

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34176

Exam Date: June 28, 2019

1. Current Owner:
STATE OF IDAHO DEPT OF LANDS
STATEHOUSE BOISE ID 83720-0050

2. Accompanied by: None

3. **SOURCE:**
GROUND WATER

Method of Determination: Site visit

B. OVERLAP REVIEW

1. Other water rights with the same place of use: NO Overlap

Comments: _____

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
63-9166	Groundwater	Irrigation	Decree

Comments: 63-9166 describes irrigation the adjacent land west of the POU for 63-34176

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER L3 (NW¼ SW¼), Sec. 31, Twp 03N, Rge 02E, B.M. ADA County

Method of Determination: GPS, digital PLS map

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
03N	02E	31									40			40					80

Total Acres: 80.0

Method of Determination: Aerial imagery, digital PLS map

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.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0070060		125			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Ultrasonic		Panametric	PT878	GAA1620004		

2. Measurements:

1 wheel line in north 40 acres of POU

Measurement	Flow Rate (cfs)
1	0.502
2	0.502
3	0.503
4	0.502
5	0.501
6	0.502
7	0.499
8	0.499
9	0.497
10	0.497
11	0.501
Average	0.500

0.500 cfs average rate for 1 wheel line
 0.500 cfs/line x 4 wheel lines = **2.00 cfs**

E. FLOW CALCULATIONS

Additional Computation Sheets Attached

Measured Method:

Measured: **2.0 cfs**Permit: **1.6 cfs**Exam Fee: **4.0 cfs**BU Standard: 80 acres x 0.02 cfs/acre = **1.60 cfs**Recommended: **1.60 cfs****F. VOLUME CALCULATIONS**

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 80 \text{ acres} \times 4.5 \text{ afa/acre} = 360 \text{ afa}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 1.6 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 825 \text{ afa}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{360 \text{ afa}}$$

2. Volume Calculations for Other Uses:

No other uses

G. NARRATIVE/REMARKS/COMMENTS

This permit authorizes the diversion of 1.6 cfs from groundwater to irrigate 80 acres of land. Proof of beneficial use was submitted on May 4, 2017. I completed this field exam on June 28, 2019.

The point of diversion is a twelve-inch well with a 125-hp pump operating at 80 psi. The pump delivers water to six different wheel lines, four of which are used to irrigate the 80-acre place of use for this permit.

During the exam all six wheel lines were running at once which, according to the owner Jim Risch, is how the system is typically operated. I measured the flow rate at two points: first at a wheel line on the 40 acres outside of the place of use (right 63-9166), and second at a wheel line on the northern 40 acres of the place of use. The first measurement showed an average of 0.35 cfs, which suggests that there was roughly 0.70 cfs being diverted for the irrigation authorized by right 63-9166. The second measurement showed an average of 0.50 cfs. There were four such wheel lines running so the water diverted for this permit was 2.00 cfs. The total rate from the well was 2.70 cfs. There was no change in elevation between wheel lines, and minimal pressure loss in the 8" mainline between wheel lines. The difference in diversion rate must have been due to sprinkler nozzle size.

The measured 2.00 cfs is greater than the 1.60 cfs inch per acre standard allowed for irrigation. I have recommended 1.60 cfs for the license. Together, this right and 63-9166 authorize a total diversion of 2.38 cfs which is less than the rate coming from the well at the time of the exam, so no combined use limit is required.

There are no other active water rights used for irrigation at the place of use.

The place of use is directly adjacent to, but not within, the south Ada County ground water area of concern.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/01 to 11/15	1.60 CFS	360 AF

Totals: 1.60 CFS 360 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 ☒ None

I. AUTHENTICATION

Cody Parker - Water Resource Agent, Senior

Field Examiner's Name Cody Parker Date 7-1-19

Reviewer Patricia Wiley Date 7-1-2019



State of Idaho
Department of Water Resources
Beneficial Use Field Report
63-34176

IRRIGATION



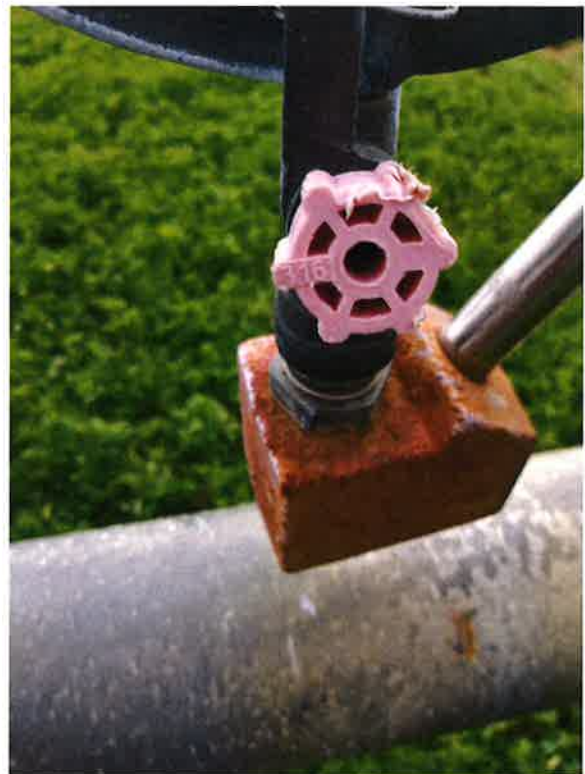
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.075 0.15 0.3 Miles





The place of use from the southwest corner looking north.



A typical sprinkler on the wheel lines.



An exposed section of 8-inch pipe between risers



*12-inch well with 16-inch flanged head. 125 hp pump.
80 psi.*

Basin/Seq#	Owner	Source	Use
63-11338	WEST, EL FIVEMILE	IRRIGATION	
63-136	BARKER	BOISE RI ¹	IRRIGATION
63-137B	BARKER	BOISE RI ¹	IRRIGATION
63-15340	SCHLOFF	GROUND	IRRIGATION
63-200A	BARKER	BOISE RI ¹	IRRIGATION
63-21106	UNITED S FIVEMILE	IRRIGATION	
63-2323K	AMERICA	BOISE RI ¹	IRRIGATION
63-2388A	UNITED S	BOISE RI ¹	IRRIGATION
63-2392F	BOISE PR	WASTE W	IRRIGATION
63-251A	UNITED S	BOISE RI ¹	IRRIGATION
63-26671	BARKER	BOISE RI ¹	IRRIGATION
63-301A	UNITED S	BOISE RI ¹	IRRIGATION
63-302A	UNITED S	BOISE RI ¹	IRRIGATION
63-33188	SEA COR	GROUND	IRRIGATION
63-33251	BOISE PR	INDIAN C	IRRIGATION
63-33253	BOISE PR	TENMILE	IRRIGATION
63-33549	DAS INVE	GROUND	IRRIGATION
63-33588	SEA COR	GROUND	IRRIGATION
63-33589	GREEN, B	GROUND	IRRIGATION
63-34176	RISCH, J.	GROUND	IRRIGATION
63-372	BARKER	BOISE RI ¹	IRRIGATION
63-373A	UNITED S	BOISE RI ¹	IRRIGATION
63-4923	INDIAN L	GROUND	IRRIGATION
63-7191	GILBERT,	GROUND	IRRIGATION
63-7221	LARSEN,	GROUND	IRRIGATION
63-9166	RISCH, JA	GROUND	IRRIGATION

NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	TotalAcres
1																1
X	X															
X	X															
			5													5
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X															
X	X									2.3						2.3
X	X															
X	X															
										22.1						22.1
										15						15
										0.6						0.6
								40			40					80
X	X															
X	X															
							25									60
			2.5	25	10											2.5
2																2
									41							41

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

03N02E31

Basin/Sequ	Owner	Source	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE
63-11338	WEST, EL FIVEMILE CREEK		X															
63-15340	SCHLOFA GROUND WATER					X												
63-15341	SCHLOFA GROUND WATER					X												
63-16324	VARGAS GROUND WATER		X															
63-16700	WESTERN GROUND WATER			X														
63-17360	DULL, GE GROUND WATER		X															
63-17768	HALE, AN GROUND WATER		X															
63-17961	MYER, M GROUND WATER		X															
63-18225	ROE, GAF GROUND WATER		X															
63-20055	LE MAR, I GROUND WATER		X															
63-31619	CITY OF I GROUND WATER					X												
63-33188	SEA CORI GROUND WATER												X					
63-33549	DAS INVI GROUND WATER												X					
63-33588	SEA CORI GROUND WATER												X					
63-33589	GREEN, B GROUND WATER												X					
63-34176	RISCH, J. GROUND WATER											X						
63-4923	INDIAN L GROUND WATER							X										
63-7191	GILBERT, GROUND WATER					X												
63-7221	LARSEN, GROUND WATER		X															
63-8369	HERSOM, GROUND WATER		X															
63-9166	RISCH, JAGROUND WATER											X						

 POD overlap

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

RECEIVED

FEB 25 2016

WATER RESOURCES
WESTERN REGION

1. WELL TAG NO. D 0070060

Page 1 of 3

Drilling Permit No. **969779-875836**Water right or injection well # **63-9166**

2. OWNER

Name **James E. Risch**

Irrigation Well #2

Address **5400 South Cole Road**City **Boise**State **ID**Zip **83709**

3. WELL LOCATION:

Twp. **03** North ☒ or South ☐ Rge. **02** East ☒ or West ☐Sec. **31** **SE** 1/4 **NW** 1/4 **SW** 1/4
10 acres 40 acres 160 acresGov't Lot **3** County **Ada**Lat. **43° 33.008' North** (Deg. and Decimal minutes)Long. **116° 16.281' West** (Deg. and Decimal minutes)Address of Well Site **~20 ft. west of S. Sunfish Way**City **Boise**

(Time at least name of road - Distance to Road or Landmark)

Lot. **N/A** Blk. **N/A** Sub. Name **Sage Meadows Ranch**

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection
☐ Other

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Replacement well ☐ Modify existing well☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☒ Mud Rotary ☐ Cable ☒ Other **Auger drilled to 4 feet bgl**

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
				SEE TABLE PAGE 3

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
12"-16"	+1'	1'	0.375"	Steel	☒	☐	☐	☒
20-Inch	1'	4'	0.375"	Steel	☒	☐	☐	☐
12-Inch	1'	254'	SDR17	Spliced PVC	☒	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) **no drive-shoe installed**

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method **Welded Vee-wire screens**Manufactured screen ☒ Y ☐ N Type **Johnson "Hi-Flow" stainless steel**Method of installation **Lowered, centralized and enveloped with filter sand**

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
254'	274'	0.040"	109/R	12-Inch	stainless steel	Sch. 40
274'	284'	0.035"	113/ft	12-Inch	stainless steel	6-inch long
284'	299'	0.040"	109/ft	12-Inch	stainless steel	weld rings

Length of Headpipe **no headpipe** Length of Tailpipe **no tailpipe**Packer ☐ Y ☒ N Type **spliced PVC / screen transition**

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
#6-#9 sand	194'	414'	190.9 ft³	Pour and tag into place
gradation				"Colorado Silica" brand

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) **23.4 PSI (54 ft. H2O)**Describe control device **12"-to-16" steel flanged well-head transition**

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) **none** ^{Non-pumping} Static water level (ft) **149.6 ft bgl (10-19-2015)**Water temp. (°F) **none** Bottom hole temp. (°F) **67.84 °F at 414 feet bgl**Describe access port **16" flanged discharge head with monitoring ports**

Well test:

Test method:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
Testing by: Hydro Logic, Inc.			☒	☐	☐	☐
15.7 feet	264 gpm	30 minutes				
Constant-rate discharge testing.			Water Chemistry: none			

Water Quality test or comments: **no odors, good taste, no sand**

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
24"	0'	1'	Topsoil		☒
24"	1'	4'	Caliche, siltstone, and silt		☒
19"	4'	5'	Weathered basalt with cemented siltstone		☒
19"	5'	63'	Hard, black basalt		☒
19"	63'	64'	Weathered basalt with cemented siltstone	n/a	n/a
19"	64'	108'	Gravels with sand and cobbles		
19"	108'	116'	Sandy gravel with trace of cobbles		
19"	116'		Medium-to-very coarse-grained tan-colored sand with a trace of gravel		
19"	120'		Medium-to-very coarse-grained tan-colored sand		
19"	136'	137'	Gravel lens		
19"	137'		Medium-to-very coarse-grained tan-colored sand		
19"	140'	147'	Tan-colored fine-to-coarse-grained sand		
19"	147'	165'	Tan-colored, sandy, sticky, soft clay		
19"	165'		Interbedded soft, sandy, tan-colored clays and hard, tacky, tan-colored clays		
19"	178'	185'	Medium-to-coarse-grained tan-colored sand		
19"	185'		Gravelly medium-to-coarse-grained tan-colored sand		
19"	192'	203'	Tacky tan-colored clay		
19"	203'		Moderately cemented medium-to-very coarse-grained tan-colored sand with a trace of gravel		
19"	235'		Fine-to-very coarse-grained cemented tan sand with gravel and thin lenses of tan clay		
19"	245'	261'	Fine-to-coarse-grained tan sand with tan clays		
19"	261'		Fine-to-very coarse-grained tan-colored sand with gravel		
19"	278'		Tan-colored clays interbedded with tan-colored fine-to-very coarse-grained sands		

(continued on next page)

Completed Depth (Measurable) **414 feet below ground**Date: Started **July 15, 2015**Completed **October 20, 2015**

14. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name **Post Drilling Incorporated** Co. No. **670**Principal Driller **George Post** Date **2-25-2016**Driller **Greg Mitchell** Date **2-25-2016**

Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0070060

Page 3 of 3

Drilling Permit No. **969779-875836**Water right or injection well # **63-9166**

2. OWNER

Name **James E. Risch**

Irrigation Well #2

Address **5400 South Cole Road**City **Boise**State **ID**Zip **83709**

3. WELL LOCATION:

Twp. **03** North ☒ or South ☐ Rge. **02** East ☒ or West ☐Sec. **31** **SE** 1/4 **NW** 1/4 **SW** 1/4

10 acres

40 acres

160 acres

Gov't Lot **3** County **Ada**Lat. **43° 33.008' North** (Deg. and Decimal minutes)Long. **116° 16.281' West** (Deg. and Decimal minutes)Address of Well Site **~20 ft. west of S. Sunfish Way**City **Boise**

(Circle at least name of road - Distances to Road or Corner)

Lot. **N/A** Blk. **N/A** Sub. Name **Sage Meadows Ranch**

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation ☐ Thermal ☐ Injection☐ Other

5. TYPE OF WORK check all that apply

(Replacement etc.)

☒ New Well ☐ Replacement well ☐ Modify existing well☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☒ Mud Rotary ☐ Cable ☒ Other **Auger drilled to 4 feet bgl**

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
				SEE TABLE THIS PAGE

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
12"-16"	+1'	-1'	0.375"	Steel	☒	☐	☐	☒
20-Inch	1'	4'	0.375"	Steel	☒	☐	☐	☐
12-Inch	1'	254'	SDR17	Spliced PVC	☒	☐	☐	☐

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s) **no drive-shoe installed**

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method **Welded Vee-wire screens**Manufactured screen ☒ Y ☐ N Type **Johnson "Hi-Flow" stainless steel**Method of Installation **Lowered, centralized and enveloped with filter sand**

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
334'	354'	0.040"	109/ft	12-Inch	stainless steel	Sch. 40
354'	379'	0.035"	113/R	12-Inch	stainless steel	6-Inch long
379'	414'	0.040"	109/ft	12-Inch	stainless steel	weld rings

Length of Headpipe **no headpipe** Length of Tailpipe **no tailpipe**Packer ☐ Y ☒ N Type **spliced PVC / screen transition**

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method
#6-#9 sand	194'	414'	190.9 ft³	Pour and tag into place
gradation				"Colorado Silica" brand

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) **23.4 PSI (54 ft. H2O)**Describe control device **12"-40-16" steel flanged well-head transition**

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) **none** ^{Non-pumping} Static water level (ft) **149.6 ft bgl (10-19-2015)**Water temp. (°F) **none** Bottom hole temp. (°F) **67.84 °F at 414 feet bgl**Describe access port **16" flanged discharge head with monitoring ports**

Well test:

Test method:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
Testing by: Hydro Logic, Inc.			☒	☐	☐	☐
15.7 feet	264 gpm	30 minutes				
Constant-rate discharge testing.			Water Chemistry: none			

Water Quality test or comments: **no odors, good taste, no sand**

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water Y	N
SEALING PROCEDURES					
24"	0'	4'	Cement grout - pumped thru tremie - 4.0 ft³		
19"	0'		Cement / Wyo-Ben Grout Well DF grout mixture		
		171'	pumped thru tremie - 134.8 ft³		
19"	171'	194'	Cement grout - pumped thru tremie - 20.1 ft³		

SEALS AND SAND FILTER:

-Seals and filter depths were verified by tagging in the annulus of the mud-filled borehole. Volumes of materials used were compared to volume calculations of the borehole caliber log minus the volume of the screen/casing (= annulus) and to the estimated volume of material removed from the borehole during drilling.

GROUT SEALS:

-Neat cement grout was mixed at a rate of 6-gallons of water to 24-pounds of Portland Type I/II cement powder.
-Cement/bentonite grout was mixed at rate of 24-gallons of water to 24-pounds of Portland Type I/II cement powder and 50-pounds of "Wyo-Ben" brand Grout Well DF bentonite powder.
-Grout pumped under pressure from the bottom-up.

PROJECT MANAGER:

James E. Risch, Owner, Boise, ID

PROJECT HYDROGEOLOGIST AND WELL DESIGN:

Ed Squires, RFG, Hydro Logic, Inc., Boise, ID

SITE GEOLOGIST (DRILL, CONSTRUCT, DEVELOP, AND CAMERA):

Kurt Newberry, Hydro Logic, Inc. - Boise, ID

INSPECTION, HYDRAULIC TESTING, AND BOREHOLE GEOPHYSICS BY:

Hydro Logic, Inc., Boise, ID

WELL DRILLING, CONSTRUCTION, AND DEVELOPMENT BY:

Post Drilling Inc., Weiser, ID

Completed Depth (Measurable) **414 feet below ground**Date: Started **July 15, 2015** Completed **October 20, 2015**

14. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name **Post Drilling Incorporated** Co. No. **670***Principal Driller **George Post** Date **2-25-2016***Driller **Greg Mitchell** Date **2-25-2016**

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.