

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 36-16863

Exam Date: 7/20/2011

1. Current Owner: BETTY HARRAL
851 S 1975 E
HAZELTON ID 83335
(208) 212-1147
2. Accompanied by: Betty Harral
Phone No: SAA
Address: SAA
Relationship to Permit Holder: Same

3. SOURCE TRIBUTARY
WASTE WATER WILSON LAKE

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: 36-16754, 36-16755, 36-16874, 36-16901, and 36-16935.

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

WASTE WATER SE1/4NE1/4 Sec. 32, Twp 09S, Rge 20E, B.M.
JEROME County

Method of Determination: Aerial photography and 7/20/2011 field visit.

2.

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	Totals
09S	20E	32			X														

Method of Determination: Aerial photography and 7/20/2011 field visit.

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.

<u>Well or Diversion 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>
Pump System	Flotec	1.5	NA	Flotec	NA

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

D. FLOW MEASUREMENTS N/A**E. FLOW CALCULATIONS**

_____Additional Computation Sheets Attached

Measured Method:

Theoretical yield:

$$Q = \frac{8.8 \times (Hp) \times (Eff)}{H}$$

Where: Hp = 1.5 Hp (from 7/20/2011 site visit)

Eff = 60% (assumed)

H = elevation distance + 2.31 x operating pressure (measured elevation difference of 2.0 feet based on 7/20/2011 site visit and operating pressure of 50 psi based on lawn sprinkler literature obtained off of the internet).

H = 2.0 feet + 5 feet of estimated loss + (2.31 x 50 psi) = 122.5

$$Q = \frac{8.8 \times (1.5) \times (0.60)}{122.5}$$

Q = 0.06 cfs Rate exceeds permitted amount of 0.06 cfs
therefore use permitted rate of 0.04 cfs is recommended.

F. VOLUME CALCULATIONS

0.2 acres x 4 af/acre = 0.8 afa

G. NARRATIVE/REMARKS/COMMENTS

Application for Permit 36-16863 was filed on June 24, 2010 for the diversion of 0.04 cfs for domestic use associated with pumping waste water for the irrigation of a yard in connection with a home. Permit 36-16863 was approved on August 24, 2010 and proof of beneficial use was filed on August 27, 2010.

The system consists of waste water being diverted at the head gate over to the applicant's pump and irrigation system (as depicted in the field visit photos). Field visit photos and Aerial photos were used to determine lawn size of 0.2 acres. The pump size is 1.5 Hp with approximately 2 feet elevation difference in the water surface and the irrigation system with Rain Birds 2045A Maxi-Paw rotor pop-up sprinklers. Using this information and a reasonable assumed operating pressure for lawn sprinklers of 50 psi (obtained from literature on the internet) provides enough information to indicate that a theoretical estimate of diversion rate exceeds the permitted amount of 0.04 cfs. It is recommended that permit 36-16863 be licensed for domestic use with a diversion rate of 0.04 cfs and a volume of 0.8 afa

An overlap analysis was completed for the place of use and point of diversion. There are no other water rights associated with the place of use. There are other waste water rights associated with the point of diversion however they are diverted using separate systems.

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>
DOMESTIC	03/15 to 11/15	0.040 CFS	0.8 AF
<u>Totals:</u>		0.040 CFS	0.8 AF

2. Recommended Amendments

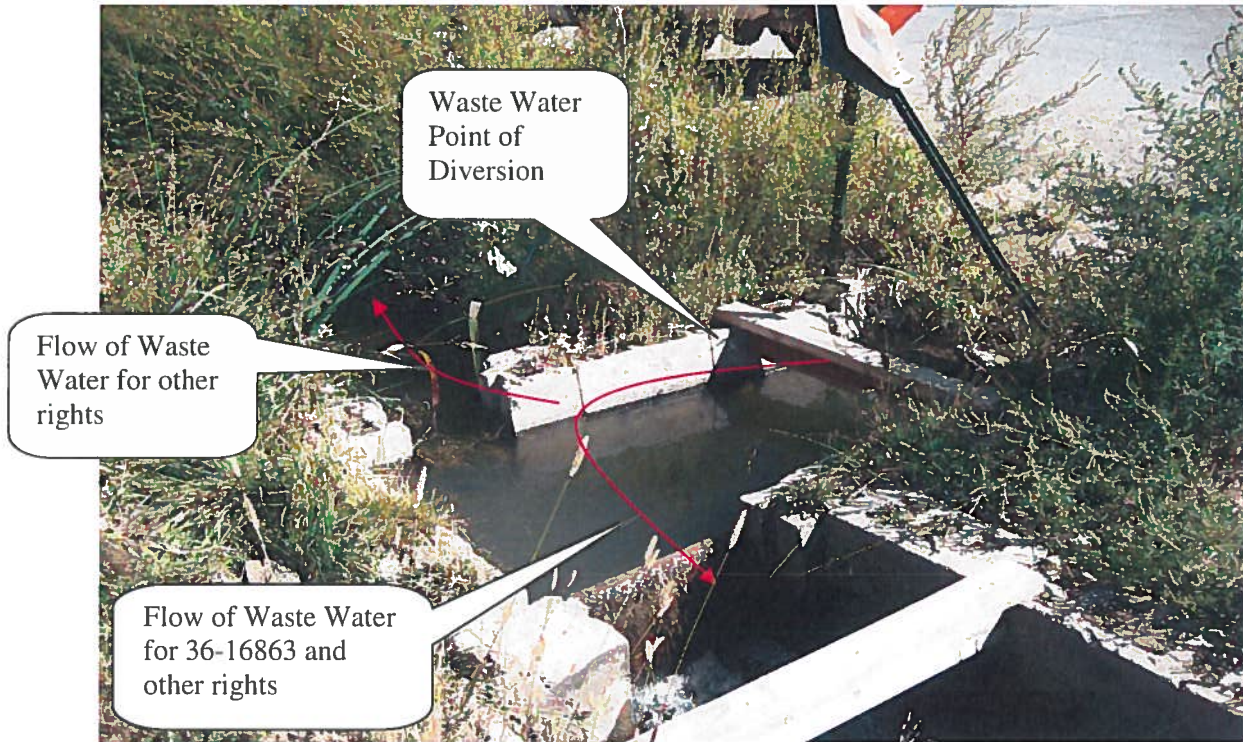
☐ Change P.D. as reflected above ☐ Add P.D. as reflected above ☒ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

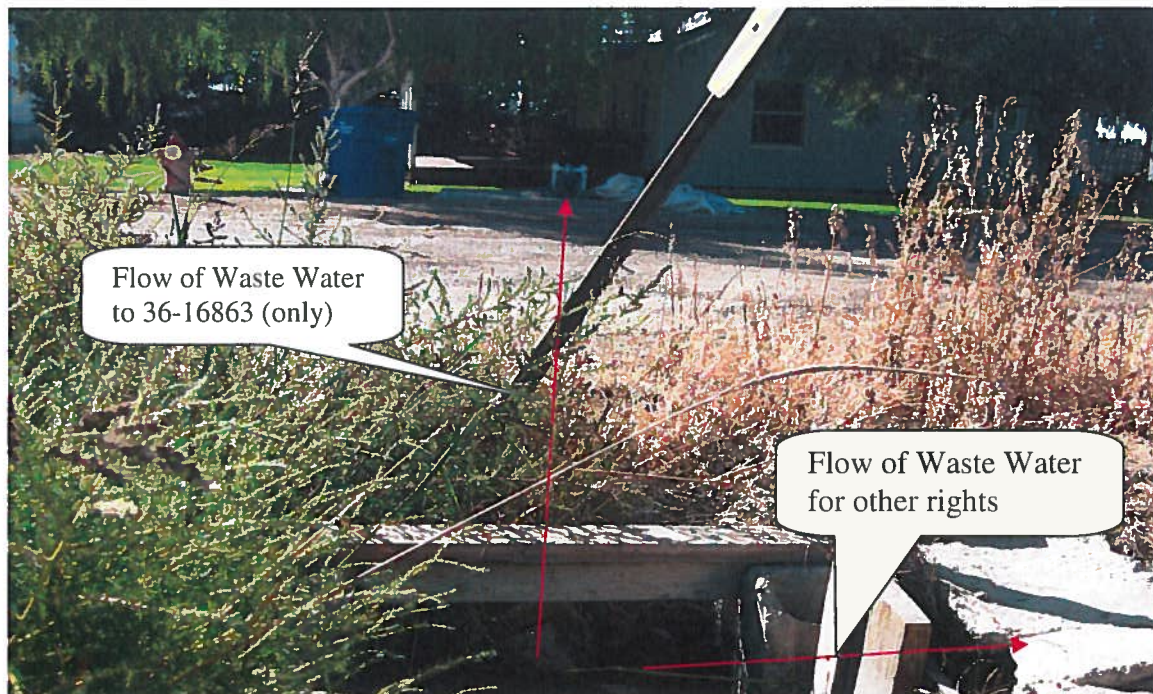
Field Examiner's Name Benny Walker Date 6/1/12
Reviewer [Signature] Date 6/8/12

36-16863 Waste Water Delivery System

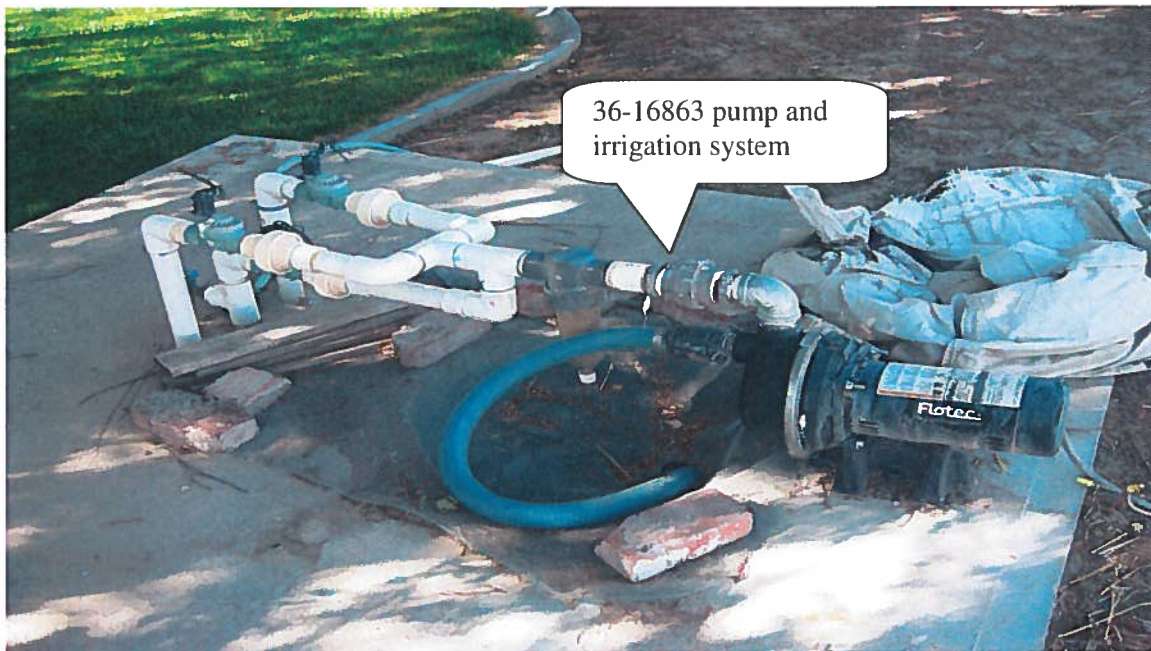


Above: Point of Diversion of Waste Water

Below: View from the point of diversion looking towards Waste Water flow to 36-16863 Irrigation System



Permit 36-16863



Above: View of 36-16863 Irrigation System

Irrigation Place of Use 36-16863



Above: View of Frontyard irrigation

Irrigation Place of Use 36-16863



Above: View of Eastside irrigation

Below: View of backyard and the Westside irrigation



36-16863 Point of Diversion & Place of Use Map



Above: View of location of Place of Use and Point of Diversion (Bing Map Aerial Photo)



2045A Maxi-Paw™ / 2045A-SAM

[More](#)

Full- or Part-Circle Impact Rotor Pop-Up Sprinklers

The Maxi-Paw's powerful throw permits maximum spacing and offers superior close-in watering and uniform water distribution. Low pressure loss and an efficient, straight-through flow design conserve energy and are ideal for dirty water applications.

The optional Seal-A-Matic™ prevents run-off, puddling, and erosion caused by low head drainage. And most important, it's rugged and dependable, popping up on schedule again and again because of the multi-function wiper seal.

The Maxi-Paw Rotor -- a tradition of excellence.


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[Models](#)
[Specifications](#)
[Manuals & Literature](#)

Specifications

- Precipitation Rate: 0.28 to 1.17 inches per hour (7 to 30 mm/h)
- Radius: 22 to 45 feet (6,7 to 13,7 m)
- Radius with Radius Reduction Screw: 18 ft (5,4 m)
- Pressure: 25 to 60 psi (1,7 to 4,1 Bars)
- Flow: 1.5 to 8.4 GPM (0,34 to 1,91 m³/h; 0,9 to 0,53 l/s)
- Combination 1/2" (15/21) or 3/4" (20/27) FPT bottom inlet
1/2" (15/21) FPT side inlet
- Nozzles: 06-red; 07-black; 08-blue; 10-yellow; 12-beige
- Low angle (LA) nozzles: 07 LA-black; 10 LA-yellow
- Nozzle outlet trajectory is 23° for 06, 07, 08, 10, and 12 nozzles.
- LA nozzle outlet trajectory is 11°.

Available Nozzles

- Standard trajectory
06, 07, 08, 10, 12
- Low Angle
07LA, 10LA

Dimensions

- Overall height: 9 3/10" (23,6 cm)
- Pop-up height: 3" (7,6 cm)
- Exposed surface diameter: 5" (12,7 cm)

loss" as previously. While pressure loss is a perfectly accurate term for the pressure used by sprinkler heads and emitters, operating pressure is more commonly used. Operating pressure is simply the pressure that needs to be present at the sprinkler or emitter inlet for it to perform as intended.

Manufacturers of sprinklers and emitters provide specifications for each of their products that list the various acceptable operating pressures for the units and how they will perform at that pressure. You will need to obtain the specifications for the products you intend to use. You may find this information printed on the sprinkler box or you may need to request it from your supplier. Most manufacturers also make specifications available on their web sites. Typically for a sprinkler this specification will list an inlet pressure as pounds per square inch (PSI) and then give a watering radius (feet) and flow rate in gallons per minute (GPM) that will occur at that pressure.

For an emitter the information would include only operating pressures (PSI) and a flow rate in gallons per hour (GPH) for each of those pressures. (Radius of throw isn't applicable to drip emitters.)

Pressure Requirements for Sprinklers

Spray Type Sprinklers:

For spray type sprinklers most designers use an operating pressure of 30 PSI, unless a lack of available pressure forces a lower level. Remember that if you use a lower pressure the sprinklers will need to be spaced closer together, because the water won't spray as far. Sprinkler manufacturers provide charts that tell you how much pressure is required for the sprinkler and how far it will spray with that pressure. Look on the package for the chart. Additionally, almost all spray type heads have a radius adjustment screw that allows you to adjust the watering radius down for smaller areas. (When you adjust the radius using the adjustment screw on a spray head, you are actually reducing the pressure at the nozzle by means of a small valve under the nozzle. The reduced pressure results in a decreased radius of throw.) At pressures above 45 PSI most spray heads start to create lots of mist, which results in poor irrigation. This can be controlled by using the radius adjustment feature to reduce the pressure, partially closing the valve to reduce the pressure, installing a pressure regulator on the mainline to reduce the pressure, or by using special pressure regulating nozzles made by some sprinkler manufacturers (which, you guessed it, reduce the pressure!)

Rotor Type Sprinklers:

For rotor type sprinklers the higher the operating pressure the better. (O.K., within reason. We don't want to blow the sprinkler apart with high pressure-- and rotors can cause mist too under extreme pressures.) But as a general rule, most rotor type sprinklers do not work well with less than 30 PSI operating pressure. Keep reading!

TIP:

"Stryker's Rotor Spacing Rule" states that the spacing in feet between rotor-type sprinklers can't exceed the pressure in PSI at the rotor. There is a lot of competition in the sprinkler business to see who can get the most radius from a rotor-type sprinkler. Manufacturer's literature and packaging tends to wildly exaggerate the maximum spacing of rotors. They get those distances by testing the rotors inside a big building with no wind. Even the most gentle breeze will shorten the real-world watering radius (water droplets are very light). If the package says the rotor has a radius of 35 feet at 30 PSI-- DO NOT BELIEVE IT! In the real world you will not get that distance. If you have 30 PSI do not space the rotors more than 30 feet apart. If you ignore this rule, 9 chances out of 10, you will have dry spots in your lawn! (Yep, over-size ego alert, it's my rule, thus the name.)

Rotor Spacing Example: If you want to space the rotors 30 feet apart then you will need to use a pressure of at least 30 PSI for the rotor. If you want to space rotors 40' apart you will need 40 PSI for the sprinkler head pressure. I don't recommend spacing sprinklers farther than 55 feet apart unless you have an experienced professional design the sprinkler system. Many tricky problems occur with