

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 15-7377
Exam Date: 8/10/2020

1. Current Owner:
ERIC HARTVIGSEN PO BOX 53 MALAD ID 83252

2. Accompanied by: Eric Hartvigsen
Relationship to permit Holder: Same

3. SOURCE:

GROUND WATER

Method of Determination: Visual confirmation of well being source of water

B. OVERLAP REVIEW

1. Other water rights with the same place of use: **NO** Overlap. No canal shares on property.
2. Other water rights with the same point-of-diversion: **NO** Overlap

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼ NE¼, Sec. 29, Twp 14S, Rge 36E, B.M. ONEIDA County

Method of Determination: GPS during site visit, and ArcMap

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	
14S	36E	29		9.5			30.5			1.0									41.0

Total Acres: 41.0

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
- X 1:24,000 or greater.
- X Aerial Photo Attached (required for irrigation of 10+ acres).
- X Photo of Diversion and System Attached

4. 50 HP Pump to pivot and wheel lines.

D. FLOW MEASUREMENTS

An ultrasonic flowmeter measurement returned a consistent measurement of 1.98 cfs. This was measured in the only location on the pipe on which a transducer could be placed. The ultrasonic flowmeter encountered an error due to poor pipe-flow conditions (ie very turbulent).

A theoretical calculation was performed as a check. A 50 HP pump and a static water level of 71' (as reported on the well driller's log) returned a rate of 1.88 cfs. A pumping drawdown of the well was not noted on the well driller's log. In a worst-case scenario, if pumping drawdown were to be to the bottom of the well at 260', the well would still produce 0.87 cfs according to the theoretical calculation.

The best available evidence to the Department is that the system can divert between 0.87 cfs and 1.98 cfs, which is more than licensed rate of 0.82 cfs.

E. VOLUME CALCULATIONS

_____ Additional Computation Sheets Attached

1. Volume Calculations for irrigation:

$$V_{I.R} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 41 \text{ acres} \times 3.5 \text{ AFA} = 143.5 \text{ AF}$$

$$V_{D.R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.82 \text{ cfs} \times 1.9835 \text{ AF/cfs/day} \times 214 \text{ days} = 348.1 \text{ AF}$$

$$V = \text{Smaller of } V_{I.R} \text{ and } V_{D.R} = 143.5 \text{ AF}$$

2. Volume Calculations for Other Uses: N/A**F. NARRATIVE/REMARKS/COMMENTS**

This is a one pump to one pivot and handlines system.

G. PERMIT CONDITIONS: Application 15-7377 was protested. To settle the protests, Applicant agreed to a permit condition requiring the well to be sealed to the first confining layer and prohibiting perforations in the well casing between 0 and 120 feet below land surface. Well Drillers Report confirms that the well was not perforated between 0 and 120 feet below land surface and was sealed to a significant clay layer between 118 and 140 feet below land surface. Permit conditions were satisfied.

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	04/01 to 10/31	0.82 CFS	147.0 AF

Totals: 0.82 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 Cooper Fritz - Water Resource Agent, Senior

Field Examiner's Name _____ Cooper Fritz _____ Date _____

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 15-7377
 Examiner: Cooper
 Date of Field Exam: 8/10/2020

	Option 1	OPTION 2	OPTION 3
P/D No.:			
PUMP HORSEPOWER	50	50	
BOOSTER HORSEPOWER	0	0	
PUMPING LEVEL (ft)	260	71	
DISCHARGE PRESSURE	40	40	
FRICTION	0	0	
RATE OF FLOW (cfs)	0.87	1.88	
(gpm)	392.3	846.0	

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.

Examiners Notes:

Lift was taken from well log. Hp was found during site visit. A standard psi for domestic use of 40 to 60 psi was used to estimate the pressure against the pump.

15-7377 Place of Use and Point of Diversion at Licensing



2017 Imagery

Legend

Water Right POD

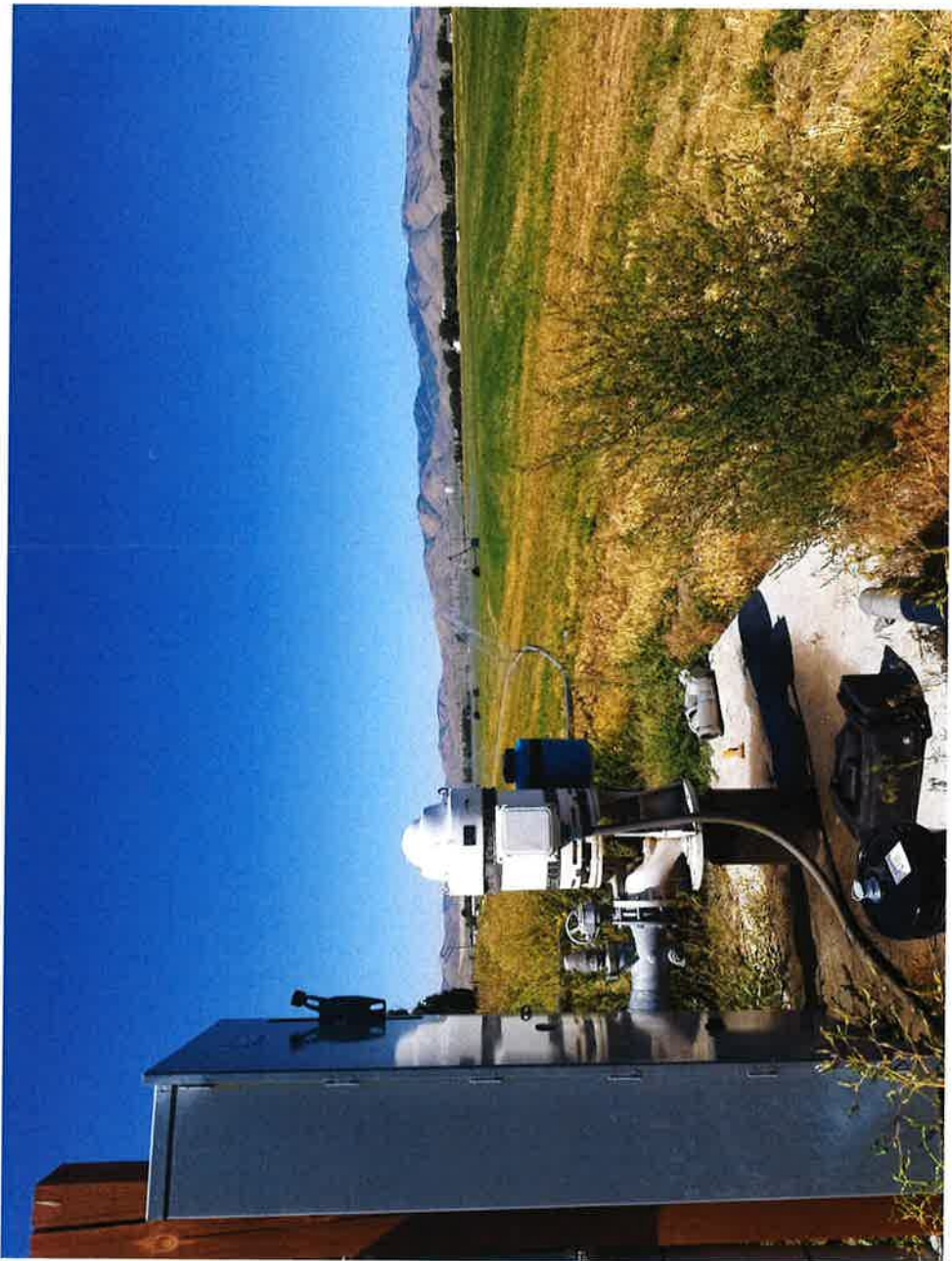
Water Right POU

Township/Range

Sections

QQ





B.M.R. USA

B. M. R. ELECTRIC MOTOR CORPORATION

HIGH EFFICIENCY VHS WITH NON REVERSE RATCHET ASSEMBLY

MODEL: MS-14S-WP1-MF-16	FRAME: 325 TP	ENCLOSURE:	TYPE: W.P1
HP: 5.0	VOLTS: 480	PHASE: 3	HZ: 60
AMPS: 8.0	S.F. 1.15	DESIGN: B	CODE: G
CONTINUOUS DUTY	50	MAX AMB: 40 °C	NEMA EFF: 94.5
UPPER BEARING: 72216	LOWER BEARING: 6213	DOWNTHrust: 5500	
TOOL CAPACITY: 3-E	OTS: 16.5	P-BASE: 16.5	SERIAL: 9000904

ALL LOWER GUIDE BEARINGS ARE PRELUBRICATED WITH POLYUREA GREASE



Kansas City MS 66106



State of Idaho
Department of Water Resources

Permit to Appropriate Water

NO. 15-07377

Priority: June 27, 2014

Maximum Diversion Rate: 0.84 CFS

This is to certify, that ERIC HARTVIGSEN
PO BOX 53
MALAD ID 83252

has applied for a permit to appropriate water from:

Source: GROUND WATER

and a permit is APPROVED for development of water as follows:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>RATE OF DIVERSION</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	04/01 to 10/31	0.84 CFS	147.0 AF

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NW¼NE¼ Sec. 29 Twp 14S Rge 36E, B.M. ONEIDA County

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
14S	36E	29		10.0			31.0		1.0										42.0

Total Acres: 42

CONDITIONS OF APPROVAL

1. Proof of application of water to beneficial use shall be submitted on or before **January 01, 2020**.
2. Subject to all prior water rights.
3. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
4. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 3.5 afa per acre at the field headgate for irrigation of the place of use.
5. Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department.
6. Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control.

State of Idaho
Department of Water Resources
Permit to Appropriate Water
NO. 15-07377

7. To prevent injury to prior water rights appropriating water from the underlying shallow aquifer, the well used as a point of diversion for this water right shall be constructed and maintained with unperforated casing and sealed into the first significant confining layer located 120 feet or more below ground surface.

This permit is issued pursuant to the provisions of Section 42-204, Idaho Code. Witness the signature of the Director, affixed at Boise, this 22nd day of December, 20 14.


for GARY SPACKMAN
Director



IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D 0068536Drilling Permit No. 15-7277

Water right or injection well # _____

2. OWNER: Eric Harvigian

Name _____

Address P.O. Box 53City Maia State ID Zip 83252

3. WELL LOCATION:

Twp. 14 North ☐ or South ☒ Rge. 36 East ☒ or West ☐Sec. 29 1/4 NW 1/4 NE 1/4Gov't Lot _____ County OneidaLat. 42 ° 11.049 (Deg. and Decimal minutes)Long. -112 ° 16.488 (Deg. and Decimal minutes)

Address of Well Site _____

City _____

Lot _____ Blk. _____ Sub. Name _____

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection☐ Other _____

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Mud Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
<u>Bentonite</u>	<u>0</u>	<u>38</u>	<u>42 bags</u>	
<u>Cement</u>	<u>120</u>	<u>135</u>	<u>30 bags</u>	

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>12"</u>	<u>0</u>	<u>137</u>	<u>250</u>	<u>Steel</u>	☒	☐	☐	☒
<u>10"</u>	<u>0</u>	<u>260</u>	<u>250</u>	<u>Steel</u>	☒	☐	☐	☒

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 137 + 260

9. PERFORATIONS/SCREENS:

Perforations ☒ Y ☐ N Method MachineManufactured screen ☐ Y ☐ N Type _____

Method of installation _____

From (ft)	To (ft)	Slot size	Number/R	Diameter (nominal)	Material	Gauge or Schedule
<u>140</u>	<u>160</u>	<u>2 1/2"</u>	<u>360</u>	<u>10"</u>	<u>Steel</u>	<u>250</u>
<u>175</u>	<u>215</u>	<u>2 1/2"</u>	<u>720</u>	<u>10"</u>	<u>Steel</u>	<u>250</u>
<u>220</u>	<u>255</u>	<u>2 1/2"</u>	<u>540</u>	<u>10"</u>	<u>Steel</u>	<u>250</u>

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☐ N Type _____

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☐ N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 77 Static water level (ft) 71'Water temp. (°F) 54° Bottom hole temp. (°F) _____

Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)

Test method:

Pump	Boiler	Air	Flowing artesian
☐	☐	☐	☐

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>16"</u>	<u>0</u>	<u>25</u>	<u>Brown Clay</u>		☒
<u>16"</u>	<u>25</u>	<u>40</u>	<u>Brown Clay</u>		☒
<u>12"</u>	<u>40</u>	<u>85</u>	<u>Brown Clay & Gravel</u>		☒
<u>12"</u>	<u>77</u>	<u>85</u>	<u>Gravel Brown Clay</u>	☒	
<u>12"</u>	<u>85</u>	<u>90</u>	<u>Brown Clay</u>		☒
<u>12"</u>	<u>90</u>	<u>95</u>	<u>Gravel</u>	☒	
<u>12"</u>	<u>95</u>	<u>103</u>	<u>Brown Clay</u>		☒
<u>12"</u>	<u>103</u>	<u>118</u>	<u>Gravel & Water</u>	☒	
<u>12"</u>	<u>118</u>	<u>135</u>	<u>Brown Clay</u>		☒
<u>16"</u>	<u>120</u>	<u>135</u>	<u>Brown Clay</u>		☒
<u>12"</u>	<u>135</u>	<u>180</u>	<u>Brown Clay</u>		☒
<u>10"</u>	<u>140</u>	<u>163</u>	<u>Gravel</u>	☒	
<u>10"</u>	<u>163</u>	<u>175</u>	<u>Brn Clay</u>		☒
<u>10"</u>	<u>175</u>	<u>214</u>	<u>Gravel</u>	☒	
<u>10"</u>	<u>214</u>	<u>218</u>	<u>Brown Clay & Gravel</u>		☒
<u>10"</u>	<u>218</u>	<u>255</u>	<u>Gravel</u>	☒	
<u>10"</u>	<u>255</u>	<u>259</u>	<u>Brown Clay</u>		☒
<u>10"</u>	<u>259</u>	<u>260</u>	<u>Gravel</u>	☒	

RECEIVED

FEB 08 2016

Department of Water Resources
Eastern RegionCompleted Depth (Measurable): 260'Date Started: 10-19-15 Date Completed: 10-29-15

14. DRILLER'S CERTIFICATION:

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name MWWD Co. No. 5413Principal Driller Michael Francis Date 11-17-15Driller Alison Frandon Date 11-17-15

Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.