

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-32827

Exam Date: 10/22/2012

1. Current Owner: THE WILLIAM T MURRAY AND JUDITH C MURRAY TRUST
6784 HOLLILYNN DR
BOISE ID 83709
(208)362-3991
2. Accompanied by: Bill Murray
Phone No: Same
Address: Same
Relationship to Permit Holder: Trustee

3. SOURCE

GROUND WATER

TRIBUTARY

N/A

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: None

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

GROUND WATER

Lt 3 (NW1/4SW1/4)

Sec. 7, Twp 02N, Rge 02E, B.M.

ADA County

Method of Determination: GPS Location N43° 31.383' W116° 16.140' Garmin model GPSmap 76 Datum NAD 83

2. PLACE OF USE:

<u>PLACE OF USE:</u>			IRRIGATION																
Twp	Rge	Sec	NE				NW				SW				SE				
02N	02E	7	<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>
Total Acres:			3.0								2.0 1.0 L 3								3.0

PLACE OF USE:

<u>PLACE OF USE:</u>			STOCKWATER																
Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<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>	
02N	02E	7									X	X							
												L 3							

Method of Determination: Bing (2011) Aerial Photography w/ field verification.

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

<u>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>
N/A	unknown submersible	5	F88 27-0520	Red Jacket	Model 17DC – 1.5" Discharge

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

D. FLOW MEASUREMENTS1. **Measurement Equipment**

Measurement Equipment	Type	Make/Model No.	Serial No.	Size	Calib. Date
No physical measurement @ exam	N/A	N/A	N/A	N/A	N/A

See Flow Calculations Section below for Theoretical HP Equation & Sprinkler System Flow Estimations.

2. Measurements: Piping from well not suitable (buried) for polysonic measurement.

E. FLOW CALCULATIONS

_____ Additional Computation Sheets Attached

Measured Method: Theoretical HP Equation:

$$HP = 5$$

$$PSI = 60 \text{ (est. closed pipeline irrigation system)}$$

$$Z = 220 \text{ ft [pump @ 245 ft – pumping level 220 ft with discharge 40 gpm per owner]}$$

$$Q = (8.8 \times 0.7 \times HP) / [Z + (2.31 \times PSI)] = (8.8 \times 0.7 \times 5) / [220 + (2.31 \times 60)] = \mathbf{0.09 \text{ cfs}}$$
 est. capacity of pumping system

Measured Method: Sprinkler System Estimation:

$$\# \text{ of lines @ one time} = 1$$

$$\# \text{ of sprinkler heads @ one time} = 7 \text{ heads}$$

$$\text{Type of sprinklers} = \text{unknown brand oscillating sprinklers}$$

$$\text{Nozzle size} = 5/32" \text{ rated for } 5.65 \text{ gpm @ } 60 \text{ psi (Per Appendix A Exhibit 9 Field Exam handbook)}$$

$$Q = \# \text{ heads} \times \text{gpm} = 7 \times 5.65 \text{ gpm} = 39.55 \text{ gpm} = \mathbf{0.09 \text{ cfs}}$$
 est. discharge from sprinklers

$$\text{Theoretical HP Equation est. capacity of pumping system} = \mathbf{0.09 \text{ cfs}}$$

$$\text{Diversion rate based on sprinklers @ 60 psi} = \mathbf{0.09 \text{ cfs}}$$

$$\text{Permitted Rate} = \mathbf{0.14 \text{ cfs}}$$

$$\text{Beneficial Use Limit} = 0.09 \text{ cfs (irrigation 3.0 ac @ } 0.03 \text{ cfs/ac)} + 0.02 \text{ cfs (stockwater – 4 horses)} = \mathbf{0.11 \text{ cfs}}$$

$$\text{Proof of Beneficial Use fee paid} = \$50.00 = \text{up to } \mathbf{0.20 \text{ cfs}}$$

$$\text{Recommend Beneficial Use Limit Rate} = \mathbf{0.11 \text{ cfs (0.09 cfs irrigation + 0.02 cfs stockwater)}}$$

Highest rate allowable based on beneficial use limit 0.10 cfs recommended. Theoretical HP Equation est. 0.09 cfs $\geq$ 75% (82%) of recommended rate.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3.0 \text{ ac} \times 4.5 \text{ afa/ac} = \mathbf{13.5 \text{ afa}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.09 \text{ cfs} \times 260 \text{ days} \times 1.9835 = \mathbf{46.4 \text{ afa}}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 13.5 \text{ afa} < 46.4 \text{ afa} = \mathbf{\text{Recommend } 13.5 \text{ afa}}$$

2. Volume Calculations for Stockwater:

$$V_R = (\# \text{ \& type of head}) \times (\text{Stockwater Requirement}) = 4 \text{ horses} \times 0.0134 \text{ afa/head (@ } 12 \text{ gpd/head)} = \mathbf{0.1 \text{ afa}}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days}) \times 1.9835 = 0.02 \text{ cfs} \times 365 \text{ days} \times 1.9835 = \mathbf{14.5 \text{ afa}}$$

$$V = \text{Smaller of } V_R \text{ and } V_{D.R.} = 0.1 \text{ afa} < 14.5 \text{ afa} = \mathbf{\text{Recommend } 0.1 \text{ afa}}$$

G. NARRATIVE/REMARKS/COMMENTS**SYSTEM DESCRIPTION:**

System consists of a well with a 1.5" discharge line piped to pump room with pressure tank from which a 2" line pipes water through a sand filter to sprinkler lines and a 1/2" line pipes water to a heated stockwater tank with a float mechanism to maintain water level. The sprinkler system consists of 9 stations/lines, 8 lines with 7 sprinklers heads with 5/32" nozzles and 1 drip line. 8 stations used to irrigate pasture and drip line station irrigates trees along western edge of property. Exam report includes well log believed to be log for POD (WC Well ID # 384333). This well was drilled for the original property owner (Melford Terrell) in 1976. Legal description on log does not match location of well, but location information on well logs known to be inaccurate on occasion. However, Mr. Murray could not confirm that previous property owner did NOT have a well drilled in 40 ac-tract just north of property. Therefore, I can't be 100% positive this is the well log, but based on info owner provided regarding well depth and original owner it seems highly likely it is the correct log thus included in this report.

IRRIGATION AND STOCKWATER PRACTICES/USES:

Pasture area irrigated with sprinkler system described above. Only 1 station/line (7 sprinkler heads) run at a time. Pasture grass grown for owner's 4 horses. Horses watered via one heated stock tank with direct water line and a few portable troughs in larger pasture areas. Lawn and small landscaped areas around house along with in-house water from a different well (newer well drilled by Bill Murray - WC Well ID # 299516) with different diversion works.

COMPLIANCE WITH PERMIT CONDITIONS:

Permit conditioned that stockwater use is for 15 range cattle. The permit application itself does not identify the type of animals, but rather states stockwater use is for "5 head". It does not appear this discrepancy was clarified prior to approval of the permit. Considering the standard amounts, both rate and volume, are the same for horses and range cattle and the owner has never had more than 4 horses, the owner has complied with the intent (if not the letter) of the condition. The POU Holly Estates Lot 5 Blk 1 property description included in condition of permit is correct per Ada Co. taxlot records. To the best of my knowledge, owner has complied with all other permit conditions.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
IRRIGATION	03/01 to 11/15	0.09 CFS	13.5 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF
<u>Totals:</u>		0.11 CFS	13.6 AF

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 ☐ Other

I. AUTHENTICATION

Field Examiner's Name Angela M. Gorman Date 11/15/2012
 Reviewer _____ Date _____

Beneficial Use Field Report System Diagram & Map 63-32827

R02E

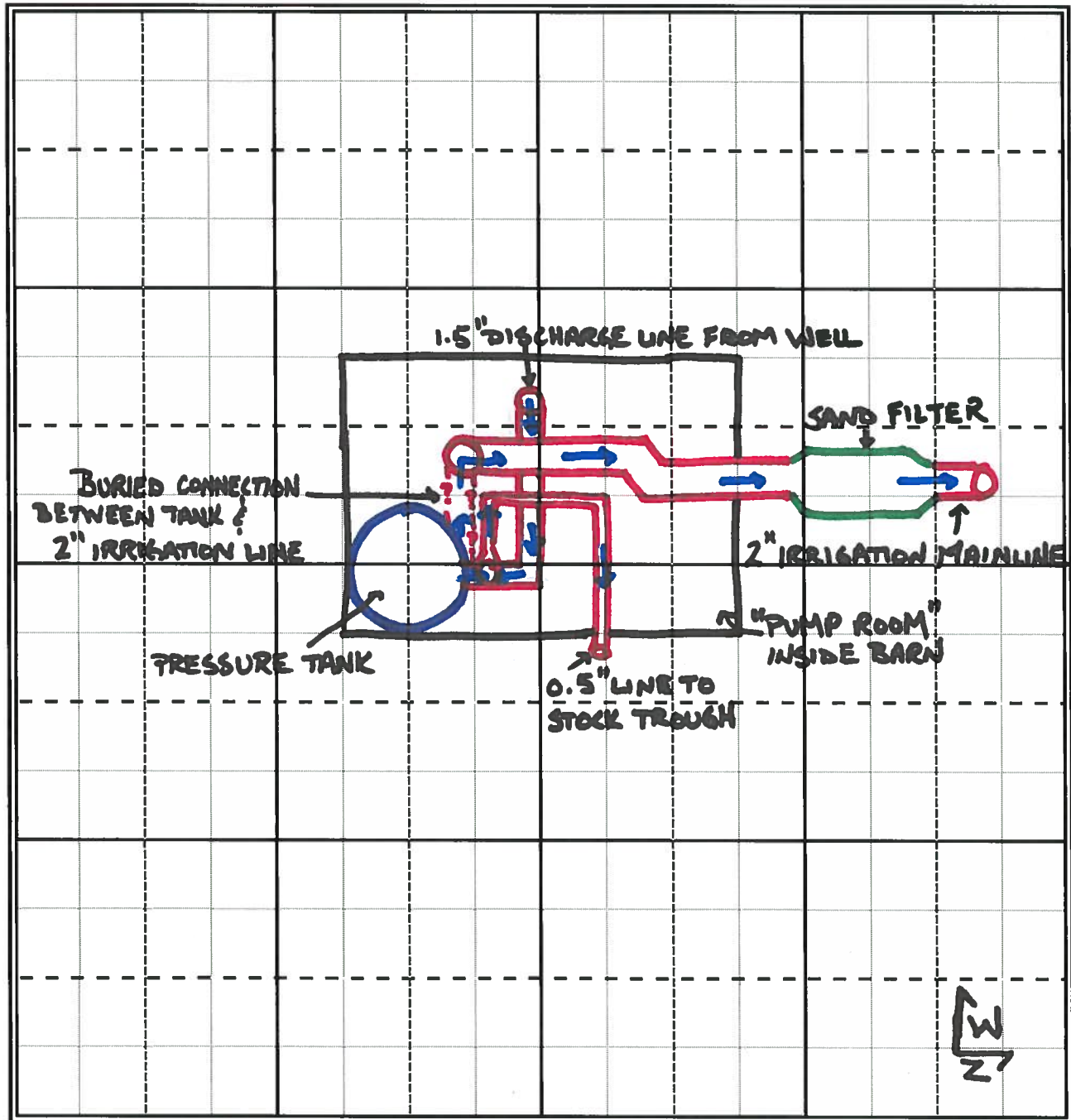


0 0.025 0.05 0.1 Miles

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



63-32827 Beneficial Use Field Report Diversion System Diagram



Not to Scale

USE TYPEWRITER OR
BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

State law requires that this report be filed with the Director, Department of Water Resources within 30 days after the completion or abandonment of the well.

RECEIVED
JUL 30 1976

1. WELL OWNER Name <u>Melford Terrell</u> Address <u>Cele Rd</u> Owner's Permit No. _____		7. WATER LEVEL Static water level <u>250</u> feet below land surface Flowing? ☐ Yes ☒ No G.P.M. flow _____ Temperature _____ ° F. Quality _____ Artesian closed-in pressure _____ p.s.i. Controlled by ☐ Valve ☐ Cap ☐ Plug																																																																																																																																									
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Abandoned (describe method of abandoning) _____		8. WELL TEST DATA ☒ Pump ☐ Bailor ☐ Other Discharge G.P.M. <u>50</u> Draw Down <u>0</u> Hours Pumped <u>2 weeks</u>																																																																																																																																									
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type) _____ ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection		9. LITHOLOGIC LOG <u>46691</u> <table border="1"><thead><tr><th rowspan="2">Hole Diam.</th><th colspan="2">Depth</th><th rowspan="2">Material</th><th colspan="2">Water</th></tr><tr><th>From</th><th>To</th><th>Yes</th><th>No</th></tr></thead><tbody><tr><td>10</td><td>0</td><td>10</td><td>Gravel</td><td></td><td></td></tr><tr><td></td><td>6</td><td>15</td><td>Sandy Clay</td><td></td><td></td></tr><tr><td></td><td>15</td><td>44</td><td>Gravel</td><td></td><td></td></tr><tr><td></td><td>44</td><td>49</td><td>Sand</td><td></td><td></td></tr><tr><td></td><td>49</td><td>80</td><td>Sand + Gravel</td><td></td><td></td></tr><tr><td></td><td>80</td><td>110</td><td>Sand</td><td></td><td></td></tr><tr><td></td><td>110</td><td>113</td><td>Gravel</td><td></td><td></td></tr><tr><td></td><td>113</td><td>120</td><td>Sand</td><td></td><td></td></tr><tr><td></td><td>120</td><td>140</td><td>Gravel</td><td></td><td></td></tr><tr><td></td><td>140</td><td>160</td><td>Sand + Gravel</td><td></td><td></td></tr><tr><td></td><td>160</td><td>175</td><td>Sand</td><td></td><td></td></tr><tr><td></td><td>175</td><td>190</td><td>Gravel</td><td></td><td></td></tr><tr><td></td><td>190</td><td>215</td><td>Sand + Gravel</td><td></td><td></td></tr><tr><td></td><td>215</td><td>220</td><td>Gravel</td><td></td><td></td></tr><tr><td></td><td>220</td><td>225</td><td>Sand</td><td></td><td></td></tr><tr><td></td><td>225</td><td>245</td><td>Brown Sand</td><td></td><td></td></tr><tr><td></td><td>245</td><td>260</td><td>Rusty Sand + Gravel</td><td></td><td></td></tr><tr><td></td><td>260</td><td>266</td><td>Coarse Sand + Gravel</td><td></td><td></td></tr><tr><td></td><td>266</td><td>270</td><td>Gravel</td><td></td><td></td></tr><tr><td></td><td>270</td><td>285</td><td>Clay</td><td></td><td></td></tr><tr><td></td><td>285</td><td>290</td><td>Sand</td><td></td><td></td></tr></tbody></table>		Hole Diam.	Depth		Material	Water		From	To	Yes	No	10	0	10	Gravel				6	15	Sandy Clay				15	44	Gravel				44	49	Sand				49	80	Sand + Gravel				80	110	Sand				110	113	Gravel				113	120	Sand				120	140	Gravel				140	160	Sand + Gravel				160	175	Sand				175	190	Gravel				190	215	Sand + Gravel				215	220	Gravel				220	225	Sand				225	245	Brown Sand				245	260	Rusty Sand + Gravel				260	266	Coarse Sand + Gravel				266	270	Gravel				270	285	Clay				285	290	Sand		
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4. METHOD DRILLED ☒ Cable ☐ Rotary ☐ Dug ☐ Other																																																																																																																																											
5. WELL CONSTRUCTION Diameter of hole <u>10</u> inches Total depth <u>290</u> feet Casing schedule: ☒ Steel ☐ Concrete Thickness <u>250</u> inches Diameter <u>10</u> inches From <u>18</u> feet To <u>290</u> feet Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch Size of perforation _____ inches by _____ inches Number _____ From _____ To _____ _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet _____ perforations _____ feet _____ feet Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>18'</u> Material used in seal ☐ Cement grout ☒ Pudding clay ☐ Well cuttings Sealing procedure used ☐ Shurry pit ☐ Temporary surface casing ☐ Overbore to seal depth																																																																																																																																											
6. LOCATION OF WELL Sketch map location must agree with written location. <u>(63)</u> Subdivision Name _____ Lot No. _____ Block No. _____ County <u>Ada</u> Section <u>7</u> T. <u>2</u> N. R. <u>2</u> E.		10. Work started <u>5-3-76</u> finished <u>5-15-76</u>																																																																																																																																									
		11. DRILLERS CERTIFICATION Firm Name <u>BU Pump & Drilling</u> Firm No. <u>207</u> Address <u>3950 S. Garden</u> Date <u>7-8-76</u> Signed by (Firm Official) <u>Tom Adema</u> and (Operator) <u>Tom Adema</u>																																																																																																																																									

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

* Melford Terrell HOME OWNER PRIOR TO MR. MURRAY. TERRELL HAD WELL DRILLED THAT IS NOW USED FOR IRRIGATION UNDER 63-32827. LEGAL OF THIS LOG SW NW SEC 7, WHICH IS 40 AC TRACT TO NORTH OF NWSW SEC 7, WHERE WELL LOCATED. UNCERTAIN IF MR. TERRELL OWNED ANOTHER HOME @ TIME IN SWNW. CAN'T SAY 100% SURE THIS LOG IS CORRECT LOG FOR IRRIGATION/STOCKWATER SYSTEM UNDER WR 63-32827, BUT IT IS LIKELY. WHEN MR. MURRAY CHECKED PUMP - WELL DEPTH GIVEN TO HIM WAS 280 FT BUT STALL LEVEL GIVEN TO HIM (215 FT) DIFFERENT.

63-32827 Beneficial Use Field Report Photos



63-32827 Exam 10/22/2012: POD area. POD well buried within shrubbery approximately 15 ft from the new well (serves in-house domestic and lawn irrigation uses) in photo foreground facing north. Barn in photo background where “pump room” located.



63-32827 Exam 10/22/2012: Portion of POU pasture with one of four horses facing northwest.