

[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
North Irrigation Well	Franklin	2	Not avail	Sta-Rite	Model L50P4GH
House Well	Franklin	2	Not avail	Sta-Rite	Model L50P4GH

D. FLOW MEASUREMENTS

1.

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

2. Measurements: _____
- _____
- _____
- _____

E. NARRATIVE / REMARKS / COMMENTS

See attached narrative.

Acreage is greater than permit limit. Recommend limiting to 3.0 acres within above-described place of use.

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

F. FLOW CALCULATIONS

☒ Additional Computation Sheets Attached

Measured Method: Pump performance curve: 0.11 cfs for each well.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 0.09 \times 200 \times 1.9835 = 35.7 \text{ af}$$

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

2. Volume Calculations for Other Uses:

$$\text{Domestic in-house: } 750 \text{ gpd} \times 365 \text{ days} / 325829 \text{ af/gal} = 0.85 \text{ af}$$

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>0.09</u>	<u>10.5</u>
<u>Domestic</u>	<u>1/1</u>	<u>12/31</u>	<u>0.06</u>	<u>0.9</u>
		TOTALS:	<u>0.15</u>	<u>11.4</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

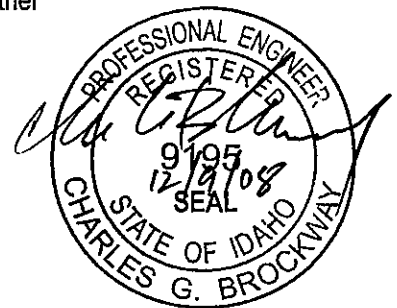
I. AUTHENTICATION

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

Date: 12/9/08

Reviewer: _____

Date: _____



Narrative for Beneficial Use Examination

Permit No. 37-8502
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 1989 and has a priority date of 4/3/1989. Proof of Beneficial Use was filed on 7/28/1989. The permit allows 0.09 cfs for irrigation of 3.0 acres and 0.06 cfs for domestic purposes. The irrigation is allowed only in conjunction with the domestic use. The permit indicates that the place of use is Lot 36 of the subdivision.

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. Additional information was obtained from Wood River Drilling, who installed all wells and pumps.

Description of System

Irrigation under 37-8502 is supplied from the well shown on the attached map (referred to as the North Well). The well has a 6-inch steel surface casing. Static water level was measured at 7.86' below the top of casing and 5.06' below ground surface. A Sta-Rite 2HP-50 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 house is supplied from a separate well dedicated for this purpose, located at the north edge of the house (referred to as the House Well). The House Well is essentially identical to the North Well and contains the same pump with the same pressure set points.

The 2006 aerial photo was used as a base map, and an on-ground inspection was conducted to determine the extent of irrigation and confirm the limits on the aerial photo. Irrigation from the North Well includes the irrigated land on Lot 35, Lot 36, and a small portion of Lot 39. Additional irrigation is occurring to the south – a separate system supplies this land and is covered by permit 37-20400.

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.

The dividing line shown on the map between the north and south systems was estimated by the caretaker based on the location of sprinkler heads. Total irrigation from the north

system is 5.0 acres, computed by GIS methods. This is 2.0 acres greater than the 3.0 acres allowed under 37-8502. It is recommended that the north and south systems be connected so that the surface water appurtenant to the Aspen Lakes Canal Company service area can be utilized to make up this difference.

Domestic use includes water supply for a 5+ bedroom residence including attached caretaker residence, and a 75'x25' swimming pool. Average daily domestic use is estimated to be 500 gpd for the main house and 250 gpd for the caretaker residence.

Since the domestic usage and irrigation usage are supplied from two wells, a licensing amendment is recommended to add a point of diversion.

History

The history of this water right and property was assembled from documents in IDWR files, warranty deeds, and from a personal conversation with Peter Sturdivant, the original applicant for 37-8502, who has a good knowledge of Flying Heart Ranch activities from the early 1980s through the mid 1990s.

Permit 37-8502 was obtained by Mr. Sturdivant, the owner of Lot 36 at that time, for a well that had been completed "before 1982," according to the remarks on the Application for Permit. Proof was filed almost immediately after the permit was obtained. Mr. Sturdivant acquired Lot 36 in about 1982 and drilled a well. A few years later Mr. Sturdivant also acquired the lot to the south. The attached well log in the name of Seegmiller pertains to this well (Seegmiller was Mr. Sturdivant's business partner at the time). Prior to 1989, a house was constructed and irrigation developed. Mr. Sturdivant sold Lot 36 and the house to Edward O'Gara in the early 1990s, and Mr. O'Gara acquired Lot 35 from another party shortly thereafter. Mr. Willis acquired Lots 35 and 36 from O'Gara on October 1, 2001. Mr. Willis acquired Lot 39A, located south of Lot 36, on August 9, 1989 (note that Lot 39A is a replat of original Lots 39 and Lot 40).

Logs for all pertinent wells are attached. The 1982 well was drilled close to the house on Lot 36 and is the well which now serves the house only. A well drilled by O'Gara in 1995 at the present swimming pool location was subsequently abandoned and replaced by Willis in 2002 in the course of remodeling the home and adding the swimming pool. The 2002 well is the north irrigation well. There are no other wells existing in Lot 35 or Lot 36.

Flow determination

The piping configuration is such that measuring flow with an ultrasonic meter is not feasible. 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 5.1 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 $5.1 + 25 + 92.3 + 0.4 = 122.8$ feet.

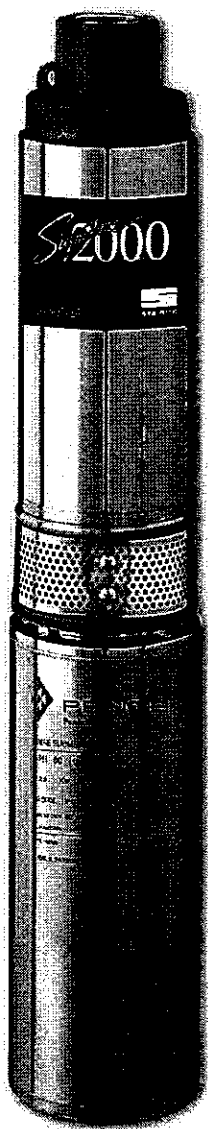
At this TDH, the performance curve indicates a discharge of 48 gpm or 0.11 cfs. A similar calculation for the domestic well, which has the same pump as the irrigation well, also yields 0.11 cfs for the discharge capacity.

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 only about 4 gpm.



North Well & House Well
50 gpm Series, 2HP

4" submersible pumps – 10, 15, 20, 30, and 50 gpm



Precision-engineered, high-quality, rugged Signature 2000® Stainless Steel Series Pumps deliver efficient, dependable performance even in rough, aggressive water. Heads to 1,950 feet and capacities to 65 GPM. Built to deliver long-term, trouble-free service. Floating impeller design resists sand and reduces sand locking. These pumps feature the patented SignaSeal™ staging system.

APPLICATIONS

- **Water systems...** for residential, industrial, commercial, multiple housing and farm use.

SPECIFICATIONS

Shell – Stainless steel
Diameter – 3-7/8"
Discharge – Stainless steel
Discharge Bearing – Nylatron®
Intermediate Bearing – (On larger units) Polycarbonate, nitrile rubber and stainless steel
Impellers – Acetal
Diffusers – Polycarbonate
Suction Caps – Polycarbonate with stainless steel insert
Thrust Pads – Proprietary spec.
Shaft and Coupling – Stainless steel
Intake – Stainless steel
Intake Screen – Polypropylene
Cable Guard – Stainless steel
Check Valve – Acetal†
Agency Listings – CSA

Signature
2000

STAINLESS STEEL

FEATURES

Patented Staging System – Our proven SignaSeal™ staging system incorporates a harder-than-sand ceramic wear surface that when incorporated with our floating impeller design, greatly reduces problems with abrasives, sand lock-up and running dry.

Discharge – Corrosion-resistant 300 grade stainless steel for durability in aggressive water. Large octagon wrench area for ease of installation.

Discharge Bearing – Exclusive self-lubricating Nylatron® bearing resists wear from sand.

Intake – Corrosion-resistant 300 grade stainless steel for durability in aggressive water.

Shaft – Positive drive from 7/16" hexagonal heavy-duty 300 grade stainless steel.

Coupling – Stainless steel press fit to pump shaft. Couples to all standard NEMA motors.

Shell – Highest grade, heavy-walled corrosion-resistant stainless steel. Threaded for easy servicing.

Hardware – All screws, washers and nuts are corrosion-resistant 300 grade stainless steel.

Check Valve† – Durable internal spring-loaded check valve.

Cable Guard – Corrosion-resistant stainless steel guard protects motor leads. Tapered ends prevent pump from catching on well.

Intake Screen – Corrosion-proof.

PENTEK® XE Motor – 2 and 3 wire NEMA standard all stainless construction water-filled motors.

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In order to provide the best products possible, specifications are subject to change.

†Except where noted.



N. Well & Base Well

4" submersible pumps – 10, 15, 20, 30, and 50 gpm

ORDERING INFORMATION

GPM	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*
50***	2 Wire	1-1/2	4	1	230	L50P4FH	15-1/4	10	P42B0015A2	29		
	3 Wire	1-1/2	4	1	230	L50P4FH	15-1/4	10	P43B0015A2	27	SMC-CR1521	7
		1-1/2	4	3	230	L50P4FH	15-1/4	10	P43B0015A3	23		
		1-1/2	4	3	460	L50P4FH	15-1/4	10	P43B0015A3	23		
		2	6	1	230	L50P4GH	19-1/4	12	P43B0020A2	31	SMC-CR2021	7
		2	6	3	230	L50P4GH	19-1/4	12	P43B0020A3	27		
		2	6	3	460	L50P4GH	19-1/4	12	P43B0020A3	27		
		3	8	1	230	L50P4HH	23-1/4	15	P43B0030A2	40	SMC-CR3021	7
		3	8	3	230	L50P4HH	23-1/4	15	P43B0030A3	32		
		3	8	3	460	L50P4HH	23-1/4	15	P43B0030A3	32		
		5	13	1	230	L50P4JH	33-1/2	20	P43B0050A2	70	SMC-CR5021	8
		5	13	3	230	L50P4JH	33-1/2	20	P43B0050A3	55		
		5	13	3	460	L50P4JH	33-1/2	20	P43B0050A3	55		
		7-1/2	20	3	230	L50P4KH	47-1/2	25	P43B0075A3	70		
		7-1/2	20	3	460	L50P4KH	47-1/2	25	P43B0075A3	70		
		10	25	3	460	L50P4LH	57-3/4	35				

* Length and Weight are approximate.

** For 10 GPM, 15 GPM, and 20 GPM, discharge is 1-1/4" NPT.

*** For 30 GPM and 50 GPM discharge is 2" NPT.

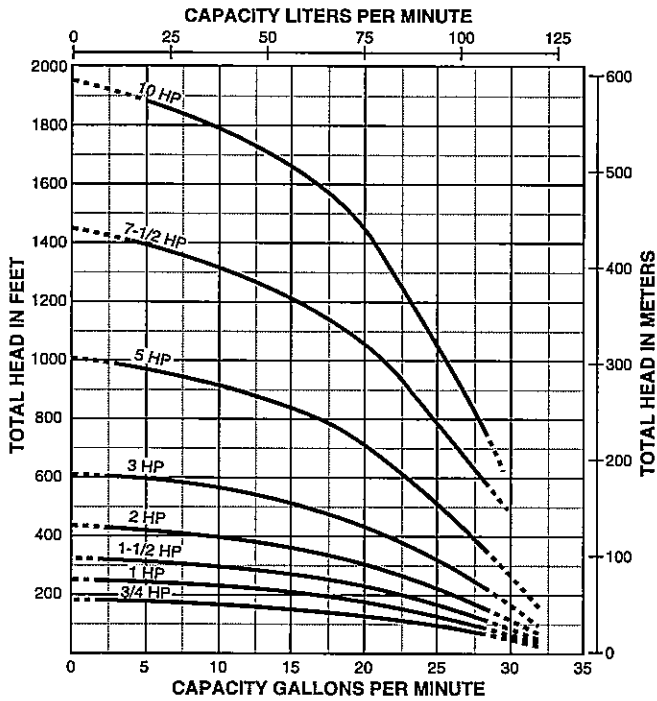
NOTE: Pump, Motor, Control Box or Magnetic Starter must be ordered separately.

Check valve not included on 50 GPM models.

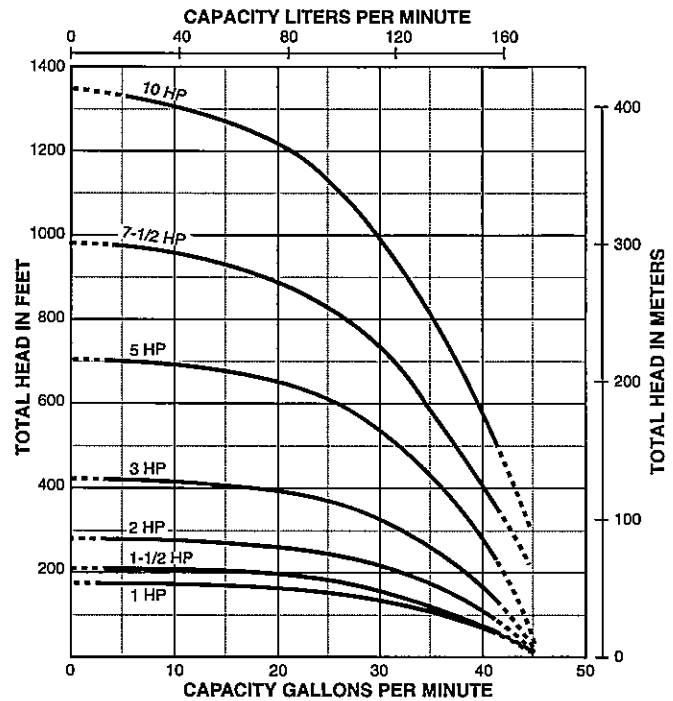


4" submersible pumps – 10, 15, 20, 30, and 50 gpm

PUMP PERFORMANCE – 20 GPM



PUMP PERFORMANCE – 30 GPM



PUMP PERFORMANCE – 50 GPM

