

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 87-12263
Exam Date: 08/04/2022

1. Current Owner:
LISA GADWA 1400 SAND RD MOSCOW ID 83843-8889 AND/OR
DOUG GADWA 1400 SAND RD MOSCOW ID 83843-8889
2. Accompanied by: Doug Gadwa
Phone No: 509-330-1208
Address: Same as above
Relationship to permit Holder: Permit Holder

3. **SOURCE:**
SOUTH FORK PALOUSE RIVER

Tributary
PALOUSE RIVER

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
87-12262	GROUNDWATER	DOMESTIC, STOCKWATER	DECREE

Comments: Decreed Right 87-12262 is owned by the applicants and uses a private groundwater well for domestic & stockwater use on the property. These beneficial uses are from a separate system and source, and don't constitute concerns for overlap between the two water rights.

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

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

SOUTH FORK PALOUSE RIVER L1 (NW¼ NW¼), Sec. 19, Twp 39N, Rge 05W, B.M. LATAH County

Method of Determination: GPS; POD is located at -117°1.3619, 46°42.8484.

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	
39N	05W	19						3.3											3.3
39N	06W	24	0.2																0.2

Total Acres: 3.5

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 Model No.	Pump Make	Pump Model No. or Discharge Size
Horizontal Centrifugal Pump	STA-RITE	2	C48M23C11C3	PENTAIR	3420p 1.5 inch discharge

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Three 5-gallon bucket tests were completed from a hose bib and hose connected to the pump, with an average of three measurements resulting in a diversion rate of 11.7 gpm = **0.03 cfs**, considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: 5-GAL Bucket Test = (5 gal / 25.83 sec) x 60 sec/min = 11.6 gpm
 = (5 gal / 25.37 sec) x 60 sec/min = 11.8 gpm
 = (5 gal / 25.46 sec) x 60 sec/min = 11.8 gpm

Average of 3ea 5-GAL Bucket Tests = (11.6 gpm + 11.8 gpm + 11.8 gpm) / 3 = 11.7 gpm = 0.03 cfs considering department rounding standards.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{I.R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3.5 \text{ ac} \times 3.0 \text{ afa} = 10.5 \text{ af}$$

$$V_{D.R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.03 \text{ cfs} \times 231\text{-day} \times 1.9835 = 13.7 \text{ af}$$

$$V = \text{Smaller of } V_{I.R} \text{ and } V_{D.R} = \mathbf{10.5 \text{ af}}$$

2. Volume Calculations for Other Uses: This right uses as surface water source and does not receive an irrigation annual diversion volume nor maximum diversion volume assigned to the face of the water right license.

G. NARRATIVE/REMARKS/COMMENTS

Beneficial use field exam conducted on 8/4/2022 with the applicant, Doug Gadwa, showed S.F. Palouse River water being diverted for irrigation purposes. At the POD, a screened intake has been installed to a Sta-Rite 2 hp horizontal centrifugal pump model No. 3420P. The 1.5-inch discharge pipe from pump routes upgrade across a field where it splits into two 1-inch irrigation trunk lines configured with hose bib irrigation risers at intervals. Long hose lengths are used with portable impact sprinklers & Bozzle Nozzle 360-degree spray heads which are capable of irrigating 5 to 8-meter diameter. The applicant also uses hoses and sprinklers from the pump's hose bib to irrigate the lower field that runs along the river front.

I performed three 5-gal bucket flow measurements from a hose connected to pump which derived an average diversion rate of 0.03 cfs considering department rounding standards. This value is less than the department standard rate for the 3.5 acres active irrigation observed, but I'm recommending 0.03 cfs for licensing based on pump performance found at time of exam. Mr. Gadwa asserts he would irrigate more but runs into head pressure issues pumping upgrade to the furthest extent of the irrigation POU. As it was developed, Mr. Gadwa rotates sprinklers continuously throughout the irrigation season to keep horse pasture plots, lawn, garden, and landscaping irrigated.

The irrigation POU was walked with Mr. Gadwa during the exam and active irrigation from two sprinklers were observed at the furthest reaches of the irrigation POU, illustrating the pump system can move water the required distance to put water to beneficial use. Field maps were used to sketch out the POU. ArcMap aerial imagery was used during licensing review to accurately trace out the irrigation POU while cutting out houses and roadways. Imagery supports pasture irrigation as the 5-to-8-meter irrigation rings can be seen in multiple past year(s) imagery layers. The Permit's development period was very short, with the applicant submitting the statement of completion shortly after gaining permit approval. Mr. Gadwa asserts he was filing for a system that has been irrigated for many years leading up to the filing. The month of September falls within the season of use for irrigation and active irrigation occurred throughout the POU during that month so I'm able to credit the beneficial use of water.

The irrigation POU equates to 3.5 acres, which is authorized an annual diversion volume of $3.5 \text{ ac} \times 3.0 \text{ afa} = 10.5 \text{ af}$. Due to the surface water source, there is no annual volume nor maximum diversion volume applied to the face of the license. 0.03 cfs can produce 13.7 af if operated 24/7 during the season of use, confirming the pump capacity is sufficient to irrigate 10.5 af authorized by department standard irrigation rates. The applicant is limited to 3 acre-feet per acre as detailed in conditions of approval for licensing purposes.

During licensing review, I removed condition 029 and replaced condition R62 with R66 to accurately describe the authorized diversion rate & volume of 0.03 cfs and 3 afa per acre for irrigation. All other conditions on the permit shall be carried forward to licensing. As discussed on PG 1, there are no overlapping water right concerns toward licensing this permit.

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>
IRRIGATION	03/15 to 10/31	0.03 CFS

Totals: 0.03 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 X None

I. AUTHENTICATION

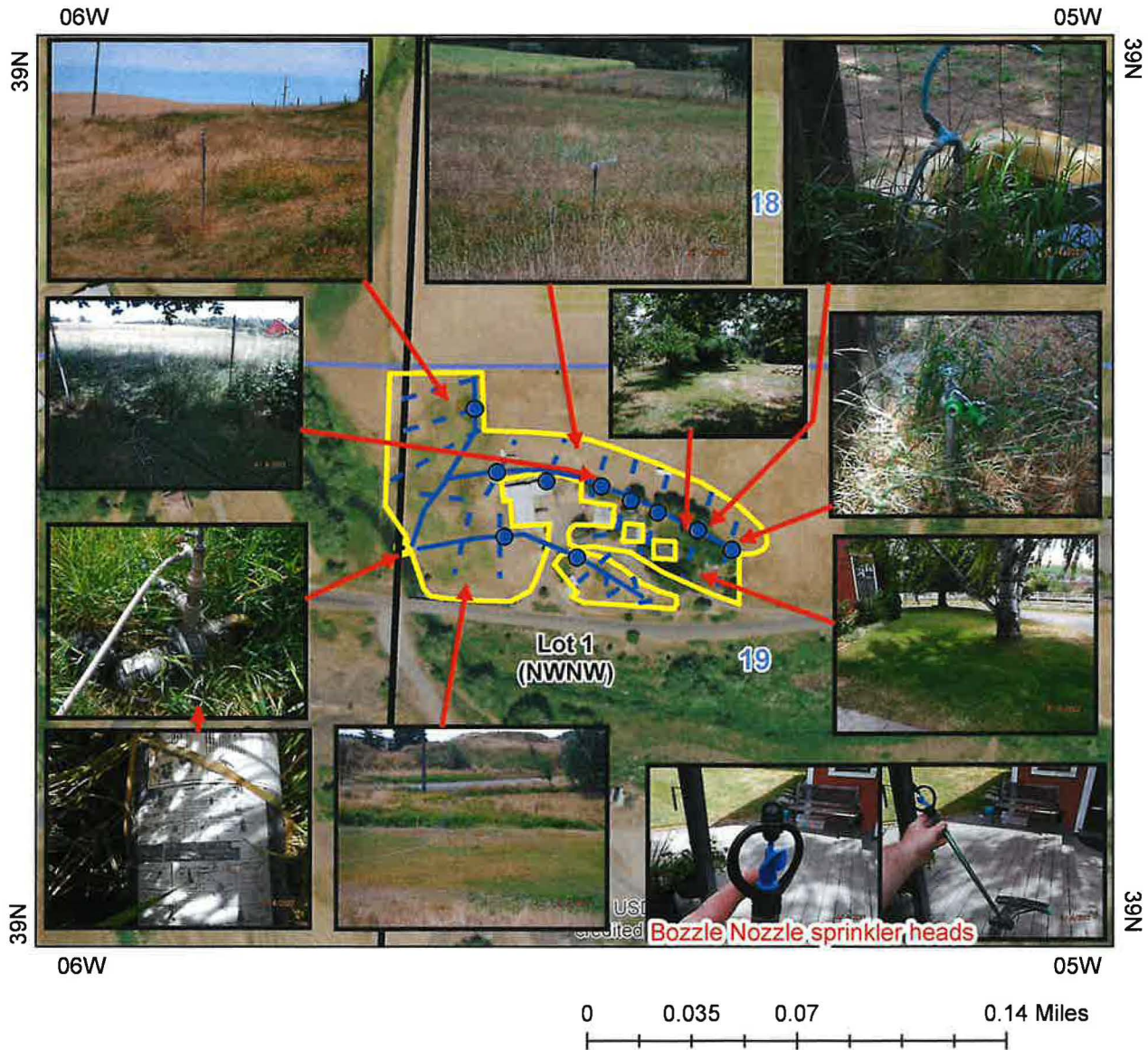
Luke Bates -

Field Examiner's Name *[Signature]* Date 12/15/2023

Reviewer *[Signature]* Date 5/29/24

State of Idaho
Department of Water Resources
Attachment to Field Exam
87-12263

This map depicts the IRRIGATION system diagram.



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





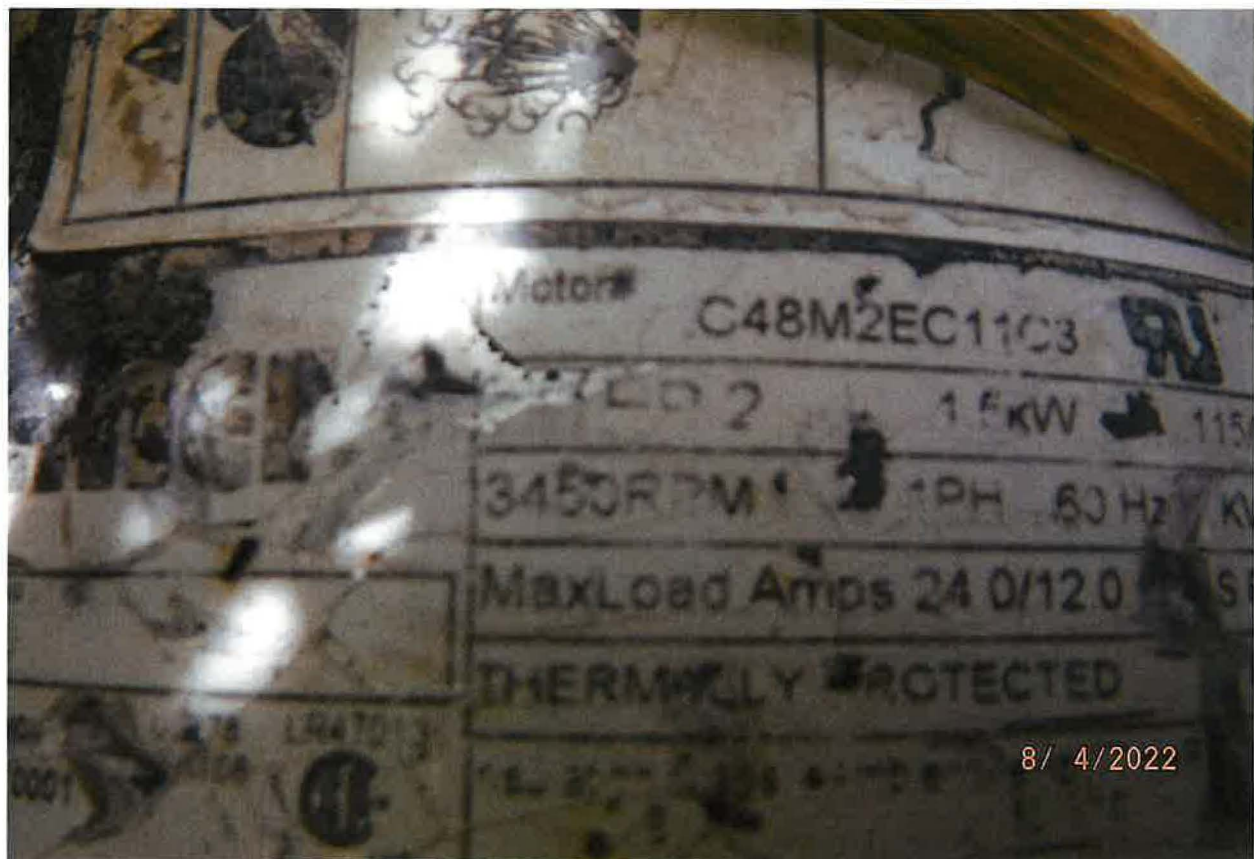
BENEFICIAL USE FIELD EXAMINATION DATE 8/4/2022



POD – SCREENED INTAKE WITH PUMP FROM S.F. PALOUSE RIVER



DIVERTING WORKS – 2 HP PUMP TO 1 ½ INCH MAIN LINE TO 1 INCH IRRIGATION RUNS AND HOSE/SPRINKLER ATTACHMENT POINTS AT INTERVAL





PUMP MOTOR # C48M23C11C3



IRRIGATION POU – HOSE AND IMPACT SPRINKLER W/2 NOZZLES



IRRIGATION POU





IRRIGATION SYSTEM SPRINKLERS





IRRIGATION POU



IRRIGATION RISER PIPE TO HOSE BIB ATTACHMENT



1 INCH IRRIGATION PIPE ROUTES ALONG FENCE WITH RISERS AT 50 YARD INTERVALS





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU

