

[illegible]

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ ditch size/ pipe i.d. as applicable.

See Attached Grid sheet

- ☒ 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
South Irrigation Well	Franklin	5	Not avail	Sta-Rite	Model L70J4

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calibration

2. Measurements: _____

E. NARRATIVE / REMARKS / COMMENTS

See attached narrative.

Have conditions of permit approval been met? ☒ Yes ☐ No

F. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Pump performance curve: 0.20 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 3.0 \text{ ac} \times 3.5 \text{ afa} = 10.5 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 0.06 \times 200 \times 1.9835 = 23.8 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 10.5 \text{ af}$$

2. Volume Calculations for Other Uses:

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
<u>Irrigation - 3.0 ac</u>	<u>4/15</u>	<u>10/31</u>	<u>0.06</u>	<u>10.5</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
TOTALS:			<u>0.06</u>	<u>10.5</u>

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

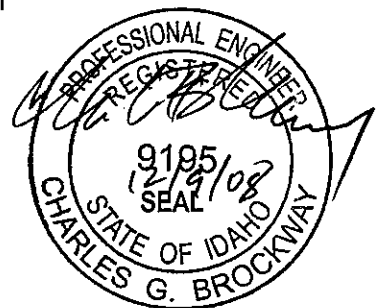
I. AUTHENTICATION

Field Examiner's Name: Charles G. Brockway, P.E.

Date: 12/9/08

Reviewer: _____

Date: _____



Narrative for Beneficial Use Examination

Permit No. 37-20400
Owner: W. Bruce Willis

Charles G. Brockway, P.E.
December 9, 2008

Background

This permit is appurtenant to property now owned by W. Bruce Willis, located within the Flying Hat Ranch II subdivision approximately 2 miles north of Hailey, Idaho. The permit was obtained in 2002 but has an advanced priority date of 9/21/2007 due to the fact that the permit lapsed and was reinstated. Proof of Beneficial Use was filed on 9/21/2007. The permit allows 0.06 cfs for irrigation of 3.0 acres. Mitigation for the consumptive use under the permit was provided by Transfer #69165 of surface water right 37-4J, which created the new number 37-20402. 37-20402 has been recommended in the SRBA for 0.28 cfs and 10.5 afa for mitigation purposes, of which 0.06 cfs is to remain in the Hiawatha Canal for conveyance loss mitigation and the remainder (0.22 cfs) is to remain in the Big Wood River. Management of the mitigation right is under the jurisdiction of the watermaster of District 37.

Mr. Willis owns Lots 35, 36, and 39A of the subdivision. Note that Lot 39A is the result of a combination of Lots 39 and 40 of the original plat.

A field examination was performed on November 20, 2008. Present were Alfredo, the on-site caretaker for the property, and Rick Russett with Webb Landscaping, the property manager.

Description of System

Irrigation under 37-20400 is supplied from the well on Lot 39A shown on the attached map (referred to as the South Well). The well has a 6-inch steel surface casing and is 64 feet deep. Static water level was measured at 7.45' below the top of casing and 6.30' below ground surface. A Sta-Rite 5HP-70 submersible pump delivers water to two pressure tanks with a typical pressure switch setup. The pressure switch is set to 40 psi on and 60 psi off. This well provides irrigation water only.

The 2006 aerial photo was used as a base map, and the entire property was inspected to determine the extent of irrigation and confirm the limits on the aerial photo. Irrigation from the South Well includes irrigated land on Lot 39A. This is a change from the permit remarks, which indicated that the irrigation would occur on Lot 35. Although additional irrigation is occurring to the north, a separate system supplies this land and is covered by permit 37-8502.

The irrigated land on the Willis property is within the service area of the Aspen Lakes Canal Company, owner of surface water rights 37-557, 37-558, and 37-559. Mr. Willis is a member of this irrigation company, the purpose of which is to own and maintain a delivery system for certain lots within Flying Hat Ranch. The diversion for these rights is

from the Big Wood River directly west of Mr. Willis' residence. Water is pumped across the road and into the south irrigation system.

Total irrigation from the south system is 3.3 acres, computed by GIS methods. This is 0.3 acres greater than allowed by 37-20400; however, surface water rights are also used in this system.

The attached drilling record pertains to the irrigation well on Lot 39A, drilled in June 1991. Another attached drilling record from July 1991 pertains to another well existing in the south portion of Lot 39A (the area which was formerly Lot 40). This well was inspected and found to have no pump. According to the caretaker, the well has never been used for any purpose.

Flow rate determination

The piping configuration is such that measuring flow with an ultrasonic meter is not feasible. The beneficial use exam was conducted after the irrigation systems had been winterized, and therefore the pumps could not be operated. Therefore, the performance curves for the installed pumps (attached) were used to determine the pump capacity given the total dynamic head (TDH) of the system.

TDH includes pumping lift, discharge pressure, and velocity head. Pumping lift is equal to the static water level of 6.3 feet plus drawdown. With a pumping rate of approximately 50 gpm, the drawdown in the well will be no more than 25 feet (specific capacity of 2 gpm/ft) based on numerous domestic wells in the immediate vicinity, which are typically fully cased with no perforations. The discharge pressure was assumed to be 40 psi (92.3 feet), the low set point at the pressure tanks. Velocity head in a 2-inch pipe at 50 gpm is 0.4 feet. Thus, the total head is $6.3 + 25 + 92.3 + 0.4 = 124.0$ feet.

At this TDH, the performance curve indicates a discharge of 90 gpm or 0.20 cfs.

Although theoretical calculations are generally less precise than field measurements, the resulting discharge is relatively insensitive to the assumptions. For example, a 10-foot change in the total head only changes the discharge by about 4 gpm.



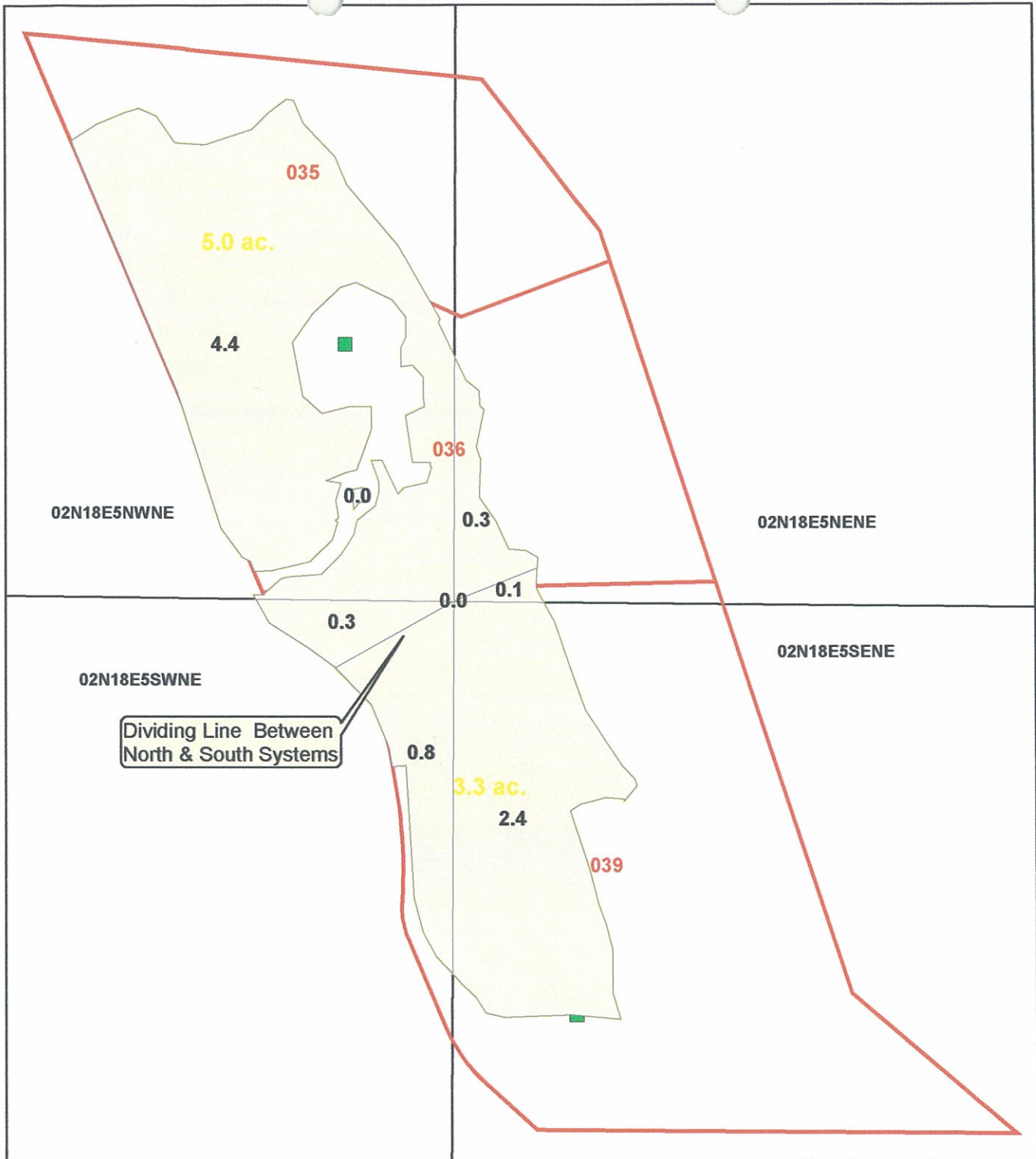
1 inch equals 200 feet

WILLIS, BRUCE (FLYING HEART RANCH II)
 36-8502 & 37-20400
 NAIP 2004 AERIAL

Legend

- Willis_Flying_Heart_Ranch_Lots
- t02n18e
- Irrigation_F/E = 8.3 Acres
- Wellhead - unknown
- Irrigation wells





1 inch equals 200 feet

WILLIS, BRUCE (FLYING HEART RANCH II)
36-8502 & 37-20400
NAIP 2004 AERIAL

Legend

- Willis_Flying_Heart_Ranch_Lots
- t02n18e
- Irrigation_FE = 8.3 Acres
- Wellhead - unknown
- Irrigation wells
- IRR PER QQ





Santh Dell
70 gpm Series, 5 HP

4" submersible pumps

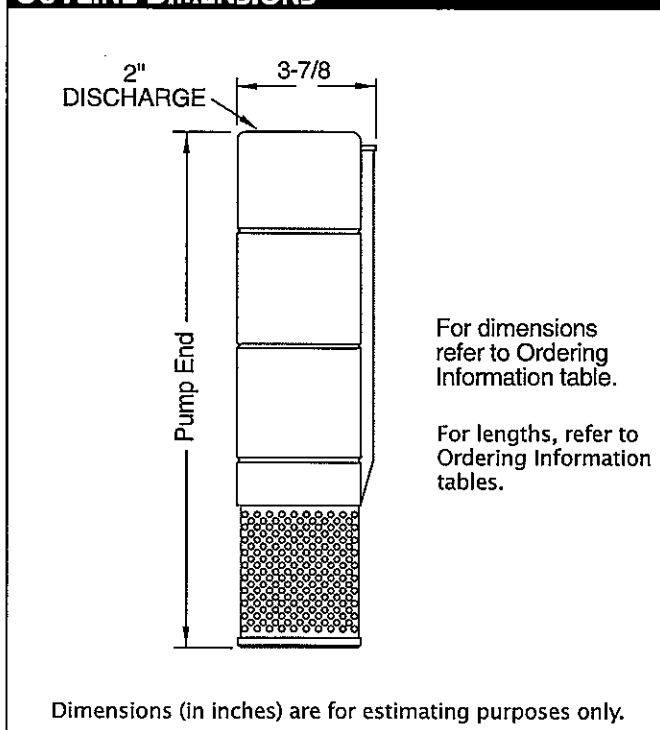
ORDERING INFORMATION

Motor Type	HP	Stgs.	PH	Volt	Pump End			Motor		Control Box	
					Catalog Number	Length Inches*	Weight Pounds*	Catalog Number	Weight Pounds*	Catalog Number	Weight Pounds*
2 Wire	1-1/2	4	1	230	L70F4	20-25/32	26	P42B0015A2	29		
	1-1/2	4	1	230	L70F4	20-25/32	26	P43B0015A2	27	SMC-CR1521	7
3 Wire →	1-1/2	4	3	230	L70F4	20-25/32	26	P43B0015A3	23		
	1-1/2	4	3	460	L70F4	20-25/32	26	P43B0015A3	23		
	2	5	1	230	L70G4	24-1/16	31	P43B0020A2	31	SMC-CR2021	7
	2	5	3	230	L70G4	24-1/16	31	P43B0020A3	27		
	2	5	3	460	L70G4	24-1/16	31	P43B0020A3	27		
	3	7	1	230	L70H4	30-5/8	39	P43B0030A2	40	SMC-CR3021	7
	3	7	3	230	L70H4	30-5/8	39	P43B0030A3	32		
	3	7	3	460	L70H4	30-5/8	39	P43B0030A3	32		
	5	12	1	230	L70J4	47-1/32	60	P43B0050A2	70	SMC-CR5021	8
	5	12	3	230	L70J4	47-1/32	60	P43B0050A3	55		
	5	12	3	460	L70J4	47-1/32	60	P43B0050A3	55		
	7-1/2	17	3	230	L70K4	63-7/16	81	P43B0075A3	70		
	7-1/2	17	3	460	L70K4	63-7/16	81	P43B0075A3	70		
	10	23	3	460	L70L4	83-1/8	106				

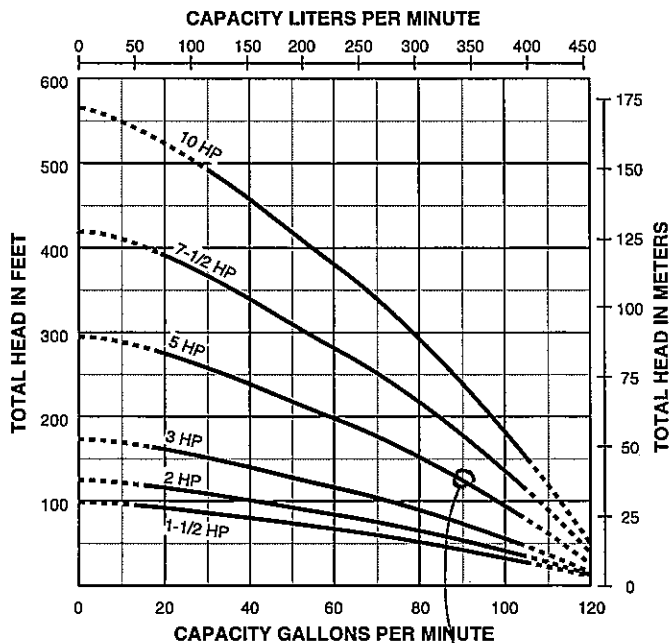
*Length and Weight are approximate.

NOTE: Pump end and motor purchased separately.

OUTLINE DIMENSIONS



PUMP PERFORMANCE - 70 GPM



Tested and rated in accordance with Water Systems Council Standards.

NOTE: Pumps installed with a PRO-Source™ tank require a 100 PSI relief valve. Pumps installed with a conventional tank require a 75 PSI relief valve. Relief valve must be capable of relieving entire flow of pump at relief pressure.