

[illegible]

Method of Determination: Tracks were collected with a Garmin GPS map 76S receiver and downloaded into an ArcMap shapefile that corresponds with 2009 aerial photography and verified the place of use to be in Twp 05N Rge 17E S 36 NENW¼. See attached map.

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</u><br><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</u><br><u>Size</u> |
|--------------------------------------------|-------------------|-------------------------|-------------------------|------------------|----------------------------------------------------|
|                                            |                   | 1/2 Hp submersible pump |                         |                  |                                                    |

#### D. FLOW MEASUREMENTS

1.

| <u>Measurement</u><br><u>Equipment</u> | <u>Type</u> | <u>Make</u> | <u>Model No.</u> | <u>Serial No.</u> | <u>Size</u> | <u>Calib. Date</u> |
|----------------------------------------|-------------|-------------|------------------|-------------------|-------------|--------------------|
| 5 gl bucket                            |             |             |                  |                   |             |                    |

2. Measurements:

Filled 5 gallon bucket in:

8.53 s; approximately 35 gpm, 0.08 cfs;

8.64 s; approximately 35 gpm, 0.08 cfs

#### F. VOLUME CALCULATIONS

1. Volume Calculations for Other Uses:

According to Mr. Hogan the system is in operation from March 1 to November 30 and is in operation 24 hours a day:  
 $(0.08 \text{ cfs} \times 26,930 \text{ gph} \times 24 \text{ hours} \times 274 \text{ days}) / 325,850 \text{ g/af} = 43.5 \text{ AF}$

#### G. NARRATIVE/REMARKS/COMMENTS

Permit 37-21464 is for 1.00 cfs aesthetic and wildlife use.

Application for permit 37-21464 submitted by Greg Hogan, was filed on May 18, 2005, and proof of Beneficial Use was submitted September 25, 2006.

System consists of a ½ Hp submersible pump that pumps water from a natural on-stream pond into 50' section of buried 3" PVC pipe with a rise of approximately 5'. The water then discharges from the pipe into an open channel, and flows downhill in the channel over a small waterfall, and then through the channel back into the pond over a total distance of 78'.

The system is landscaped in a way to present an aesthetically pleasing appearance and is clearly enjoyed by the Hogan family and the neighbors. Native fish benefit from the increased flow that provides increased oxygenation and water mixing, which prevents stratification of pond waters in summer months, providing more useable habitat for fish and aquatic organisms. Waterfowl also benefit as algal growth is reduced allowing increased growth of aquatic plants and organisms which provide a potential food source for many species of waterfowl.

Corey Skinner and I measured the flow using a 5 gallon bucket at the point where the water discharges from the 3" PVC pipe into the channel. Two separate measurements yielded the same flow rate of 0.08 cfs. Although the Department's field manual suggests avoiding the 5 gallon bucket measurement for measuring flows that fill the bucket in less than 10 seconds, the only other feasible option at the site was to use a v notch weir, which would have created too much disturbance to the landscaping. Therefore, we opted for the 5 gallon bucket method as it was the least intrusive method available to us.

Recommend permitting a flow rate of 0.08 cfs with a volume of 43.5 afa for aesthetic and wildlife.

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> |
|-----------------------|----------------------|-----------------------|----------------------|
| AESTHETIC             | 03/15 to 11/30       | 0.08 CFS              | 43.5 AFA             |
| WILDLIFE              | 03/15 to 11/30       | 0.08 CFS              | 43.5 AFA             |
| <u>Totals:</u>        |                      | 0.08 CFS              | 43.5 AFA             |

##### 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 Butt Mill Date 11/21/2011

Reviewer [Signature] Date 12/1/2011



Figure 1: Corey Skinner pointing to location of submersible pump in pond



Figure 2: Discharge from buried pipe into channel



Figure 3: Waterfall

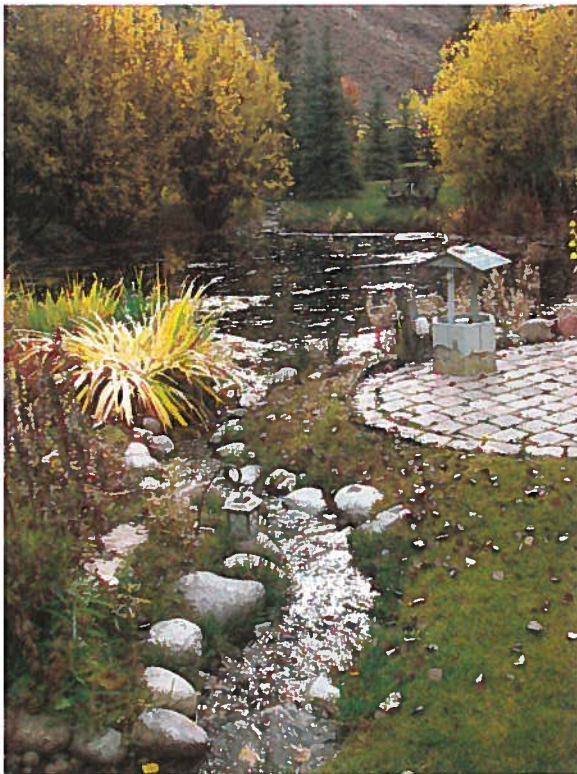
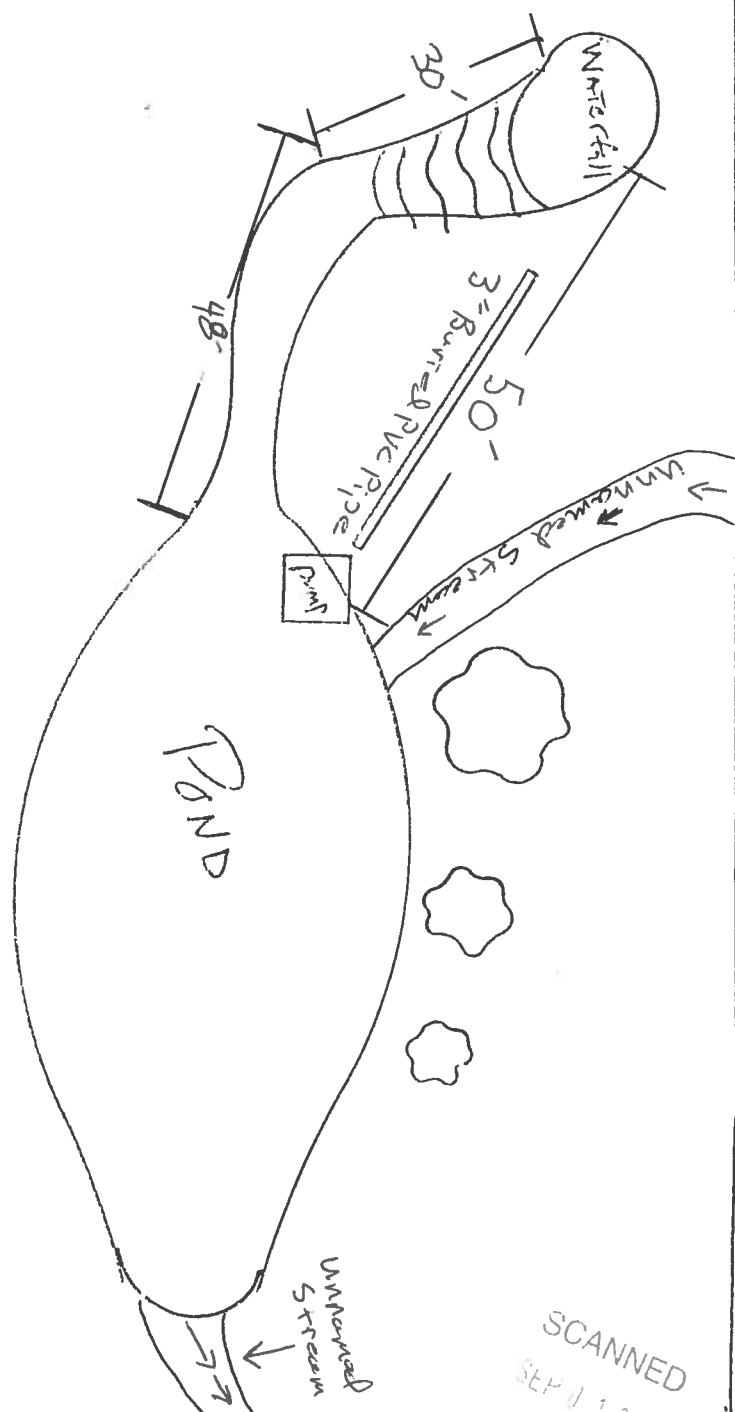


Figure 4: Return channel and pond



\* Distances are approximate

SCANNED  
SEP 11 2005

Permit 37-21464

