

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

RECEIVED
SEP 03 2013
DEPT OF WATER RESOURCES

A Beneficial Use Field Report is prepared by a water right examiner as the result of an examination to clearly confirm and establish the extent of the beneficial use of water established in connection with a permit during the development period authorized by the permit and any extensions of time previously approved.

A. GENERAL INFORMATIONPermit No. 63-312561. Owner Jeff JohnsonPhone No. 208-722-7307Current address 23672 Walker Rd., Parma, ID 836602. Examiner's name Terry ScanlanEXAM DATE August 20, 20133. Accompanied by Jeff JohnsonEmail jjohnson@johnsonresearchllc.comAddress 23672 Walker Rd., Parma, ID 83660Relationship to permit holder permit holderPhone No. 208-722-73074. Source Ground Water

tributary to _____

B. OVERLAP REVIEW1. Other water rights with the same place of use None2. Other water rights with the same source and point of diversion 63-32236**C. DIVERSION AND DELIVERY SYSTEM**

1. Point(s) of Diversion:

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
8-inch			SE	SW	6	5N	4W	Canyon	Exam
16-inch			SE	SW	6	5N	4W	Canyon	Exam

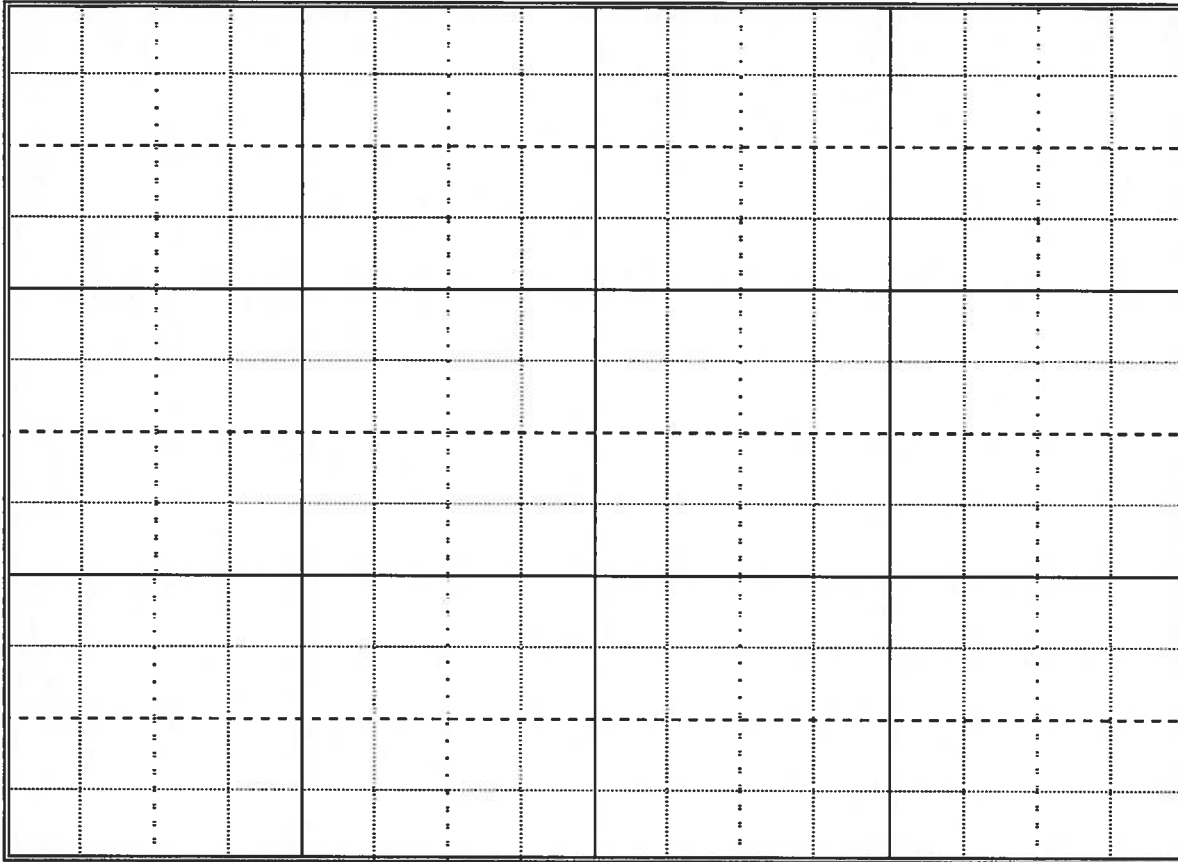
2. Place(s) of Use:

Method of determination Exam

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
5N	4W	6									34	1		21					56
												L6							
														D					
														1					1

12 acres irrigation within a 56-acre permissible place of use + 1.0 acre domestic landscape irrigation

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/ditch size/pipe diameter (inside), as applicable. Use the space provided or ☒ see attached.



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
16-inch well - 2012	US Motors	60	077532236-0013	Robbco 9CLE	6-inch; 11 stage pump,
8-inch well - 1998	submersible	2&3	submersible	Goulds 18GS	1.25"; 14 and 19 stages

*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
Portable Flowmeter (16-inch well)	Ultrasonic	GE	RT878	07140	2 MHz	March 27, 2013
none (8-inch well)						

2. **Measurements:** _____

522 gpm at 55 psi and 60 hz - 16-inch well

E. NARRATIVE/REMARKS/COMMENTS

An 8-inch well and a 16-inch well supply ground water for primary irrigation of 12 acres developed under this permit and for domestic use and 1.0 acre of landscape irrigation at one home. The two wells each supply separate systems.

The 8-inch well provides domestic supply and landscape irrigation for one home. Landscape area is 1.0 acre. The well is 311 feet deep, with 8-inch casing to 298 feet and 8-inch telescoping well screen from 301 to 311 feet. The well is equipped with 2 submersible pumps set on pitless connections. The east pump is a 3-hp Goulds 18GS30412 set at 220 feet depth on 1.25-inch PVC pipe. The west pump is a 2-hp Goulds 18GS20412 set at 240 feet depth on 1.25-inch PVC pipe.

The 16-inch diameter well provides groundwater for primary irrigation of 12 acres within a 56-acre permissible place of use. The well is constructed with 16-inch casing to 309 feet, and 12-inch casing and screen from 310 to 390 feet. The well is equipped with a 60-hp vertical turbine pump set on 300 feet of 6" column, with 1 3/16" shaft and 2-inch oil tube. The pump is controlled by a variable speed controller with a 55-psi set point pressure. The discharge from the pump is equipped with a 6x8 reducer, chemigation check valve, pressure transducer, 8-inch butterfly valve, pressure relief valve, and 8-inch end dive. Irrigation equipment consists of 2 part circle center pivots, and handlines. A schematic of the irrigation distribution system is provided as Figure 1. The well also provide ground water for primary irrigation of 34 acres under permit 63-32236.

Given that there are two separate systems, it is recommended that the permit be split into separate licenses. The 8-inch system should consist of domestic use (0.04 cfs and 0.6 afa) for one home and irrigation use for 1.0 acre at 0.02 cfs and 4.5 afa. The 16-inch system should consist of the balance of the permit diversion rate (0.24 cfs) for irrigation of 12 acres (0.02 cfs/ac) within a 56-acre permissible place of use. The permit will need to be amended to (1) split the permit into two separate permits, (2) add domestic as an authorized use, (3) add Government Lot 6 (NWSW) as a part of the irrigation PPU.

Has the permit holder met all conditions of permit approval, including any mitigation requirements and/or measuring device installation requirements? ☒ Yes ☐ No If no, what must be done to meet the permit requirements?

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

16-inch well - 522 gpm (1.16 cfs) at 55 psi and 60 hz using ultrasonic flow meter

8-inch well - Assume 220-foot pumping water level, 60 psi discharge pressure, and 15 feet friction for TDH of 374 feet.

From pump curve, 2-hp pump will produce 14 gpm and 3-hp pump will produce 22 gpm, for a total capacity of 36 gpm (0.08 cfs). Pump curves attached.

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 12 \times 4.5 = 54$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 0.24 \times 260 \times 1.9835 = 123.8$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 54$$

2. Volume Calculations for Other Uses:

Domestic = 0.6 afa (IDWR standard)

Landscape irrigation = 1.0 acres x 4.5 afa = 4.5 afa

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion	Annual Volume
	From	To	Q (cfs)	V (afa)
Irrigation	3/1	11/15	0.24	54
Domestic	1/1	12/31	0.04	0.6
Irrigation (landscape)	3/1	11/15	0.02	4.5
Totals:			0.30 cfs	59.1 afa

2. Recommended Amendments

☐ Change P.D. as reflected on page 1☐ Add P.D. as reflected on page 1☐ None☐ Change P.U. as reflected on page 1☐ Add P.U. as reflected on page 1☒ Other**I. AUTHENTICATION**

Field Examiner's Signature

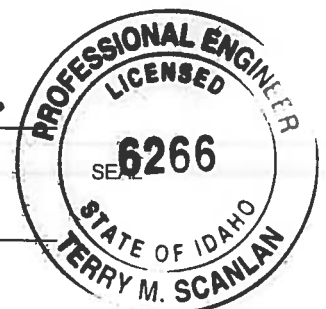
Terry M. Scanlan

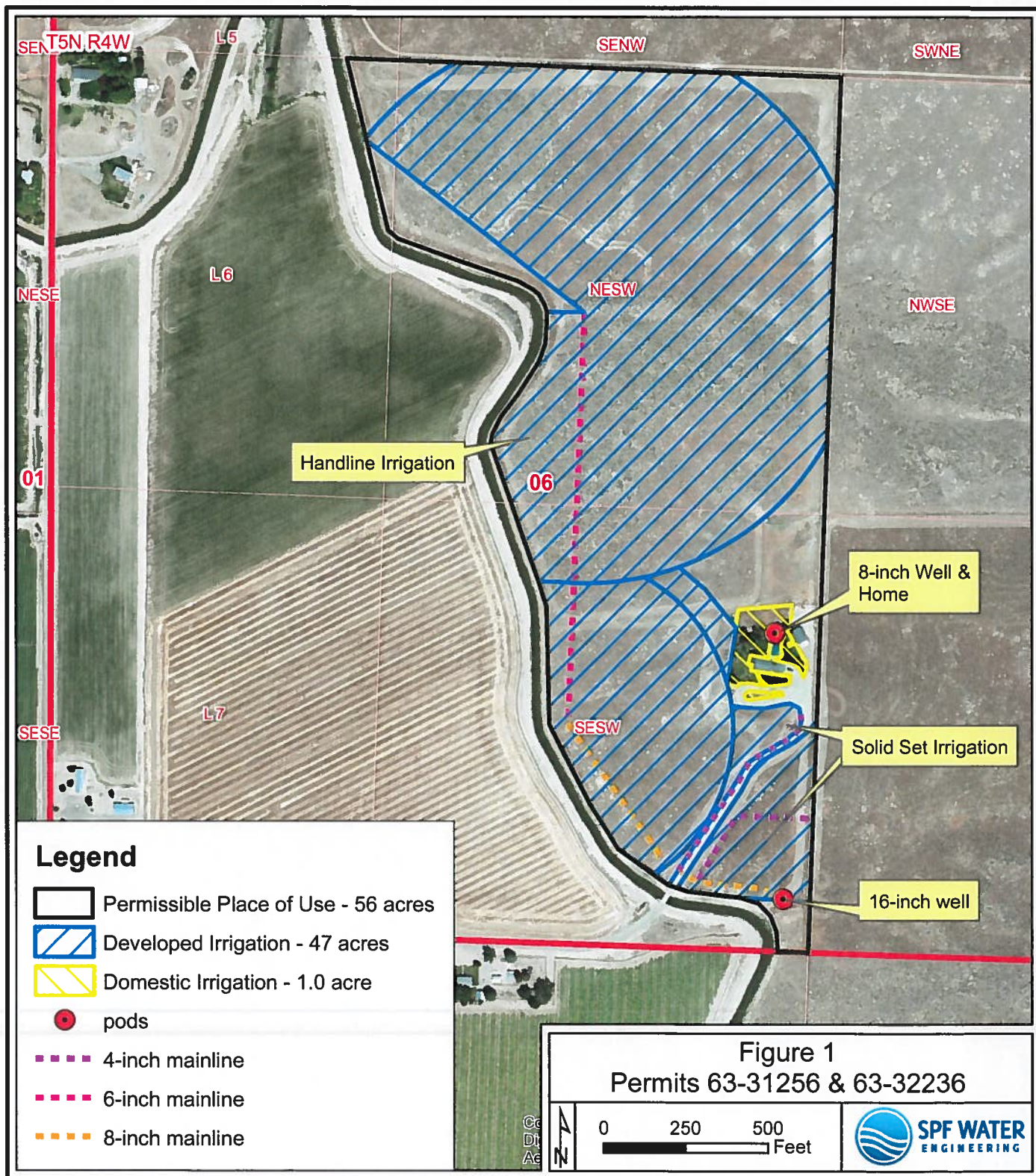
Date

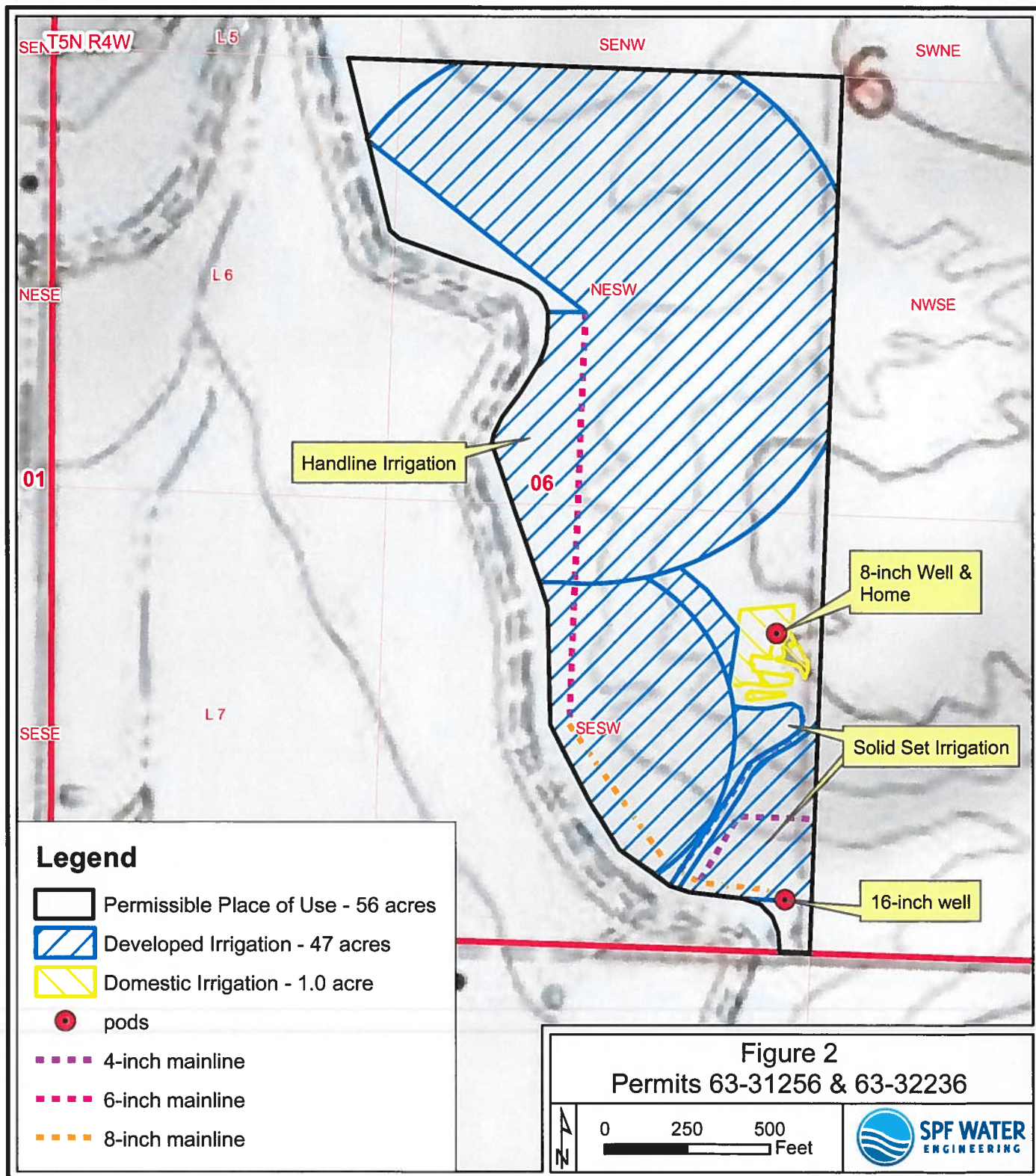
9/3/2013

Reviewer

Date







ATTACHMENT A

PERMIT RECORD AND PROOF OF BENEFICIAL USE

Close

IDAHO DEPARTMENT OF WATER RESOURCES
Water Permit Report

8/19/2013

WATER RIGHT NO. 63-31256

<u>Owner Type</u>	<u>Name and Address</u>
Current Owner	JEFF JOHNSON 23672 WALKER RD PARMA, ID 83660 (208)722-7307

Priority Date: 06/07/2001
Status: Active

<u>Source</u>	<u>Tributary</u>
GROUND WATER	

<u>Beneficial Use</u>	<u>From</u>	<u>To</u>	<u>Diversion Rate</u>	<u>Volume</u>
IRRIGATION	03/01	11/15	0.3 CFS	
Total Diversion			0.3 CFS	

Location of Point(s) of Diversion:

GROUND WATER|SESW|Sec. 06|Township 05N|Range 04W|CANYON County
GROUND WATER|SESW|Sec. 06|Township 05N|Range 04W|CANYON County

Place(s) of use:

Place of Use Legal Description: IRRIGATION CANYON County

<u>Township</u>	<u>Range</u>	<u>Section</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>	<u>Lot</u>	<u>Tract</u>	<u>Acres</u>
05N	04W	6		NESW	2		SESW	13						

Total Acres: 15

Conditions of Approval:

- | | |
|-------|--|
| 1.26A | Project construction shall commence within one year from the date of permit issuance and shall proceed diligently to completion unless it can be shown to the satisfaction of the Director of the Department of Water Resources that delays were due to circumstances over which the permit holder had no control. |
| 2.046 | Right holder shall comply with the drilling permit requirements of Section 42-235, Idaho Code and applicable Well Construction Rules of the Department. |
| 3.01M | After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department. |
| 4.004 | This right does not grant any right-of-way or easement across the land of another. |
| 5.X59 | Two points of diversion is located within SESW, Section 6, 05N, 04W. |
| 6.121 | The Director retains jurisdiction to require the right holder to provide purchased or leased natural flow or stored water to offset depletion of Lower Snake River flows if needed for salmon migration purposes. The amount of water required to be released into the Snake River or a |

tributary, if needed for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this permit.

Dates:

Proof Due Date: 09/01/2013

Proof Made Date:

Approved Date: 09/05/2008

Moratorium Expiration Date:

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

Application Received Date: 06/07/2001

Protest Deadline Date: 07/23/2001

Number of Protests: 0

Field Exam Date::

Date Sent to State Off:

Date Received at State Off:

Other Information:

State or Federal:

Owner Name Connector:

Water District Number:

Generic Max Rate per Acre: 0.02

Generic Max Volume per Acre: 4.5

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Cary Act Number:

Mitigation Plan: False

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SEP 03 2013

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
STATEMENT OF COMPLETION
FOR SUBMITTING PROOF OF BENEFICIAL USE

FOR OFFICE USE ONLY

Amt. of Fee \$: _____
Receipt No. _____
Receipt By: _____
Date Received: _____

The Idaho Department of Water Resources considers this form a statement by the permit holder(s) that development of a water right has been **completed** and that water has been applied to beneficial use to the extent described below. **This form must be accompanied by an examination fee, when necessary, or by a completed Beneficial Use Field Report prepared by a certified water right examiner.** Please refer to the instructions and fee schedule for this form. If ownership of the permit has changed, please contact any Department office or visit the Department's website at: www.idwr.idaho.gov for an *Assignment of Permit* form. If you wish to relinquish your permit because you have not established the authorized use of the water and are not applying for an extension, please notify the Department in writing.

1. Permit No.: 63-31256 Telephone No.: 208-722-7307

2. Name of Permit Holder(s): Jeff Johnson

3. Mailing Address: 23672 Walker Rd City: Parma

State: ID Zip: 83660 Email: _____ July /yr. 1998

4. Source of Water: Ground Water If **GROUND WATER** (well), Date Drilled: mo. Sept / yr. 2012

Well Driller: SOS Well Drilling, Riverside Inc. Drilling Permit Number: 64898, 863938

5. Extent of use(s) completed (as authorized by the water right permit):

Domestic (No. of households): _____ Stockwater (No. and type of stock): _____

Irrigation (No. of acres): 15 Other: _____

6. Total rate of diversion or storage volume for which proof is submitted: 0.30 cfs OR _____ acre-feet.

7. Compliance with a measuring device requirement, lockable controlling device requirement, and/or other conditions of permit: **Refer to the approval conditions on your permit and respond accordingly. The Department will not issue a license if permit conditions are not met.**

Measuring Device: Is a measuring device required?

Yes ☐ No ☒
If yes, has the measuring device been installed? Yes ☐ No ☐

Lockable Controlling Device: Is a lockable device required to control the diversion?

If yes, has the lockable device been installed?

Yes ☐ No ☒
Yes ☐ No ☐

Other Conditions of Permit: Do the approval conditions on your permit require you to submit additional information in connection with your proof of beneficial use? If yes, list the conditions below and attach documents with the required information.

_____ Completed? Yes ☐ No ☐

8. Fee Enclosed: \$ n/a See fee schedule on back of the instructions for filing proof of beneficial use. Proofs filed without an appropriate fee, will be considered incomplete.

9. Person to contact to accompany the Department representative during field examination of the water system.

Name: _____ Telephone Number: _____

Mailing Address: _____ City: _____

State: _____ Zip: _____ Email: _____

The information given on this form is my true statement of the extent to which the above numbered permit has been developed and water has been diverted and applied to a beneficial use. I understand that any undeveloped portion of the permit is relinquished to the State of Idaho.

Signature of permit holder: _____ Date: 8-20-13
(Include your title, if on behalf of company or organization)

Mail to: Idaho Department of Water Resources, PO Box 83720, Boise, ID 83720-0098

ATTACHMENT B

WELL DRILLERS' REPORTS AND PUMP CURVES

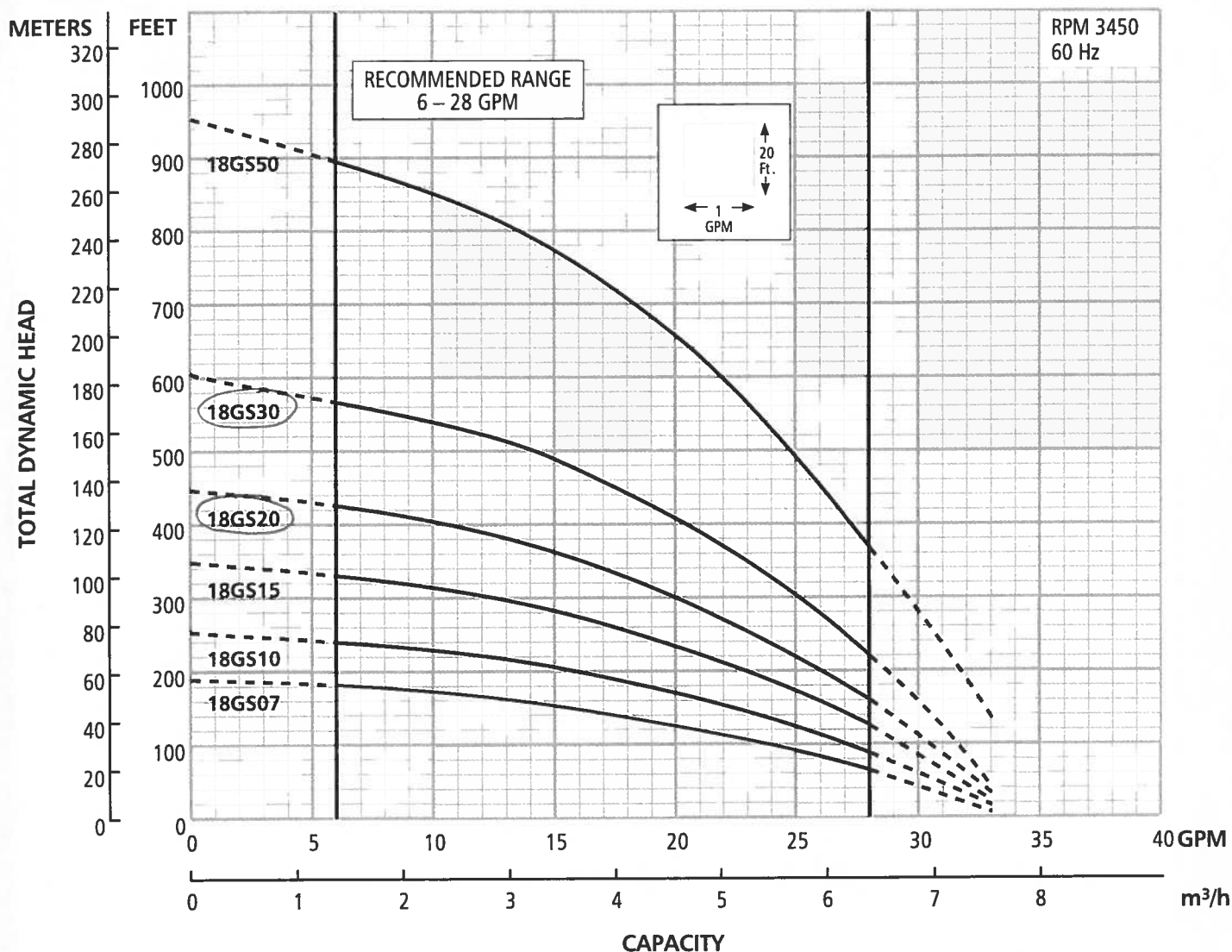
Per SOS Well Drilling 8/19/2013

8" well consists of 2 Goulds pumps:

1. 18GS30412 set at 220' with 1.25" pvc column (schedule 80) to 220' (east pitless)
2. 18GS20412 set at 240' with 1.25" pvc column (schedule 80) to 240' (west pitless)

Frank Skinner: 602-9239

Office: 888-3610

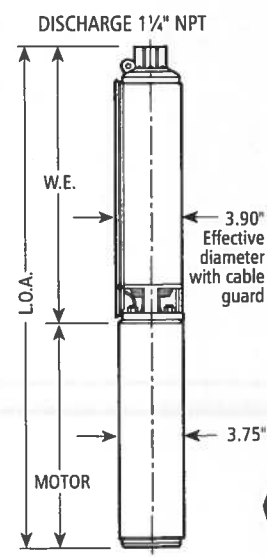


DIMENSIONS AND WEIGHTS

Model	HP	Phase	Stages	Length (inches)			Weight (lbs.)		
				W.E.②	Motor	L.O.A.③	W.E.	Motor	Total
18GS07412,22	¾	1	6	11.3	10.7	22.0	6	21	27
18GS10412,22	1	1	8	13.0	11.8	24.8	7	24	31
18GS15412	1½	1	11	15.5	13.6	29.1	9	28	37
18GS15422	1½	1	11	15.5	15.1	30.6	9	31	40
18GS15432,34	1½	3	11	15.5	11.8	27.3	9	24	33
18GS20412	2	1	14	18.1	15.1	33.2	10	33	43
18GS20432,34	2	3	14	18.1	13.6	31.7	10	28	38
18GS30412	3	1	19	22.4	19.1	41.5	12	41	53
18GS30432,34	3	3	19	22.4	16.1	38.5	12	35	47
18GS50412	5	1	30	32.9	28.2	61.1	17	70	87
18GS50432,34	5	3	30	32.9	22.2	55.1	17	55	72

② W.E. = water end or pump without motor.

③ L.O.A. = length of assembly – complete pump – water end and motor.



SELECTION CHART

Horsepower Range $\frac{3}{4}$ – 5, Recommended Range 6 – 28 GPM, 60 Hz, 3450 RPM

Horsepower Range ¾ – 5, Recommended Range 0 – 28 GPM, 60 ft, 5450 RPM			Depth to Water in Feet/Ratings in GPM (Gallons per Minute)																																	
Pump Model	HP	PSI	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	340	380	420	460	500	540	580	620	660	700	740	780	820	860					
18GS07	¾	0			28.2	26.5	24.0	21.0	17.9	13.5																										
		20	27.7	25.9	23.0	20.0	16.5	10.8																												
		30	25.0	22.0	18.8	15.7	9.5																													
		40	22.2	18.9	15.1	9.0																														
		50	18.4	15.0	7.5																															
		60	13.5	5.0																																
Shut-off PSI		74	66	58	49	40	32	23	14																											
18GS10	1	0					27.0	25.5	23.6	21.2	18.8	15.9	12.0																							
		20		28.0	26.6	25.1	22.7	20.0	17.6	14.0	10.0																									
		30	27.9	26.1	24.3	22.2	19.8	17.1	13.8	8.3																										
		40	26.0	24.1	22.0	19.7	17.0	13.1	8.0																											
		50	24.0	22.0	19.1	16.5	13.0	7.1																												
		60	21.0	18.6	15.8	12.0																														
Shut-off PSI		103	94	86	77	68	60	51	42	34	25	16																								
18GS15	1½	0						28.4	27.2	26.0	24.8	23.0	21.4	19.6	17.5	15.0	12.1																			
		20					27.8	26.8	25.4	24.0	22.2	20.6	18.8	16.7	14.0	10.0																				
		30				27.7	26.5	25.3	23.8	22.0	20.2	18.5	16.1	13.5	10.0																					
		40			27.5	26.3	25.0	23.6	22.0	20.1	18.1	16.0	13.1	9.5																						
		50	27.6	26.4	25.0	23.4	21.8	20.0	18.0	15.5	13.0	9.2																								
		60	26.0	24.6	23.0	21.2	19.5	17.5	15.0	12.0	7.9																									
Shut-off PSI		143	134	126	117	108	100	91	82	74	65	56	48	39	30	22																				
18GS20	2	0								28.0	27.1	26.2	25.1	24.0	22.9	21.4	20.0	16.8	12.8																	
		20							27.8	26.8	25.8	24.6	23.7	22.6	21.0	19.5	18.0	16.0	11.6																	
		30						27.5	26.5	25.5	24.5	23.3	22.1	20.6	19.0	17.5	15.8	13.6	6.5																	
		40				28.5	27.4	26.4	25.4	24.4	23.2	22.0	20.5	18.9	17.4	15.7	13.5	11.0																		
		50		28.0	27.2	26.2	25.3	24.3	23.0	21.8	20.3	18.7	17.0	15.3	13.1	10.5	6.0																			
		60	28.0	27.1	26.2	25.1	24.0	22.9	21.4	20.0	18.3	16.8	14.8	12.8	9.5																					
Shut-off PSI		183	174	165	157	148	139	131	122	113	105	96	87	79	70	61	44	27																		
18GS30	3	0											28.0	27.4	26.7	26.0	25.0	23.5	21.5	19.2	16.9	14.2	10.5													
		20										27.7	27.0	26.3	25.8	24.9	24.0	23.0	21.0	18.9	16.5	13.5	9.0													
		30										27.6	26.9	26.2	25.5	24.8	23.9	22.9	21.9	19.8	17.5	14.9	11.2													
		40								27.5	26.9	26.2	25.4	24.6	23.8	22.8	21.8	20.9	18.5	16.0	13.3	8.0														
		50							27.4	26.8	26.0	25.2	24.5	23.6	22.6	21.7	20.6	19.5	17.3	14.5	11.0															
		60					28.0	27.4	26.7	26.0	25.0	24.3	23.5	22.5	21.5	20.5	19.2	18.0	15.7	12.8	7.0															
Shut-off PSI						225	216	208	199	190	182	173	164	156	147	139	130	113	95	78	61	43	26													
18GS50	5	0																	27.9	26.8	25.8	24.8	23.7	22.6	21.2	19.9	18.4	16.8	14.8	12.4	9.7					
		20																	27.5	26.6	25.6	24.5	23.3	22.2	21.0	19.8	18.0	16.2	14.3	12.0	8.8					
		30																	28.0	26.9	26.0	25.0	23.9	22.9	21.6	20.3	18.6	17.0	15.0	13.0	10.2	6.2				
		40																	28.0	27.4	26.3	25.3	24.4	23.2	22.1	20.1	19.4	17.9	16.0	14.0	11.6	8.0				
		50																	27.9	27.3	26.8	25.9	24.9	23.8	22.7	21.3	20.1	18.5	16.9	14.9	12.8	10.0	6.0			
		60																	27.9	27.2	26.8	26.2	25.2	24.1	23.0	21.9	20.7	19.2	17.5	15.8	13.6	11.0	7.8			
Shut-off PSI																			307	298	290	281	264	246	229	212	195	177	160	143	125	108	91	73	56	39

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0063929

Drilling Permit No. 915314-863938

Water right or injection well # 63-32236

2. OWNER: Johnson Research

Name

Address 24007 Hwy 20-26

City Parma State ID Zip 83660

3. WELL LOCATION:

Twp. 05 North ☒ or South ☐ Rge. 04 East ☐ or West ☒

Sec. 6 1/4 SE 1/4 SW 1/4

Gov't Lot County Canyon

Lat. 43 47.387 (Deg. and Decimal minutes)

Long. 116 51.820 (Deg. and Decimal minutes)

Address of Well Site East end of Walker Road

city Parma

(Give at least name of road + Distance to Road or Landmark)

Lot Blk. Sub. Name

4. USE:

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

5. TYPE OF WORK:

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

6. DRILL METHOD:

☐ Air Rotary ☐ Mud Rotary ☐ Cable ☒ Other Reverse

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
3/8" Bentonite	0	286	40,000	Dry pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
16	+2	309	.375	Steel	☒	☐	☒
12	320	330	.375	Steel	☒	☐	☒
12	340	350	.375	Steel	☒	☐	☒
12	370	390	.375	Steel	☒	☐	☒

Was drive shoe used? ☐ Y ☒ N Shoe Depth(s)

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N MethodManufactured screen ☒ Y ☐ N Type Johnson Wire Wrap

Method of installation Lower in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
310	320	.030		12	S.S.	
330	340	.030		12	S.S.	
350	370	.030		12	S.S.	

Length of Headpipe Length of Tailpipe

Packer ☐ Y ☒ N Type

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
#8-12 Sand	286	346	12,000	Dry pour
#6-9 Sand	346	425	9,000	Dry pour

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG)

Describe control device

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 191 Static water level (ft) 191

Water temp. (°F) 66.3°

Bottom hole temp. (°F)

Describe access port 2" pipe on side

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
240	1196	30
207	618	480

Test method:

Pump	Bailer	Air	Flowing artesian
☒	☐	☐	☐
☐	☐	☐	☐

Water quality test or comments:

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	4	Top soil		X
24	4	28	Hard tan clay		X
24	28	60	Coarse sand		X
24	60	85	Tan clay		X
24	85	107	Fine-coarse sand		X
24	107	140	Tan clay		X
24	140	219	Med-coarse sand	X	
24	219	235	Brown clay		X
24	235	257	Coarse sand	X	
24	257	262	Brown, tan clay		X
24	262	268	Coarse sand	X	
24	268	273	Brown, tan clay		X
24	273	280	Coarse sand	X	
24	280	294	Blue clay		X
24	294	295	Fine-coarse sand	X	
24	295	307	Blue clay		X
24	307	315	Fine blue sand	X	
20	315	321	Fine blue sand	X	
20	321	332	Blue clay		X
20	332	340	Fine-coarse sand	X	
20	340	348	Blue clay		X
20	348	370	Fine-coarse sand	X	
20	370	390	Blue clay		X
20	390	415	Coarse sand, pea gravel	X	
20	415	425	Blue clay		X

NOTE 16"x12" Reducer 309 to 315

OCT 12 2012

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 410'

Date Started: Aug 1, 2012

Date Completed: Sep 14, 2012

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 Riverside Inc

Co. No. 333

*Principal Driller

Date 10/10/12

*Driller

Date 10-8-12

Operator II

Date 10-10-12

Operator I

Date 10/9/12

* Signature of Principal Driller and rig operator are required.

Company: Riverside Inc
Name: Jeff Johnson
Date: 10/18/2012

JOHNSON RESEARCH



Pump:

Size: 9CLE (11 stage)
Type: TURBINE
Synch speed: 1800 rpm
Curve:
Specific Speeds:
Dimensions:
Vertical Turbine:
Speed: 1770 rpm
Dia: 6.88 in
Impeller:
Ns: 2290
Nss: —
Suction: 6 in
Discharge: — in
Bowl size: 9.25 in
Max lateral: 0.88 in
Thrust K factor: 4.9 lb/ft

Search Criteria:

Flow: — US gpm
Head: — ft
Fluid:
Water
SG: 1
Viscosity: 1.105 cP
NPSHa: — ft
Temperature: 60 °F
Vapor pressure: 0.2563 psi a
Atm pressure: 14.7 psi a

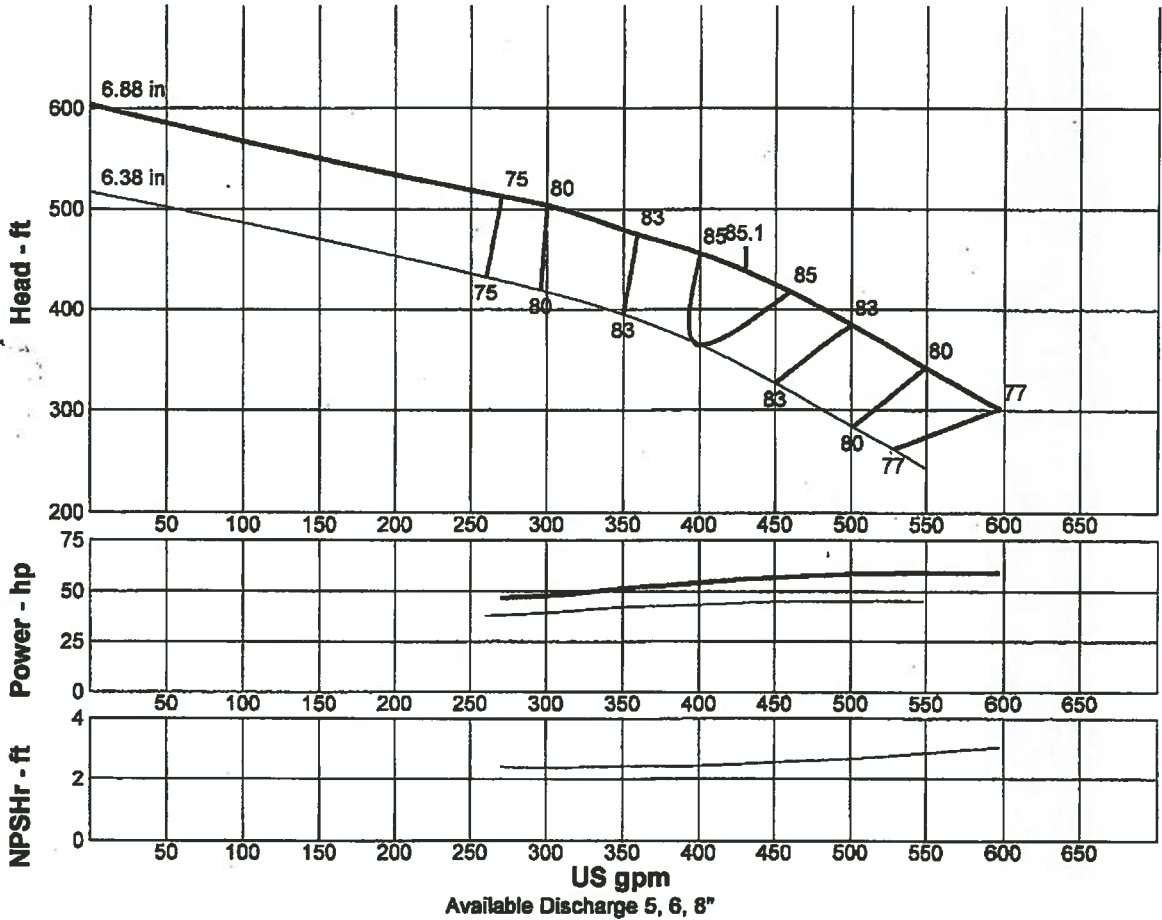
Motor:

Standard: NEMA
Enclosure: WP1
Sizing criteria: Max Power on Design Curve
Size: 60 hp
Speed: 1800
Frame: 364

Pump Limits:

Temperature: 120 °F
Pressure: 400 psi g
Sphere size: 0.56 in
Power: — hp
Eye area: — in²

Design Point	
Flow:	430 US gpm
Head:	439 ft
Eff:	85.1%
Power:	56 hp
NPSHr:	2.53 ft
Performance Curve	
Shutoff head:	604 ft
Shutoff dP:	261 psi
Min flow:	— US gpm
BEP:	85.1% @ 430 US gpm
NOL power:	59.3 hp @ 549 US gpm
Max Curve	
Max power:	59.3 hp @ 549 US gpm



column =
col 6 ft = 300'

Performance Evaluation

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
574	1770	321	78.4	59.1	2.97
478	1770	403	84.1	57.8	2.64
382	1770	465	84.1	53.2	2.45
287	1770	508	77.8	47.2	2.4
191	1770	539	61.8	43.7	2.44

ATTACHMENT C
PIVOT SPECIFICATIONS

Pivot 1

Pivot Area: **26.94** acres
 Endgun Area: **3.23** acres
 Total Area: **30.17** acres

System Length: **737.17** ft
 # of Spans: **5 + overhang**
 Deg. of Sweep: **247.4°**
 Endgun Throw: **100.0** ft

Color on map:



Spans

# of Spans: 5	Span 1 (158.1)	Span 2 (315.2)	Span 3 (450.2)	Span 4 (585.2)	Span 5 (720.2)	Overhang (737.2)
Length:	157	157	135	135	135	11 ft
Pipe Size:	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	6 - 5/8"	5 - 9/16"

Endgun Areas

Endgun 1: (Throw = 100.0 ft)

# of Areas: 4	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	309.6° / 332.8°	6.9° / 30.1°	43° 47' 57.058" -116° 52' 5.433"	43° 47' 58.893" -116° 52' 2.278"	0.73
Area 2	25.5° / 60.3°	82.8° / 117.6°	43° 47' 58.987" -116° 51' 53.363"	43° 47' 56.025" -116° 51' 48.958"	1.10
Area 3	117.4° / 154.8°	174.7° / 212.1°	43° 47' 49.065" -116° 51' 48.759"	43° 47' 45.820" -116° 51' 53.415"	1.18
Area 4	156.4° / 163.3°	213.7° / 220.6°	43° 47' 45.739" -116° 51' 53.661"	43° 47' 45.438" -116° 51' 54.793"	0.22

Pivot 3

Pivot Area: **8.14** acres
 Endgun Area: **0.89** acres
 Total Area: **9.04** acres

System Length: **522.33** ft
 # of Spans: **3 + overhang**
 Deg. of Sweep: **149.0°**
 Endgun Throw: **80.0 & 40.0** ft

Color on map:



Spans

# of Spans: 3	Span 1 (180.2)	Span 2 (337.3)	Span 3 (494.3)	Overhang (522.3)
Length:	179	157	157	22 ft
Pipe Size:	6 - 5/8"	6 - 5/8"	6 - 5/8"	5 - 9/16"

Endgun Areas

Endgun 1: (Throw = 80.0 ft)

# of Areas: 3	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	21.7° / 22.8°	27.8° / 28.9°	43° 47' 44.679" -116° 51' 55.313"	43° 47' 44.642" -116° 51' 55.188"	0.02
Area 2	34.6° / 54.7°	40.7° / 60.8°	43° 47' 44.132" -116° 51' 53.902"	43° 47' 42.866" -116° 51' 52.134"	0.36
Area 3	80.5° / 95.5°	86.6° / 101.6°	43° 47' 40.739" -116° 51' 50.924"	43° 47' 39.392" -116° 51' 50.858"	0.27

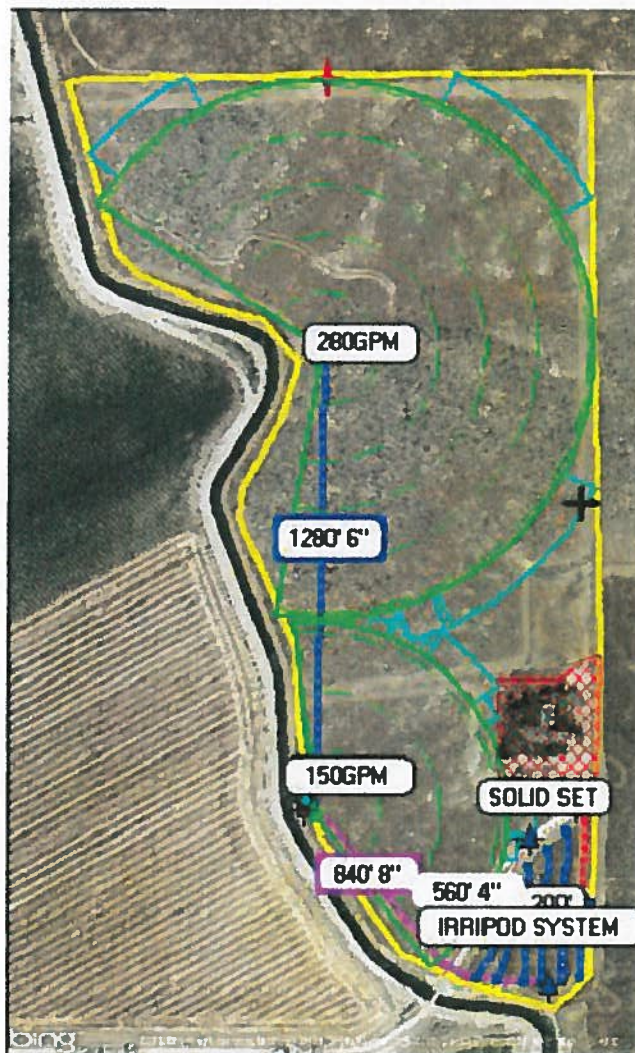
Endgun 2: (Throw = 40.0 ft)

# of Areas: 6	Start / Stop Angle (Deg. from North)	Start / Stop Angle (Deg. from Pivot Start)	Start / Stop Location (Lat/Long)		Area (acres)
Area 1	15.3° / 21.7°	21.4° / 27.8°	43° 47' 44.862" -116° 51' 56.066"	43° 47' 44.679" -116° 51' 55.313"	0.06
Area 2	22.8° / 26.3°	28.9° / 32.4°	43° 47' 44.642" -116° 51' 55.188"	43° 47' 44.513" -116° 51' 54.797"	0.03
Area 3	31.8° / 34.6°	37.9° / 40.7°	43° 47' 44.272" -116° 51' 54.197"	43° 47' 44.132" -116° 51' 53.902"	0.02
Area 4	54.7° / 61.5°	60.8° / 67.6°	43° 47' 42.866" -116° 51' 52.134"	43° 47' 42.347" -116° 51' 51.689"	0.06
Area 5	79.6° / 80.5°	85.7° / 86.6°	43° 47' 40.812" -116° 51' 50.941"	43° 47' 40.739" -116° 51' 50.924"	0.01
Area 6	95.5° / 102.8°	101.6° / 108.9°	43° 47' 39.392" -116° 51' 50.858"	43° 47' 38.739" -116° 51' 51.003"	0.06



Enter Description Title

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ATTACHMENT D
PHOTOS



Figure 1: 16-inch Well and Vertical Turbine Pump

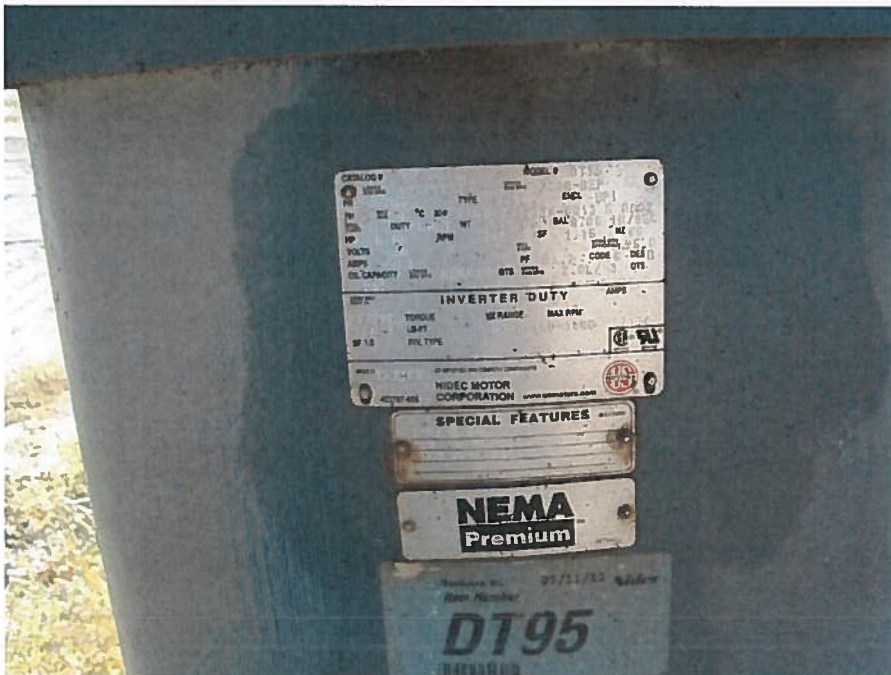


Figure 2: Pump Plate



Figure 3: Pump Meter



Figure 4: VFD Motor



Figure 5: 8-inch Well



Figure 6: Domestic Landscape Irrigation

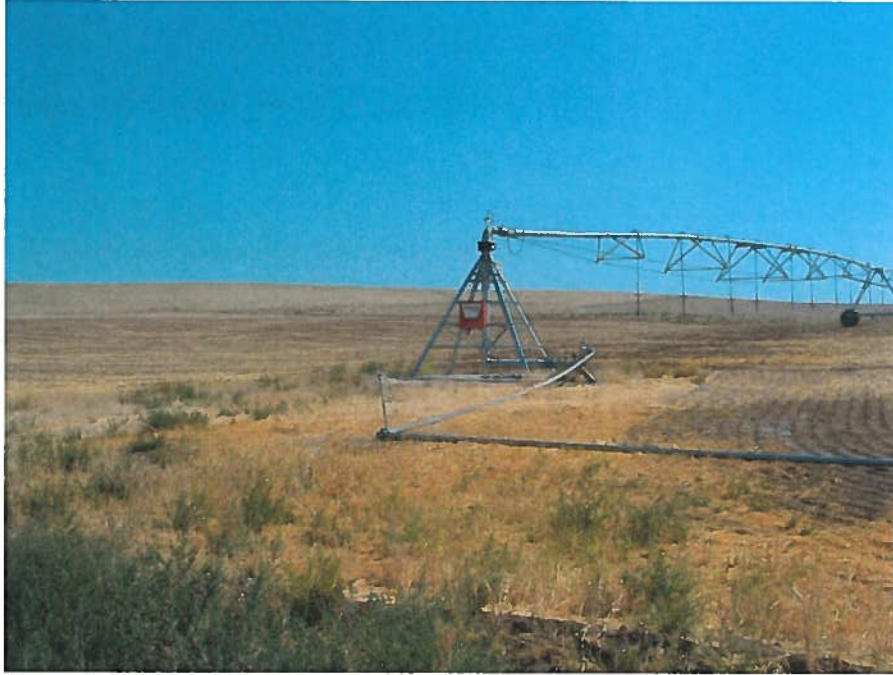


Figure 7: North Pivot



Figure 8: South Pivot



Figure 9: Handline Sprinklers