

[illegible]

PLACE OF USE: RECREATION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
65N	02E	34	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
				X	X														

PLACE OF USE: FIRE PROTECTION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
65N	02E	34	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
				X	X														

PLACE OF USE: FIRE PROTECTION STORAGE

Twp	Rge	Sec	NE				NW				SW				SE				Totals
65N	02E	34	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
				X	X														

DIVERSION TO STORAGE same as FIRE PROTECTION
STORAGE

Method of Determination:

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.
Diversion

There is an 18 inch diameter CMP pipe approximately 20 feet in length that connects Round Prairie Creek to the first pond. During high flows, mainly during spring run-off, water will flow from Round Prairie Creek, through the pipe and into the pond. As Round Prairie Creek recedes, there comes a point where the pond and Round Prairie Creek reach equilibrium. When Round Prairie Creek further recedes usually during the dryer part of the year, water will flow from the pond back into Round Prairie Creek. These conditions have been observed several times by IDWR agents.

- D. **FLOW MEASUREMENTS** At the time of the field exam, Round Prairie Creek and the first pond were in a state of equilibrium and no flow measurement was attempted.

E. **FLOW CALCULATION**

Measured Method:

During the application process, the applicant stated it took 4 days to fill the first pond. At that time, the estimated volume during those 4 days was used to determine a diversion rate of 4.3 cfs. At the time of the field exam, a theoretical flow calculation of the existing 18 inch diameter culvert was used to quantify a diversion rate of 4.3 cfs.

The hydraulic gradient of the pipe and channel from Round Prairie Creek to the first pond is relatively flat. During times of high flows a head of 0.5 feet could be reached, creating a hydraulic slope of $0.5 \text{ ft}/20 \text{ ft} = 0.025 \text{ ft/ft}$. and thus the Q is calculated by the Manning formula:

$$Q = \frac{0.463}{n} \left(\frac{1.5}{0.025} \right)^{2/3} (0.025)^{1/2} = \frac{(0.463)(2.95)(0.16)}{0.021} = \frac{0.22}{0.021} = 10.4 \text{ cfs}$$

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: None

2. Volume Calculations for Other Uses:

Pond one has a measured surface area, by means of aerial photography supplied by Bing Maps, of 13.3 acres with an average estimated average depth at the time of licensing of 5 feet, yielding a volume of 66.5 acre-feet.

The second pond has a measured surface area of 8.8 acres with an estimated average depth of 4 feet which yields a volume of 35.2 acre-feet.

Total calculated volume equals 66.5 af + 35.2 af = 101.7 af.

Recommend 100.6 acre-feet.

G. NARRATIVE/REMARKS/COMMENTS

For a historical explanation of the events leading up to the construction and subsequent operation of the two ponds, see the Preliminary Order issued on December 18, 2008 as an outcome of a protest to this water right.

The order is scanned into the back file of this right.

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>
DIVERSION TO STORAGE	01/01 to 12/31	4.300 CFS	
WILDLIFE	01/01 to 12/31	4.300 CFS	100.6 AF
WILDLIFE STORAGE	01/01 to 12/31		100.60 AF
RECREATION	01/01 to 12/31	4.300 CFS	100.6 AF
RECREATION STORAGE	01/01 to 12/31		100.60 AF
FIRE PROTECTION	01/01 to 12/31	4.300 CFS	
FIRE PROTECTION STORAGE	01/01 to 12/31		100.60 AF
<u>Totals:</u>		4.300 CFS	100.60 AF

2. Recommended Amendments

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

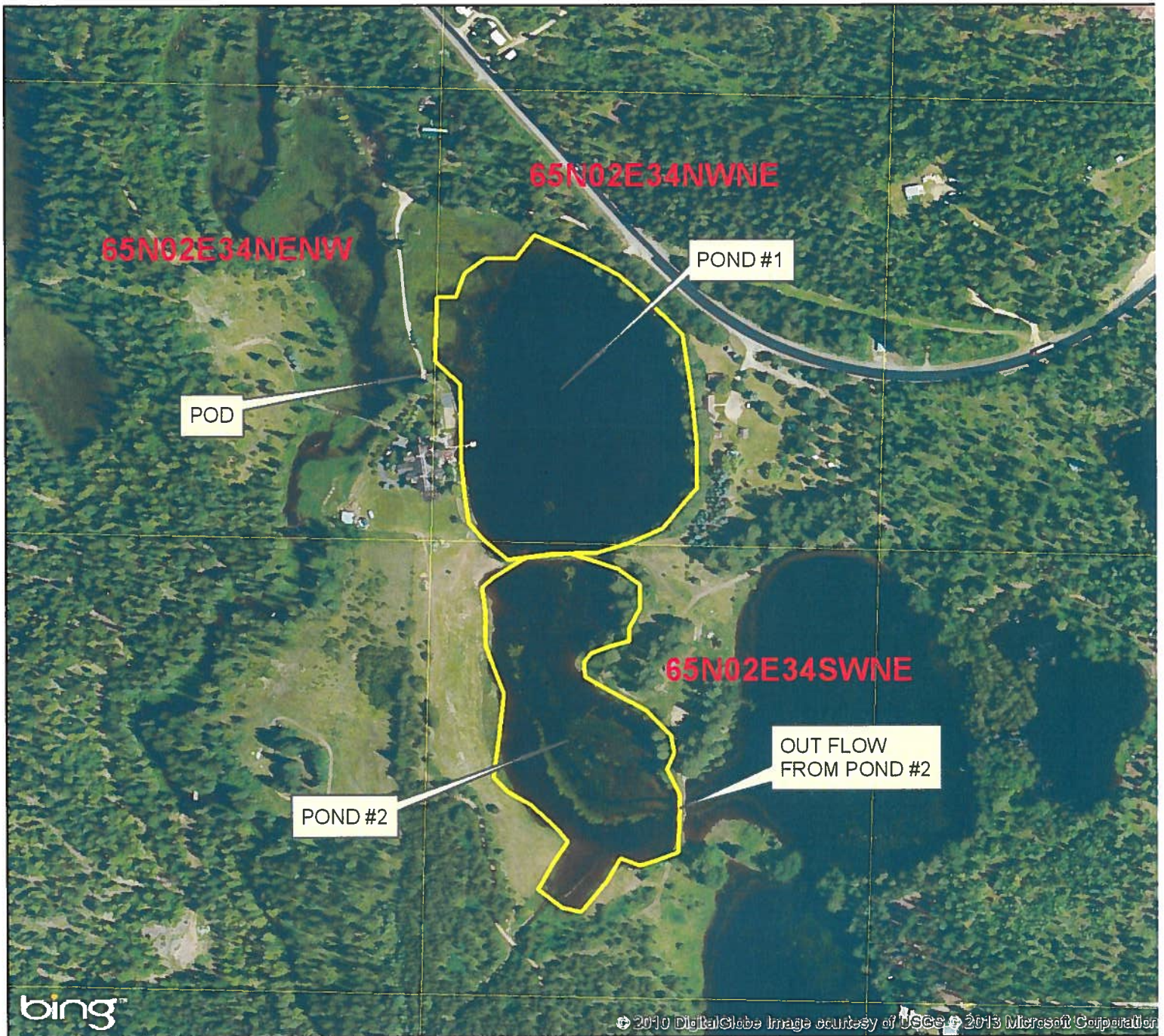
☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name Eric [Signature] Date 2-4-2013

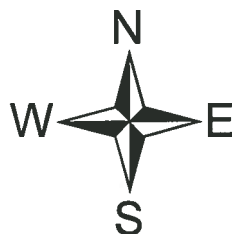
Reviewer J. Taylor Date 2/4/13

LAYOUT SCHEMATIC



Legend

-  workingpou
-  QQ







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