

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-23522

Exam Date: 24-Aug-2012

1. Current Owner: GEM COUNTY
415 E MAIN ST
EMMETT ID 83617
(208) 365-4561
2. Accompanied by: Verl Schmidt
Phone No: none. Supervisor Chuck Shambaugh – cshambauth@co.gem.id.us
Address:
Relationship to Permit Holder: Maintenance person

3. SOURCE TRIBUTARY
GROUND WATER

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

GROUND WATER L8 SE1/4SW1/4 Sec. 6, Twp 06N, Rge 01W, B.M. GEM County

Method of Determination: **GPS and visual inspection**

2.

PLACE OF USE: IRRIGATION

TwpRge Sec	NE				NW				SW				SE				Totals
	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
06N01W 6									7.8		.1						7.9
									L 7								
06N01W 7					2.6	1.7											4.3

Total Acres: 34.4

Method of Determination: **GIS analysis using 2009, Bing and 2011 Imagery.**

3. Yes Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

Yes Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

Yes Aerial Photo Attached (required for irrigation of 10+ acres).

Yes 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
D0039139		50			

**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
Thyme Flyte	Polysonic					3/28/2012

2. Measurements: Two separate Thyme Flytes used but neither would calibrate. Butterfly valve above measurement point sounds like it is fluttering, possibly introducing turbulence into system. Non standard size discharge pipe measured at 6.65" diameter and thickness of .239". Spacing of sonic bar calculated at 4.845". Flow measurement calculated below.

E. FLOW CALCULATIONS

____ Additional Computation Sheets Attached

Measured Method: Mr. Schmidt said the pump was 50 hp. A reading of the power meter indicates 36.6 KW as the maximum power usage. Using the conversion 1.34 KW to HP, this would correlate to 49 HP.

Pressure gauge at pump measured 60 psi. Sprinkler zone #3 turned on. All zones use Rainbird model 6504 sprinklers with #12 nozzles. Zone #3 has 34 sprinklers and Manufacture data sheets indicate flow rate of 12.2 gpm at 60 psi.

$$12.2 \text{ gpm} \times 34 \text{ heads} = 414.8 \text{ gpm}$$

$$414.8 \div 448 = 0.92 \text{ cfs}$$

Total of 34.4 acres found to be irrigated. Acres limited to 0.02 cfs per acre.

34.4 x .02 = 0.69 cfs

Therefore, license will be limited to 0.69 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{\text{I.R.}} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = \underline{34.4 \times 4.5 = 154.8 \text{ AF}}$$

$$V_{\text{D.R.}} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = \underline{0.69 \times 246 \times 1.9835 = 336.7 \text{ AF}}$$

D.R.

$$V = \text{Smaller of } V_{\text{I.R.}} \text{ and } V_{\text{D.R.}} = \underline{154.8 \text{ AF}}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

Parent 65-13775 split into 3 children. 65-23522 for Irrigation, 65-23523 for Domestic, 65-23524 for Recreation Storage.

After meeting with Shelley, Craig and Dan, it was decided to split 65-13775 into three children and associate Irrigation, Domestic and Recreation Storage with the child. The three new numbers are:

65-23522	Irrigation
65-23523	Domestic
65-23524	Recreation Storage

The main irrigation well was identified with tag # D0039139 welded on the casing and GPS'ed. The grass fields are irrigated Monday thru Friday between 10pm to 5am. According to Verl Schmidt (maintenance person), there are 19 zones irrigated by this well. All zones are running Rainbird model 6504 sprinklers

with a # 12 nozzle. The well pump size is 50 hp. A reading of the power meter indicates 36.6 KW as the maximum power usage. Using the conversion 1.34 KW to HP, this would correlate to 49 HP.

Two separate Thyme Flyte units gave errors so accurate flow information could not be measured. It is believed the shutoff valve may be causing turbulent flow and confuse the readings. The pump pressure gauge measures 60 psi with sprinklers running. The largest zone (zone 3) was turned on with 34 heads running. According to Rainbird's website, the flow for a #12 nozzle is 12.2 gpm (See spec sheet) which would indicate 414.8 gpm or 0.92 cfs.

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	03/15 to 11/15	0.690 CFS	154.80 AF
	<u>Totals:</u>	0.690 CFS	154.80 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 Glen Landman Date 31 Aug 2012
Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment To Water Right License
65-23522

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

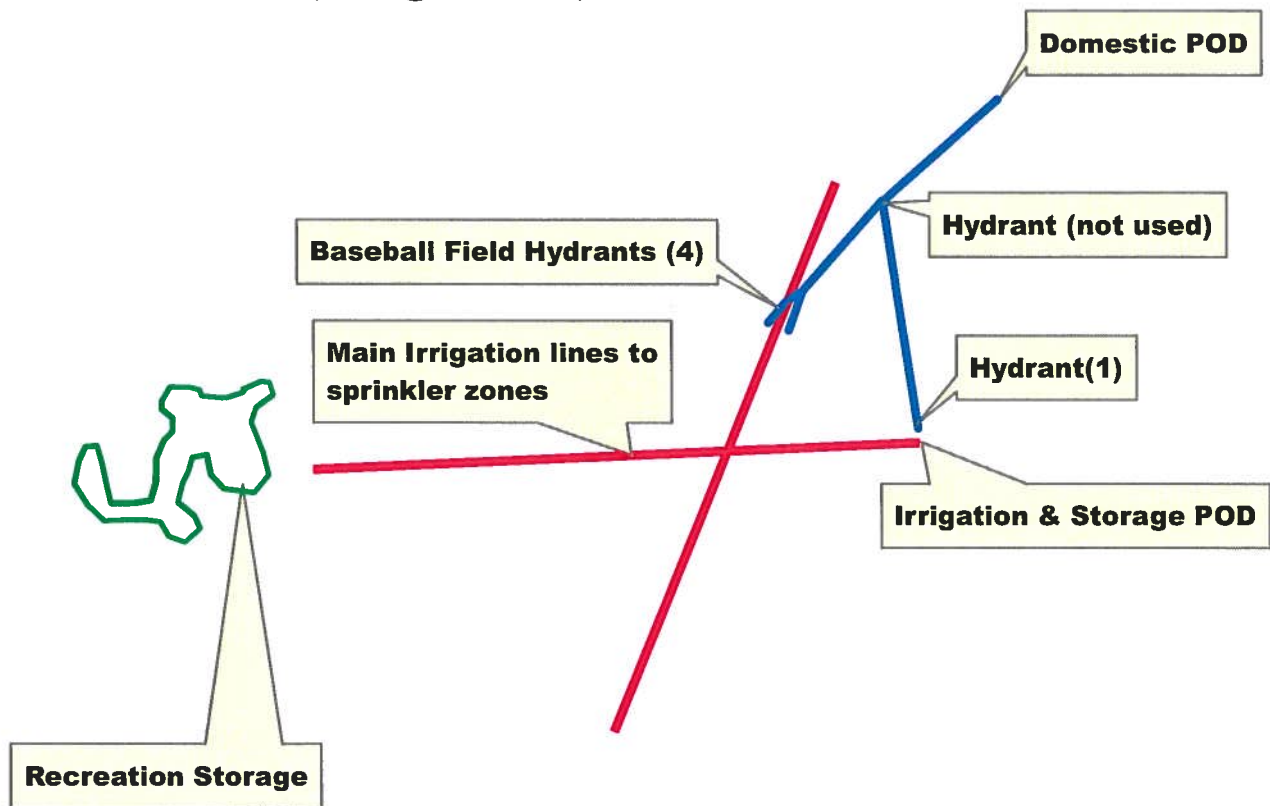


0 0.05 0.1 0.2 Miles

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



Field Exam System Diagram for 65-23522 (parent 65-13775) Glen Gardiner, August 24, 2012



The main irrigation lines (in Red) supply 19 sprinkler zones to water all grass areas in the park. The POD is located at the right end of the horizontal main line. Sprinkler types are all Rainbird Model 6504 with #12 nozzles. Flow calculations were made using Zone #3 which runs 34 Rainbirds. (65-23522)

The 2nd well line (in Blue) supplies (6) "Bury" type hydrants which are padlocked when not in use. Four of the hydrants supply water to the four baseball fields and are used to wet the field before games. One hydrant is never used and the last hydrant is located at the maintenance shed and used to clean equipment, mix chemicals and general maintenance usage. All hydrants are labeled "non-potable". (65-23523)

Recreation Storage is for the pond which intercepts shallow ground water and is a tributary of the Payette River. (65-23524)

6504

39' to 65'
(11.9 m to 19.8 m)

8005

39' to 81'
(11.9 m to 24.7 m)

Falcon® 6504 Series



0.37 to 1.14 in/hr
(9 to 29 mm/h)



30 to 90 psi
(2.1 to 6.2 bar)



2.9 to 21.7 gpm
(10.8 to 82.2 l/m)
(0.66 to 4.93 m³/h)



4" (10.2 cm)

8½" (21.6 cm)

1" (26/34) NPT or BSP

8005 Series



0.48 to 1.23 in/hr
(12 to 31 mm/h)



50 to 100 psi
(3.5 to 6.9 bar)



3.8 to 36.3 gpm
(14.4 to 137.4 l/m)
(0.86 to 8.24 m³/h)



5" (12.7 cm)

10⅞" (25.7 cm)

1" (26/34) NPT or BSP

Standard Features

- Ratcheting stem just like standard spray bodies
- 3-port, color-coded Rain Curtain nozzles for optimal long-range, mid-range, and close-in watering
- Easy arc adjustment (part-circle model) through top of rotor from 40° to 360°
- SAM Seal-A-Matic check valve
- Self-adjusting stator does not require replacement when changing nozzles
- Heavy-duty, stainless steel retract spring ensures positive pop-down
- 5 year warranty

Options

- **Stainless steel (SS) riser** helps deter vandalism on public turf areas
- **Purple cover (NP)** for non-potable systems
- **High Speed (HS) "Tan Top"** version for dust suppression



Standard Features

- Vandal resistance
- Brass reinforced turret for increased side impact durability
- Non strippable gear drive
- Memory Arc
- Part and Full Circle in one head
- Independent left and right edge adjustment
- SAM Seal-A-Matic check valve
- 3-port, color-coded Rain Curtain nozzles for optimal long-range, mid-range, and close-in watering
- 5 year warranty

Options

- **Stainless steel (SS) riser** helps deter vandalism on public turf areas
- **Purple cover (NP)** for non-potable systems



Operating Range

- Precipitation rate: 0.37 to 1.14 inches per hour (9 to 29 mm/h)
- Radius: 39 to 65 feet (11.9 to 19.8 m)
- Pressure: 30 to 90 psi (2.1 to 6.2 bar)
- Flow: 2.9 to 21.7 gpm (0.66 to 4.93 m³/h; 10.8 to 82.2 l/m)

Specifications

- 1" (26/34) female NPT or BSP threaded inlet
- SAM check device holds up to 10 feet (3.1 m) of elevation change
- Rain Curtain™ Nozzles: 04-black; 06-light blue; 08-dark green; 10-grey; 12-beige; 14-light green; 16-dark brown; 18-dark blue
- Nozzle outlet trajectory is 25°

Dimensions

- Overall height: 8½" (21.6 cm)
- Pop-up height: 4" (10.2 cm)
- Exposed surface diameter: 2" (5.1 cm)

Note: Pop-up height is measured from cover to center of nozzle. Overall body height is measured popped down

Models

- F4-FC: Full-circle
- F4-PC: Part-circle
- F4-FC-NP: Full-circle, non-potable cover
- F4-PC-NP: Part-circle, non-potable cover
- F4-FC-SS: Full-circle, stainless steel
- F4-PC-SS: Part-circle, stainless steel
- F4-FC-SS-HS: Full-circle, stainless steel, high speed rotation
- F4-PC-SS-HS: Part-circle, stainless steel, high speed rotation
- F4-FC-SS-NP: Full-circle, stainless steel, non-potable cover
- F4-PC-SS-NP: Part-circle, stainless steel, non-potable cover

Note: All models available with BSP threads



Falcon® 6504 Rain Curtain™ Nozzles

Falcon® 6504 Nozzle Performance

Pressure psi	Nozzle	Radius ft.	Flow gpm	■ Precip In/h	▲ Precip In/h
30	● 4	39	2.9	0.37	0.42
	● 6	43	4.2	0.44	0.50
40	● 4	41	3.3	0.38	0.44
	● 6	45	4.9	0.47	0.54
	● 8	49	6.6	0.53	0.61
	● 10	51	8.1	0.60	0.69
	● 12	53	9.7	0.66	0.77
	● 14	55	11.3	0.72	0.83
	● 16	55	12.6	0.80	0.93
	● 18	59	13.7	0.76	0.87
50	● 4	41	3.7	0.42	0.49
	● 6	49	5.5	0.44	0.51
	● 8	51	7.4	0.55	0.63
	● 10	53	9.1	0.62	0.72
	● 12	55	11.0	0.70	0.81
	● 14	59	12.7	0.70	0.81
	● 16	61	14.3	0.74	0.85
	● 18	59	15.4	0.85	0.98
60	● 4	41	4.0	0.46	0.53
	● 6	47	6.0	0.52	0.60
	● 8	51	8.2	0.61	0.70
	● 10	55	10.0	0.64	0.73
	● 12	57	12.2	0.72	0.83
	● 14	61	14.0	0.72	0.84
	● 16	63	15.7	0.76	0.88
	● 18	63	17.1	0.83	0.96
70	● 4	41	4.4	0.50	0.58
	● 6	49	6.3	0.51	0.58
	● 8	51	8.9	0.66	0.76
	● 10	57	10.8	0.64	0.74
	● 12	59	13.2	0.73	0.84
	● 14	61	15.2	0.79	0.91
	● 16	63	16.9	0.82	0.95
	● 18	65	18.3	0.83	0.96
80	● 4	43	4.6	0.48	0.55
	● 6	49	6.9	0.55	0.64
	● 8	53	9.4	0.64	0.74
	● 10	55	11.6	0.74	0.85
	● 12	61	14.0	0.72	0.84
	● 14	61	16.2	0.84	0.97
	● 16	63	18.1	0.88	1.01
	● 18	65	19.6	0.89	1.03
90	● 18	65	21.7	0.99	1.14

Precipitation rates based on half-circle operation

■ Square spacing based on 50% diameter of throw

▲ Triangular spacing based on 50% diameter of throw

Performance data collected in zero wind conditions

Performance data derived from tests that conform with ASAE Standards; ASAE S398.1. See page 224 for complete ASAE Test Certification Statement.

Photographer and date of Photos Glen Gardiner Aug 24, 2012
File Number 65-23522



Photograph of irrigation well. Blue butterfly valve causing turbulent and messing up Thyme Flyte reading.



Panoramic view looking west from irrigation well. House on left is maintenance shack. Baseball diamonds are located on right, beyond lawn tractor.

Photographer and date of Photos Glen Gardiner Aug 24, 2012
File Number 65-23522



North grass section.



Picnic area at west end of park. Restroom located behind picnic tables. (No running water).

Photographer and date of Photos Glen Gardiner Aug 24, 2012
File Number 65-23522



Grassy sitting area at southwest corner of park.