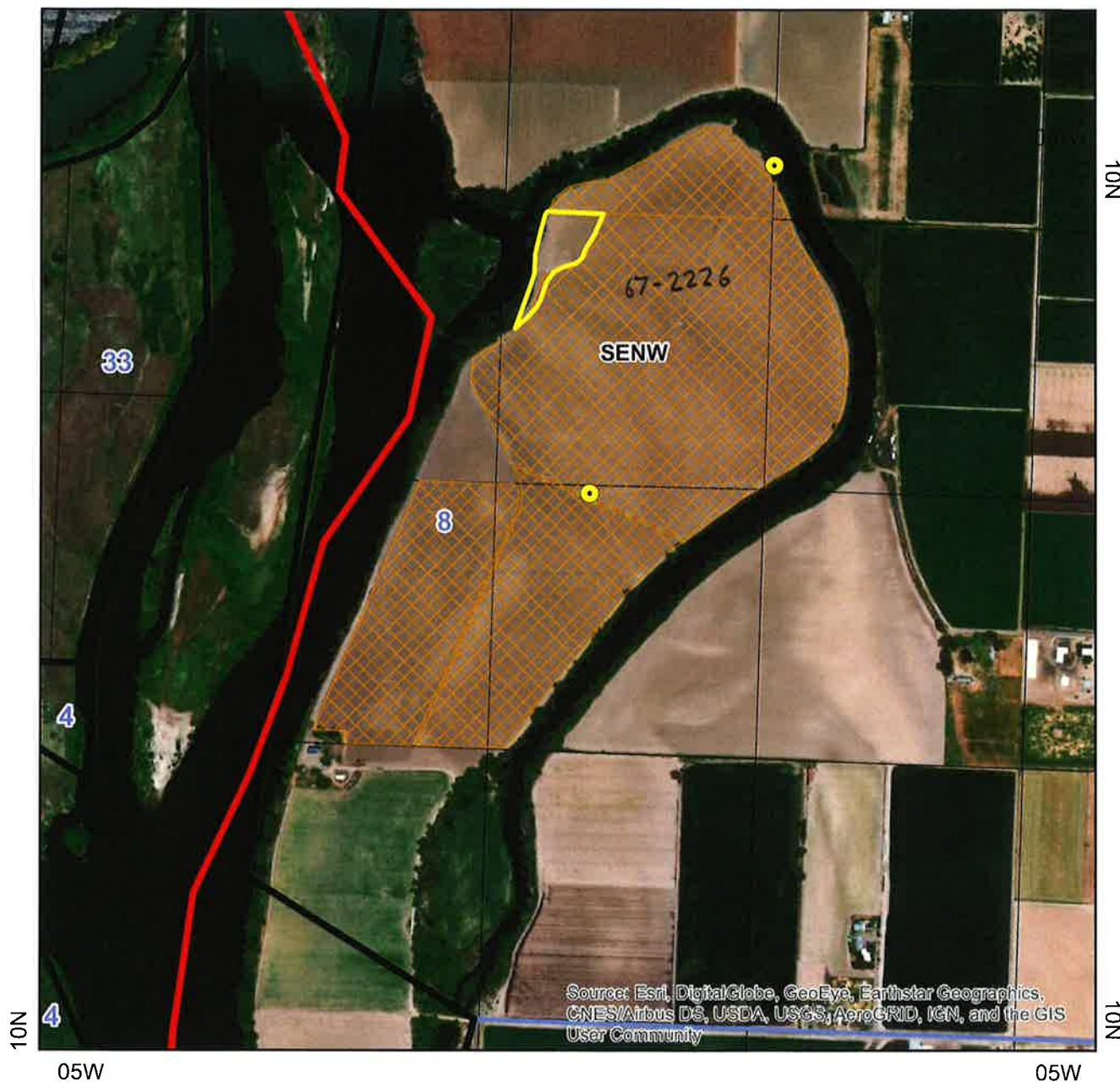


- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.3 0.6 1.2 Miles



State of Idaho
Department of Water Resources
**Groundwater Right 67-2226
and Permit 3-10282**



05W

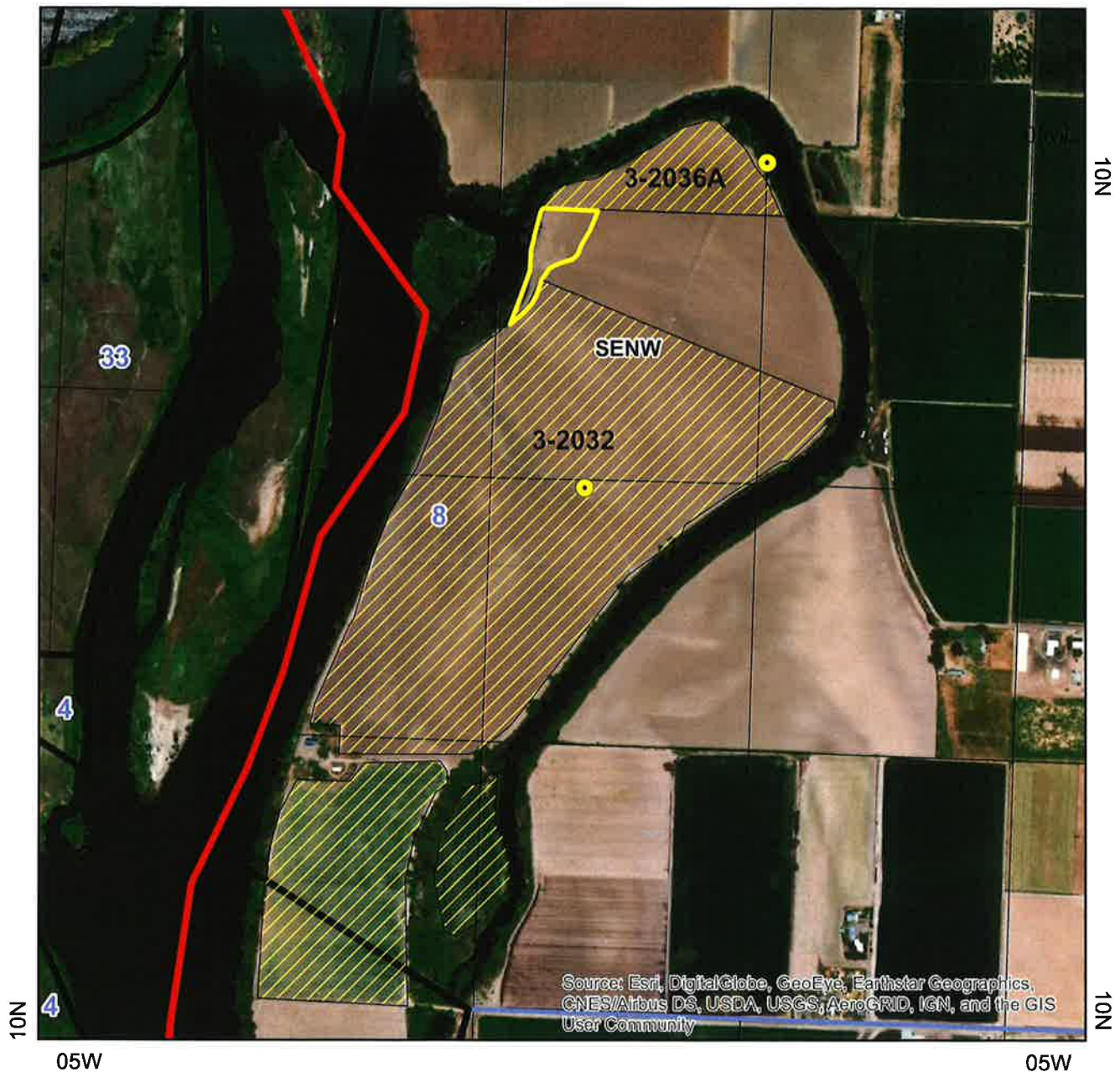
05W

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

0 0.1 0.2 0.4 Miles



State of Idaho
Department of Water Resources
**Surface Water Rights 3-2036A & 3-2032
and Permit 3-10282**



05W

05W

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

0 0.1 0.2 0.4 Miles



**Pictures from Field Exam:
Farmhouse Pump**



This pump of unknown horsepower pulls water from the river where it passes into a bubbler, excess water discharges back to the Snake River (see photo below).





Photo of bubbler. The pipe to the left leads to the gated pipe which irrigates the 20 acres south of the farmhouse. The 25 hp booster pump (also see photo below) on the left pressurized the three pivots irrigating the field north of the farmhouse.



SLOUGH PUMP



This 30 hp Baldor Pump diverts water from a slough of the Snake River located at the northeast edge of the farm. The Panametric measuring device can be seen on the pump.

