

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 98-7875

Exam Date: 07/03/2019

1. Current Owner:
ERIC E MADSON PO BOX 1539 BONNERS FERRY ID 83805

2. Accompanied by: Eric Madson
Phone No: 208-610-0166
Address: Same as above
Relationship to permit Holder: Permit holder.

3. **SOURCE:**
UNNAMED STREAM

Tributary
KOOTENAI 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
98-7750	GROUNDWATER	MUNICIPAL	LICENSE

Comments: WR 98-7750 uses groundwater as its source, and is not associated with the surface water source in this water right; it is not a concern for overlap.

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

Water Right No.	Source	Purpose of Use	Basis
98-7402	UNNAMED STREAM	IRRIGATION	LICENSE

Comments: WR 98-7402's POD is for the same permit holder, for use on the same property. This water right is being licensed due to additional irrigation acreage on property. Conditions X35 and F06 used to describe irrigation diversion and volume limitations that mitigate any concerns for overlap.

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

UNNAMED STREAM NE¼ NE¼, Sec. 24, Twp 61N, Rge 01E, B.M. BOUNDARY County

Method of Determination: Field exam and GPS. POD is a catch basin used for 24 HR impoundment, with gravity pipe fed diversion located at -116°16.297, 48°37.806.

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	
61N	01E	13	3.0			27.0			4.1	24.0									58.1

Total Acres: 58.1

Method of Determination: Field exam and arcmap.

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
NONE					

D. FLOW MEASUREMENTS

1.

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

2. Measurements: Unable to perform flow measurements, as applicant had constructed a small diversion catch basin for 24-hr fill allowance, that fed from an unnamed stream and then by gravity flow down-hill to the applicant's property. There was no suitable place to perform flow measurements.

E. FLOW CALCULATIONS☒ Additional Computation Sheets Attached

Measured Method: Applicant provided a flow measurement worksheet, which identifies diversion gpm by fields/garden, and a combined total 217.15 gpm = **0.48 cfs**.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 58.1 \text{ acres} \times 3.0 \text{ afa} = 174.3 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.48 \text{ cfs} \times 214 \times 1.9835 = 204 \text{ af}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{174.3 \text{ af}}$$

2. Volume Calculations for Other Uses:

This is a surface water right, so no volume will be included on the water right license.

G. NARRATIVE/REMARKS/COMMENTS

Field exam with applicant, Eric Madson, showed water being diverted from unnamed stream for irrigation purposes. At the POD, applicant had previously constructed a small lined impoundment basin (same POD as WR 98-7402) that collected water from stream prior to being transported by a 6 inch pipe down-hill via gravity flow. The amount of water captured in basin meets the requirements for a 24-hr fill allowance for impoundment detailed in department administrative memorandum (Application Processing No. 73.), and is not considered a pond for this water right. The applicant's irrigation system incorporated a variety of different sprinkler head sizes operating at various pressure, making it difficult to determine an accurate diversion rate. The applicant provided a water flow computation worksheet deriving $217.15 \text{ gpm} = 0.48 \text{ cfs}$ for his 5 fields and 1 garden. A diversion rate of 0.48 cfs is less than the department standard of $0.02 \text{ cfs} \times 58.1 \text{ acres} = 1.2 \text{ cfs}$, and less than the 1.0 cfs that was permitted for. As such, the diversion rate of **0.48 cfs** will be applied to license.

At time of permit, applicant had applied for 138 acres in multiple fields on his properties. The applicant's intent was to add irrigated acreage not accounted for on previous water rights issued to applicant. At time of field exam, a detailed sketch was developed showing areas being irrigated. During licensing review, arcmap was used with the water right license POU layer active, and irrigated acres not accounted for on the applicants other WRs were traced out equaling 100 acres. Annual volume equals $58.1 \text{ acres} \times 3.0 \text{ afa} = 174.3 \text{ af}$, but as the applicant uses a surface water source, there is no maximum diversion volume applied to this water right.

Condition 26A and WB9 were removed from license. Condition F06 was added describing WR 98-7875 and WR 98-7402 using the same POD. Condition X35 was added to describe irrigation acreage limits: Rights 98-117A, 98-117B, 98-7402, 98-7876, and 98-7875 when combined shall not exceed the irrigation of 231.5 acres. A second condition X35 was added to describe diversion rate limitations: Rights 9-7875 and 98-7402, when combined shall not exceed a diversion rate of 1.00 cfs. All other conditions from permit will remain on license. WR 98-7402 has the same applicant, and does not overlap POU areas for this water right, but has an overlap in POD from which concerns for overlap have been mitigated by afore mentioned condition X35. WR 98-7750 overlaps this water right's POU, uses ground water by Cabinet Mountain Water District, but not associated with the applicant's property and of no concern for overlap.

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	04/01 to 10/31	0.48 CFS

Totals: 0.48 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

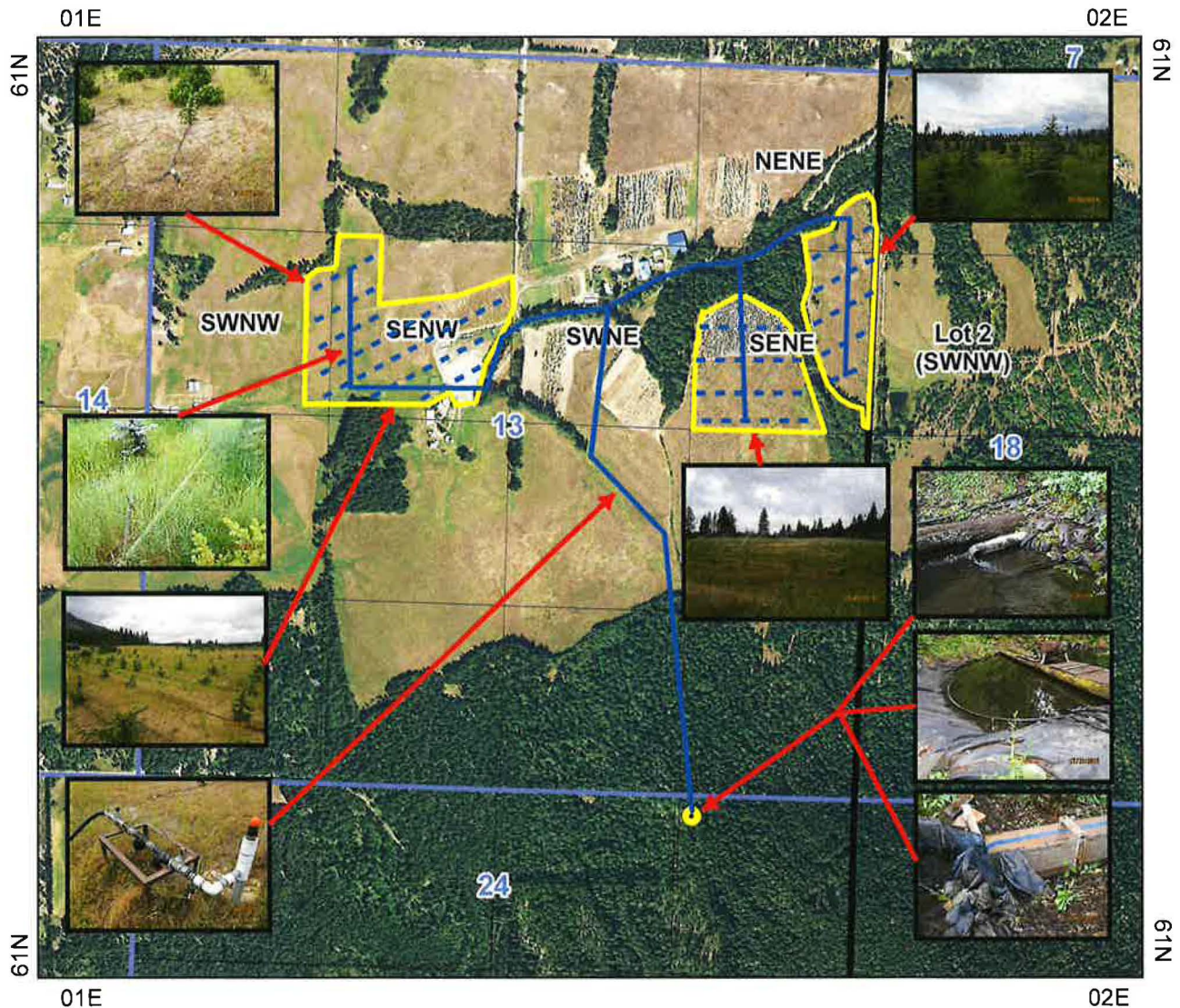
I. AUTHENTICATION

Luke Bates - Water Resource Agent

Field Examiner's Name Adam Fink Date 5/19/2020
 Reviewer [Signature] Date 5/19/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
98-7875

IRRIGATION system diagram.



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

0 0.15 0.3 0.6 Miles



ERIC E. MADSON COMBINED IRRIGATION ACREAGE BY WATER RIGHT

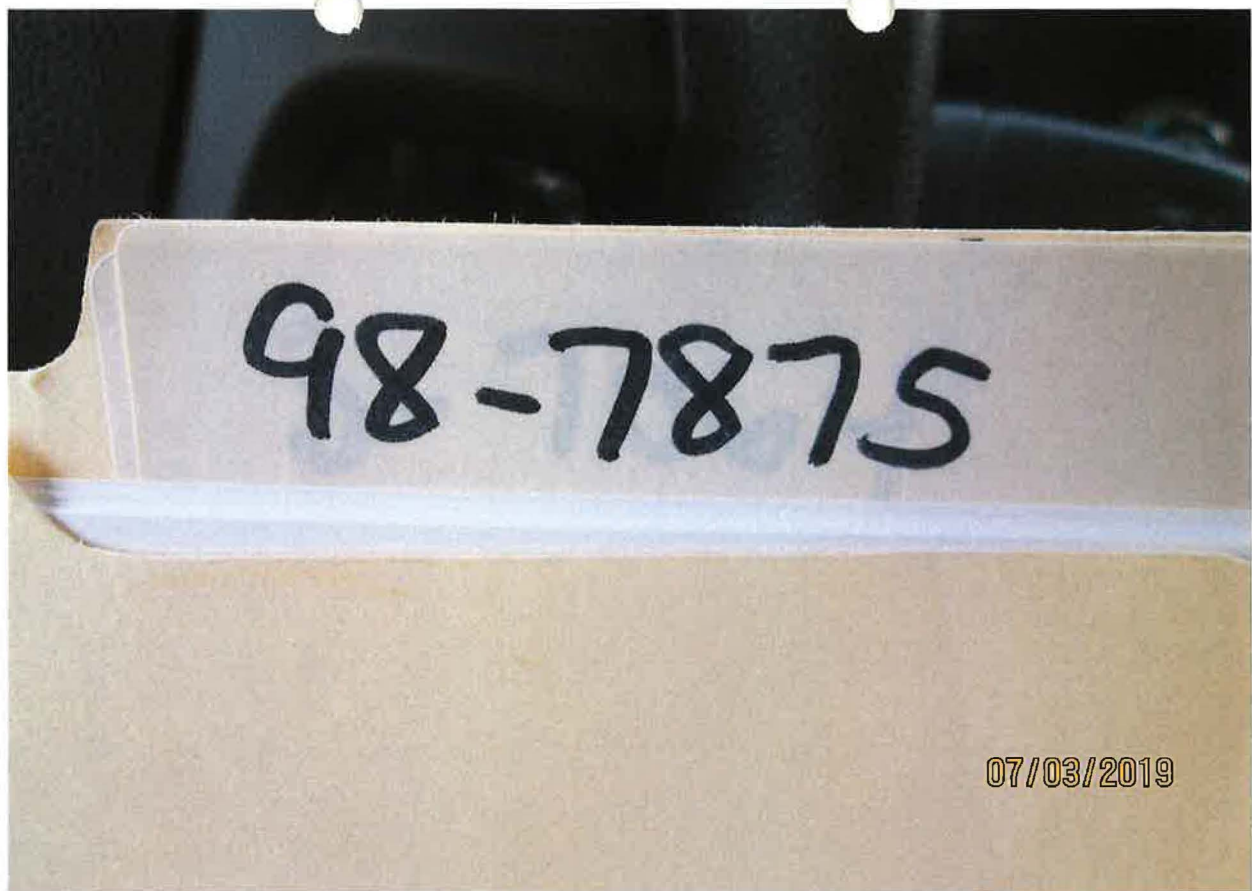
Water Right	Source	Source QQ	NENE (ac)	NWNE (ac)	SWNE (ac)	SENE (ac)	NENW (ac)	NWNW (ac)	SWNW (ac)	SENW (ac)	NESW (ac)	NWSW (ac)	SWSW (ac)	SESW (ac)	NESE (ac)	NWSE (ac)	SWSE (ac)	SESE (ac)	WR Total
98-117 A	Unnamed Stream	SESE		2	8														10
98-117 B	Cow Creek	NWSE, SWSE, SWNE			9										6	16			31
98-7402	Unnamed Stream	NENE	15	25	10		26	22		2									100
98-7876	Multiple			5	17										21	31	4.6		78.6
98-7875	Unnamed Stream	NENE	3			27			4.1	24									58.1
Sub Totals (ac) by QQ			18	32	44	27	26	22	4.1	26	0	0	0	0	27	47	4.6	0	277.7

COMMENTS:

1. Yellow Highlighted cells equal new acreage added to pre-existing irrigation by Mr. Madson
2. All water rights owned by Mr. Madson = 277.7 acres, though overlap conditions limit him to the irrigation acreage of 231.5 acres
3. Greyed out areas have zero acreage appropriated to irrigaiton at time of WR 98-7875 issuance

Field	length	rows	divide by		Nozzle GPh	GPH	GPM
19	500	13	2	3250	0.47	1527.5	25.46
7C	600	2	2	600	0.47	282.0	4.70
							1809.5
15C	650	18	2	5850	0.47	2749.5	45.83
15A	250	35	2	4375	0.47	2056.3	34.27
							4805.8

		Spacing Feet		GPM	GPM	
19	15	1	40	600	7	105.0
garden	1	1	40		1.9	1.9
						106.9
						217.15



POD DIVERSION FROM CREEK



24HR CATCH BASIN AT POD



GRAVITY FED PIPE FROM CATCH BASIN AT POD



POU - IRRIGATION SYSTEM



IRRIGATION SYSTEM PRESSURE GAGE



IRRIGATION POU





IRRIGATION POU





IRRIGATION SYSTEM PIPING AT POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU

