

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No. 63-12470

1. Owner: City of Boise Public Works Department Phone No.: 208-384-3901

Current Address: PO Box 500, Boise, ID 83701-0500

2. Accompanied by: _____ EXAM DATE: April 5, 2010

Address: _____ Phone No. _____

Relationship to Permit Holder: _____

3. Source: Ground Water tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None

2. Other water rights with the same point of diversion: 63-3013, 63-3014, 63-7047, 63-7055A, 63-8435, 63-7005B, 63-7042B, 63-7053, 63-7055C, 63-7055D, 63-7064A, 63-7064B, 63-7078B, 63-7755B, 63-8130B, 63-9243, 63-9359 & 63-12161

C. DIVERSION AND DELIVERY SYSTEM

1. Point(s) of Diversion: See Attachment B

Ident No.	Gov't Lot	¼	¼	¼	Sec.	Twp.	Rge.	County	Method of Determination/Remarks
								Ada	Exam, 2009 Photo

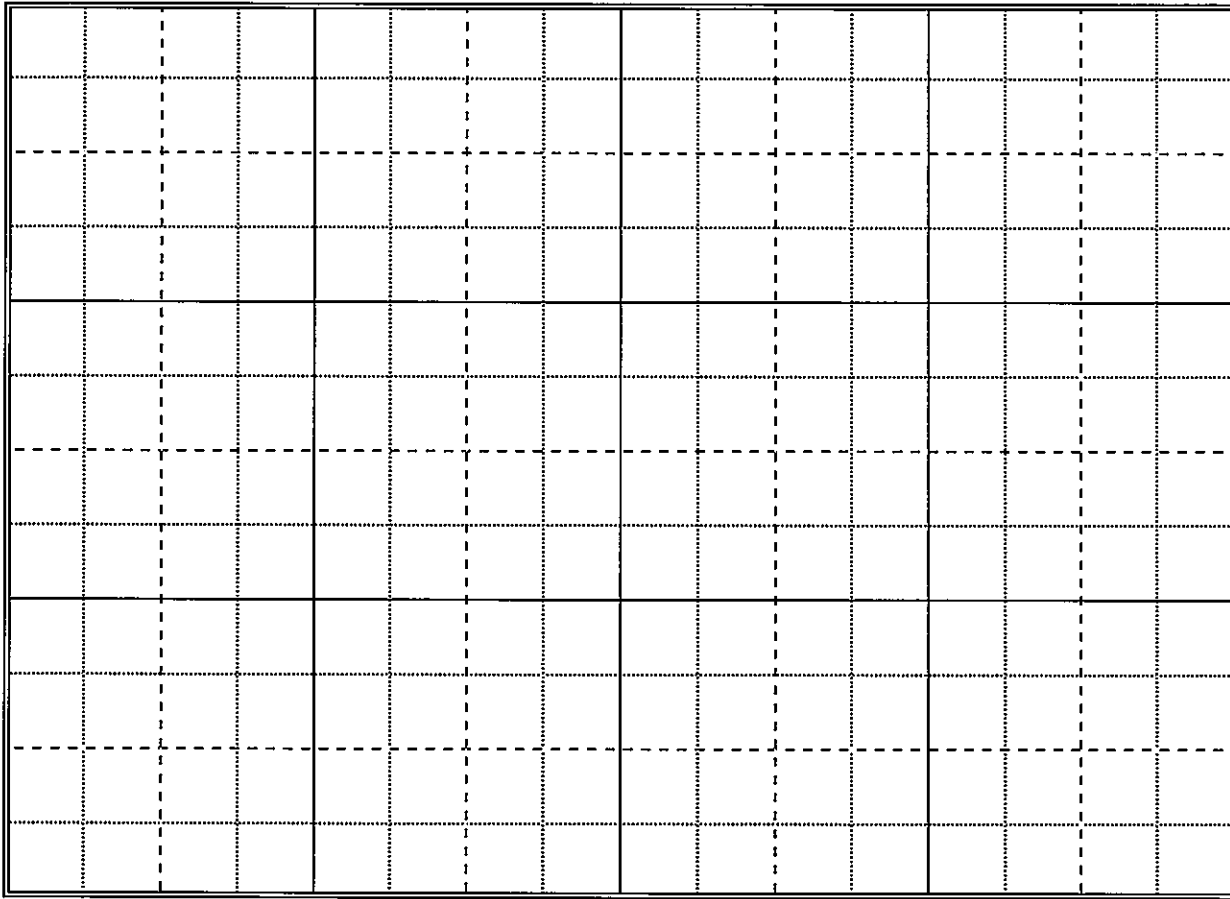
2. Place(s) of Use:

Indicate Method of Determination Exam, 2009 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	
1N	1E	23									30	35			31	33			129
		24									32	33		33					98
		35									39	39	30	31					139

Total 366

3. **Delivery System Diagram:** Indicate all major components and distances between components.
Indicate weir size/ditch size/pipe id as applicable. See Attachment D



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 12	US Motor	400	P057353230-0005R0003	Goulds	6-Stage 14RHMC
Well 11	US Motor	500	H08-7846-M	Floway	5-Stage 15DKH, #0475995

*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
Well 12 Flowmeter	Magnetic	Sea-metrics	AG2000-1000-GPM-GT	08090870	12-inch	
Well 11 Flow Meter	Vortex	EMCO – Fluidyne	Hydro-Flow 2200		12-inch	12/9/04

2. **Measurements:** _____ The measured discharge during pump-start up on October 30, 2009 was 2,500 gpm at 65 psi discharge pressure.

E. NARRATIVE/REMARKS/COMMENTS

Two wells (Wells 11 and Well 12) were constructed to provide water for permits 63-12461 and 63-12470. The wells are authorized for use within a twelve-well integrated irrigation system that serves the Farm. Diversion capacities for ten (Wells 1 through 10) of the twelve wells have been determined and decreed. The twelve wells provide irrigation within a 3776-acre PPU.

- Well 11 produces 6.68 cfs (3000 gpm), of which up to 4.58 cfs is diverted under permit 63-12461, leaving up to 2.1 cfs available for diversion under permit 63-12470. Well 11 capacity is documented in the field exam for permit 63-12461.
- Well 12 is equipped with a 400-hp vertical turbine pump with a variable frequency drive that produces 5.57 cfs (2,500 gpm). The well supplies groundwater for irrigation of 366 acres developed under permit 63-12470 at the City of Boise Twenty-Mile South Farm (the Farm). The well is 16-inch diameter with a completed depth of 560 feet. The vertical turbine pump is set at a depth of 330 feet with 10-inch column pipe. The licensing recommendations for the flow rate and volume developed and beneficially used under permit 63-12470 are within the diversion capacity limits of Wells 11 and 12 as indicated by the well tests and associated pump curves included in Attachment C of this exam and the exam for 63-12461.

To allow development of permits 63-12461 and 63-12470, water right 2-2268B was purchased for mitigation and remains un-diverted in the Snake River. As conditioned, both permits, when combined, will not exceed irrigation of 595 acres, 9.8 cfs and 2317.6 afa at the field headgate. This is equivalent to 0.0165 cfs/acre and 3.895 afa/acre.

Sixty-five acres in the N ½ SW, Section 23 were not developed until late 2009 and early 2010. These acres were first irrigated in April 2010 and therefore do not appear irrigated on the 2009 NAIP photo included in Attachment C. A diagram and photos of Pivot No. 431, that was installed for irrigation of these acres, are included in Attachments D and E. If necessary, further documentation can be provided upon request.

Water-bearing zone permitted was 300 to 600 ft. Developed water bearing zone is 350 to 560 ft. Attachment A is a copy of the permit, proof of beneficial use and decree 2-2268B (mitigation). Attachment B is a copy of the points of diversion.

Attachment C is the well driller's report, well test and pump performance curve.

Attachment D is a topographical map and aerial photo.

Attachment E are photos of the place of use and Well 12.

Have conditions of permit approval been met? ☒ yes ☐ no

F. FLOW CALCULATIONS

Y Additional Computation Sheets Attached
 Pump Curve & Well Test (Attachment C)

Measured Method:

Well 11

Per 63-12461 exam 3000 gpm (6.68 cfs) at 45 psi

Well 12

Per Pump Test: 2500 gpm (5.57 cfs) at 65 psi

Per Pump Curve: 2500 gpm (5.57 cfs) at 484 feet TDH

Static Water Level = 242.45'

Pumping Water Level = 285.1' @ 2350 gpm, Drawdown at 2500 gpm = 45.65'

Specific Capacity = 55 gpm/ft (2350 gpm / 42.65' DD)

Pumping water level at 2500 gpm = 242.45' + 45.45' = 287.9'

Friction loss (330 feet of 10-inch column, discharge head, miscellaneous valves and fittings) = 40'

Discharge pressure = 484' - 287.9' - 40' = 156.1' = 67 psi

Recommend 366 acres x 0.02 cfs/ac = 7.32 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 366 \times 4.5 \text{ afa limit} = 1,647.0$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 7.32 \times 260 \times 1.9835 = 3,775.0$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 1,647.0$$

2. Volume Calculations for Other Uses:

n/a

H. RECOMMENDATIONS**1. Recommended Amounts**

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Irrigation	3/1	11/15	7.32 cfs	1,647.0 afa

Limit to 9.80 cfs and 2317.6 afa in combination with 63-12461

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 (PPU)

I. AUTHENTICATIONField Examiner's Name Terry M. Scanlan, P.E., Certified Water Right Examiner 11-129 Date 7/16/10Field Examiner's Signature *Terry M. Scanlan*

Reviewer _____ Date _____

