

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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WATER RESOURCES

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 37-78461. Owner Robert M. Rosenthal and Marian R. RosenthalPhone No. (703) 522-2300Current address 1100 S Glebe Rd, Arlington VA 222092. Examiner's name Ernie Carlsen / Dave TuthillEXAM DATE 11/19/2012, 1/14/20133. Accompanied by Matt LangEmail langgang@cox.net

Address _____

Relationship to permit holder EmployeePhone No. (208) 720-10804. Source Ground water tributary to _____**B. OVERLAP REVIEW**1. Other water rights with the same place of use None2. Other water rights with the same source and point of diversion None**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

Ident. No.	Gov't Lot	1/4	1/4	1/4	Sec	Twp	Rge	County	Method of Determination/Remarks
			SW	NW	27	4N	18E	Blaine	GPS & Aerial Photo
			SW	NW	27	4N	18E	Blaine	GPS & Aerial Photo

2. Place(s) of Use: Method of determination ArcMap and Aerial Photo

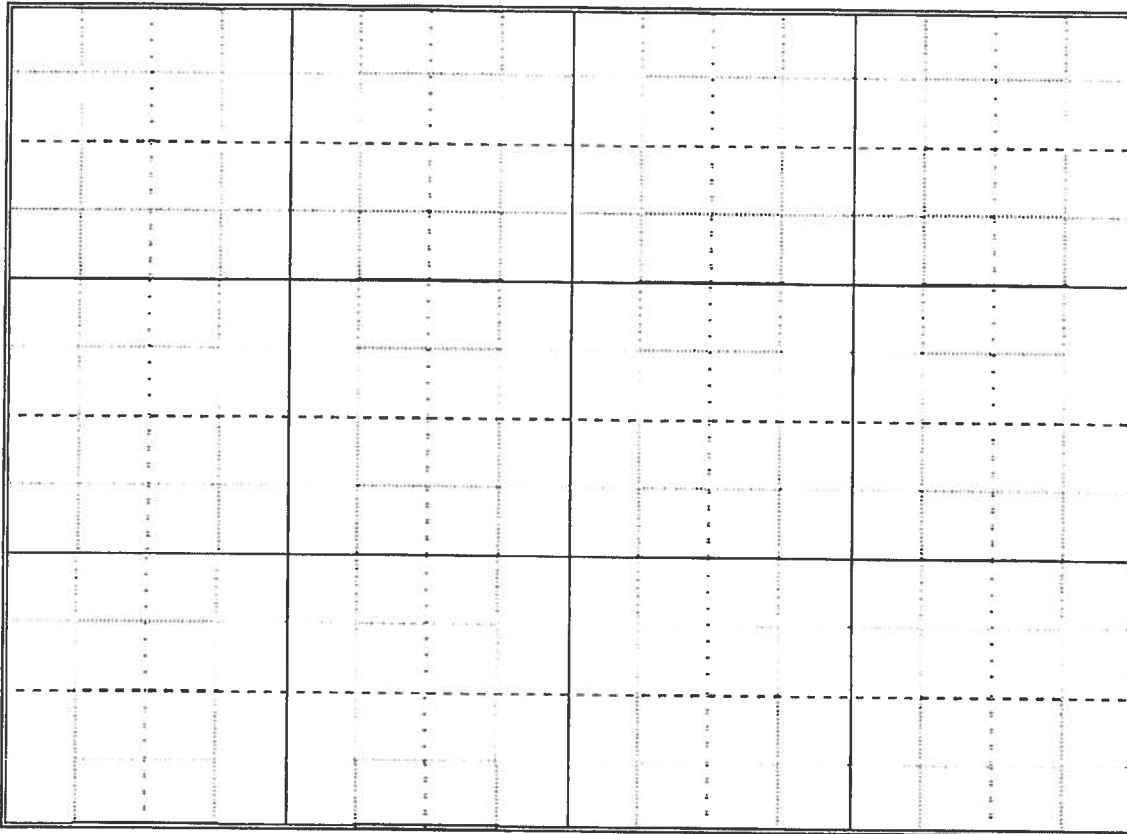
Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
4N	18E	27							0.87										0.87
		27							D/5										0.5
		27							F										

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3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate well size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☐ see attached.



Scale: 1" = _____

- ☐ Copy of USGS Quadrangle attached showing location(s) of point(s) of diversion and place(s) of use (required)
☒ Aerial photo attached (required for irrigation of 10+ acres)
☒ Photo of diversion and system attached

4.

Well or Diversion Identification No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
Well #1		2		Berkley	
Well #2		1		Berkley	

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

D. FLOW MEASUREMENTS

1.

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

2. Measurements: _____

Well #1 known as the house well is equipped with a 2 HP submersible Berkeley pump set at 378 ft. Static water level in the well is 32' with 230 ft. of draw down resulting in 260 ft of lift with open discharge into 3000 gallon storage vault. According to the pump curve in Figure #1 this pump will produce 14 gpm or 0.03 cfs under these (Continued below)

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2. Measurements: (Continued) conditions. Well #2 known as the pond well is equipped with a 1 HP submersible Berkeley pump set at 294 ft. Static water level is at ground level with expected draw down of 220 ft. Water produced by the well gravity flows down the hill in a pipe and open discharges in the the fire pond. The pump curve in Figure #1 reveals the pump will produce 12.5 gpm or 0.028 cfs under these conditions.

NARRATIVE/REMARKS/COMMENTS

The delivery systems for Wells #1 and #2 are not interconnected and the two wells provide water for different uses. Figure # 2 shows the location of the wells, fire pond, and irrigated area surrounding the home.

Well #1 located at lat/long coordinates N 43° 39.147', W 114° 18.276', and pictured in Figure #3, discharges water into three interconnected 1000 gallon storage vaults all below grade. A sump pump installed in the vaults diverts water into the small aesthetic pond (10'x30'x4') pictured in Figure #3 and is also connected to the system of pipes pictured in Figure #4 that provide water to the house and the pressurized sprinkler irrigation system. Initially, well #1 was the sole source of water for inhouse domestic use, yard irrigation and water for the aesthetic pond. Subsequently it was arranged with Sun Valley Water and Sewer District to be the primary supplier of water for the residence and irrigation and well #1 became a back up supply for this water. Irrigation is being recommended as a permissible place of use covering 1.37 acres but limited to 0.87 acres. A shape of the 1.37 acres irrigated is illustrated on Figure #4. The irrigation of the remaining 0.5 acre and aesthetic purpose is to be included in the domestic use as provided by Idaho Code, Section 42-111.

Water pumped from Well #2, located at lat/long coordinates N 43° 39.062', W 114° 18.376', is piped downhill and discharges into a pond with the primary purpose of providing water for fire protection. Both well #2 and the location of the fire pond relative to the well are pictured in Figure #5. The pond is circular with a diameter of 50 feet and a fairly flat bottom sloping up along the edge, originally it was excavated to a depth of 8 feet with the average depth from side to side of around 6.8 feet. With these dimensions, volume of the pond is 0.31 af. The pond is lined to minimize seepage losses but according to ET Idaho website evaporation on a pond this size is 0.06 afy. Adding this volume to the 0.31 af increases the annual volume to 0.37 af needed to keep the pond full year round.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

Narrative : (continued)

Attachments: Figure #1: Pump curves. Figure #2: Aerial view of PODs and POUs. Figure #3: Photo of Well #1 with aesthetic pond in background. Figure #4: Photo of connection between discharge pipe from vault and supply for inhouse domestic and sprinkler irrigation system. Figure #5: Photo of well #2 with fire pond in background.

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Theoretical calculations.**G. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = (0.87 \text{ ac}) (3.5 \text{ af/ac}) = 3.0 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = (0.03 \text{ cfs}) (199 \text{ days}) (1.9835 \text{ af/day}) = 11.8 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 3.0 \text{ af}$$

2. Volume Calculations for Other Uses:

Domestic use = 1.2 af per IDWR standard.

Fire Protection = volume of pond / cubic feet per acre foot + evaporation

$$(3.14) (25 \text{ ft} \times 25 \text{ ft}) (6.8 \text{ ft}) / 43,560 \text{ cf/af} = 0.31 \text{ af} + 0.06 \text{ af} = 0.37 \text{ af}$$

H. RECOMMENDATIONS

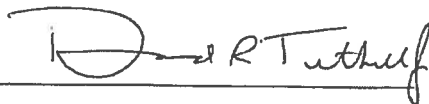
1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion		Annual Volume	
	From	To	Q (cfs)		V (afa)	
irrigation	4/15	10/31	0.03		3.0	
domestic	1/1	12/31	0.03		1.2	
fire protection	1/1	12/31	0.03		0.37	
Totals:			0.03	0.03	4.2	0.37

2. Recommended Amendments

☒ Change P.D. as reflected on page 1☒ Add P.D. as reflected on page 1☐ None☒ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☐ Other**I. AUTHENTICATION**

Field Examiner's Signature



Date

2/4/2013

Reviewer

Date

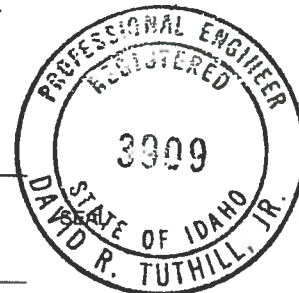


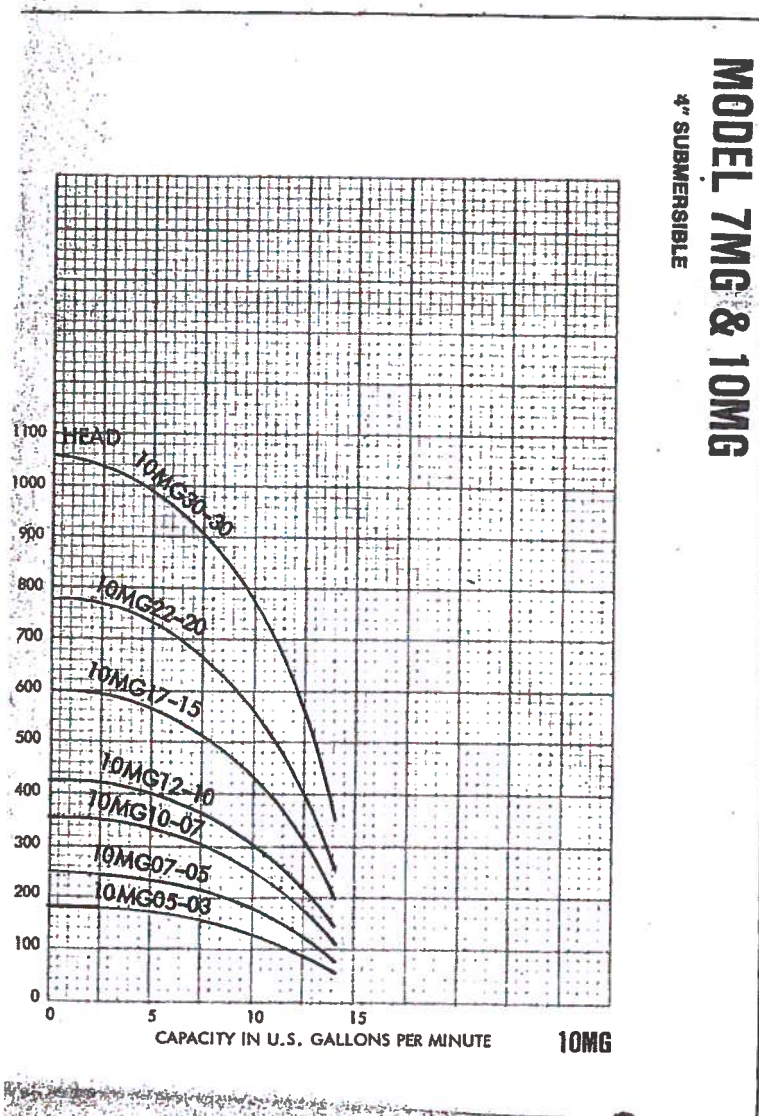
Figure #1:

Pump curves for well #1 and well #2.

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Well #1
10MG22-20 2HP
House well

Well #2
10MG12-10 1HP
Pond well

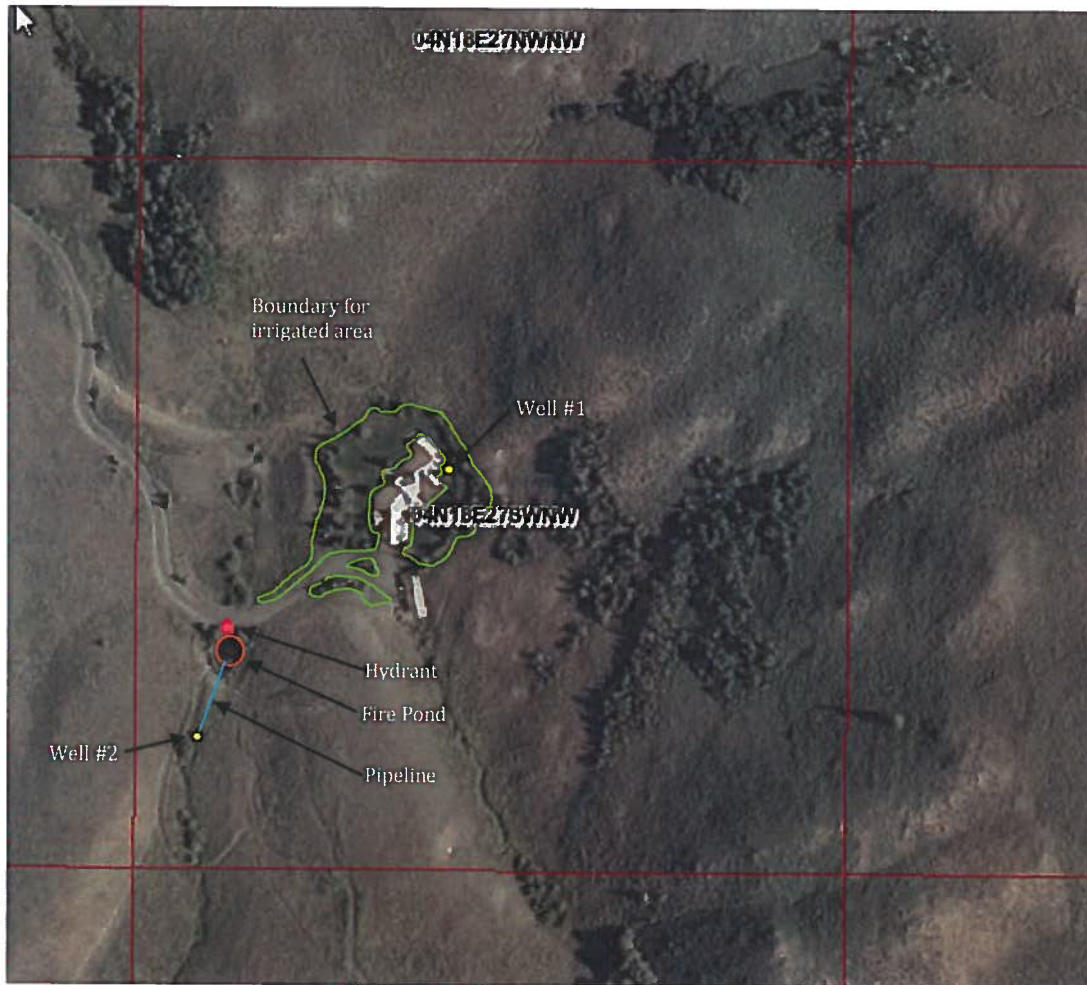
Figure #2:

Aerial view showing Points of Diversion and Places of Use

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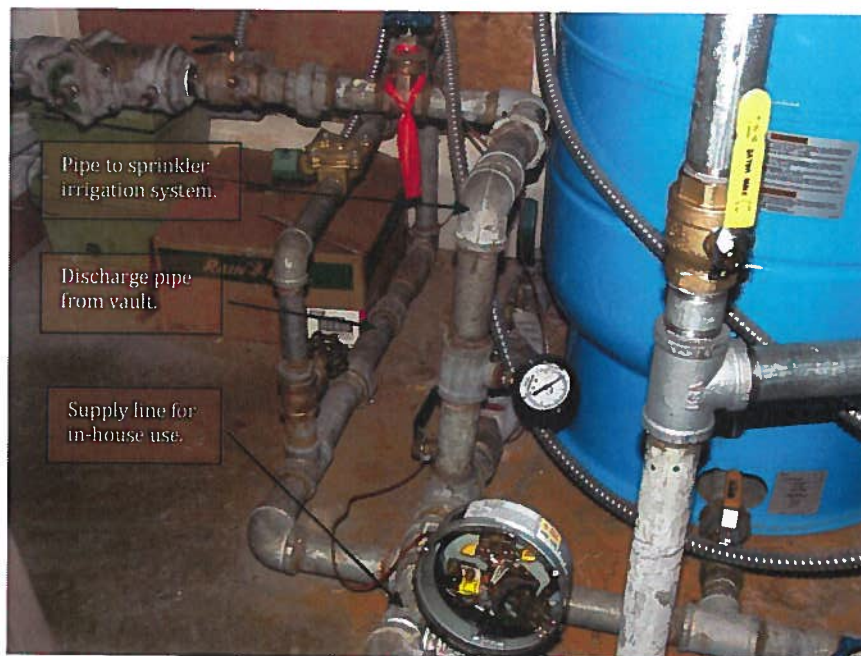
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**Idaho Water Engineering**
*Water Solutions*IDAHO DEPARTMENT OF
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Photo of well #1 with aesthetic pond in background

**Figure #4:**

Photo of pipe system connecting discharge pipe from vault and supply line for in-house use and sprinkler irrigation.



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Figure #5:

Photo looking down hill showing well #2 and fire pond in the center of photo.

