

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-11666

Exam Date: 6/14/2016

1. Current Owner:
RYAN FORNSTROM 3544 N HARTLEY RD EAGLE ID 83616 307-214-5448

2. Accompanied by: Ryan Fornstrom
Phone No: 307-214-5448
Address: 3544 Hartley Rd Eagle Id 83616
Relationship to Permit Holder: Self

3. **SOURCE:** GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
2. Other water rights with the same point-of-diversion:

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER SE¼SE¼ Sec. 34, Twp 05N, Rge 01W, B.M. ADA County

Method of Determination: GPS'd at Field exam and WR file

2.

PLACE OF USE: DOMESTIC

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	01W	34																X	

Method of Determination: Field exam and ArcMap

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
NA	Unknown	3/4	Unknown	Unknown	Unknown
A0017535	Unknown	3	Unknown	Unknown	Unknown

*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
Pressure gage						

2. Measurements: 60 PSI on owners pressure gage.

E. FLOW CALCULATIONS

Measured Method:

 X Additional Computation Sheets Attached

$$8.8 \times .70 \times .75 = 4.62$$

$$50 + (60 \times 2.31) = 188.6$$

$$4.62/188.6 = 0.02 \text{ cfs for domestic}$$

Permit was limited to 0.15 cfs

I measured one 5/8 " nozzle sprinkler with 42 PSI. This was off of the irrigation well. The pump is set at 73 ft. Since the systems are tied together and this well provides the highest rate this will be used as the limiting factor. Performance data sheet for a 5/8 " nozzle at 40 PSI will produce 65.4 GPM. The data plate said that it was a 3/4 hp pump. However a 3/4 hp pump could not run the big gun nozzle. $65.4/448.83 = 0.15 \text{ cfs}$. The theoretical shows that a 3 hp pump will supply what was measured from a 30' pumping level. Well logs for the area showed a 30-32' pumping levels with minimal drawdown.

Irrigation right (63-32190) is limited to 0.09 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for Domestic Use:

$$V_{D.R} = [\text{Diversion Rate (cfs)}] \times (\text{Days in year}) \times 1.9835 =$$

$$0.02 \times 365 \times 1.9835 = 14.5 \text{ af}$$

According to the field examiners handbook 0.6 af will be used for one home with no acres irrigated

G. NARRATIVE/REMARKS/COMMENTS

This application had a domestic beneficial use associated with it from the beginning. It was advertised with it. There was a claim filed for the same water usage under 63-8289. The irrigation portion was split into 63-31290. The domestic portion of this application was separated from the irrigation under 63-11916 due to the moratorium in basin 63. Proof due notice was sent for 63-11916 on June 30, 1994. Permit 63-11916 lapsed on Sep 7, 1994. The department received an assignment of permit for 63-11666 in April 2010. The statement of completion Received June 11, 2010 was for 5 acres and 1 domestic. During the field exam it was discovered that there was no additional acres of irrigation developed beyond what was already decreed under WR 63-32190. Therefore this permit (63-11666) will be amended to cover the domestic use originally developed. I will leave both wells on this right to cover the stock portion of the domestic use. This will have to be for internal use since the irrigation use is covered under 63-32190. The POU comparison showed that this permit falls within the City of Eagle's Municipal Rights. It also falls within the Farmers Union Ditch Co LTD area of responsibility. The applicant receives no water from either entity. Aerial imagery only shows 2.0 acres irrigated, although the proof statement shows 5 acres of irrigation. The field exam revealed that he was actually irrigating 2.3 acres. Right 63-32190 authorizes the irrigation of 4.5 acres. The POD comparison shows several irrigation rights in the same legal description. WR 63-32190 is the only one diverted from the same parcel but from a second well. This irrigation well was Tagged with A0017535 and GPS'd.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 to 12/31	0.02 CFS	0.6 AF
	<u>Totals:</u>	0.02 CFS	0.6 AF

2. Recommended Amendments

☒ Change use from irrigation to domestic use

I. AUTHENTICATION

Field Examiner's Name Clay Webster  Date 7/12/2016

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment to Field Exam
63-11666

This map depicts the DOMESTIC place of use boundary for this water right at the time of this exam and is attached solely for illustrative purposes.

01W



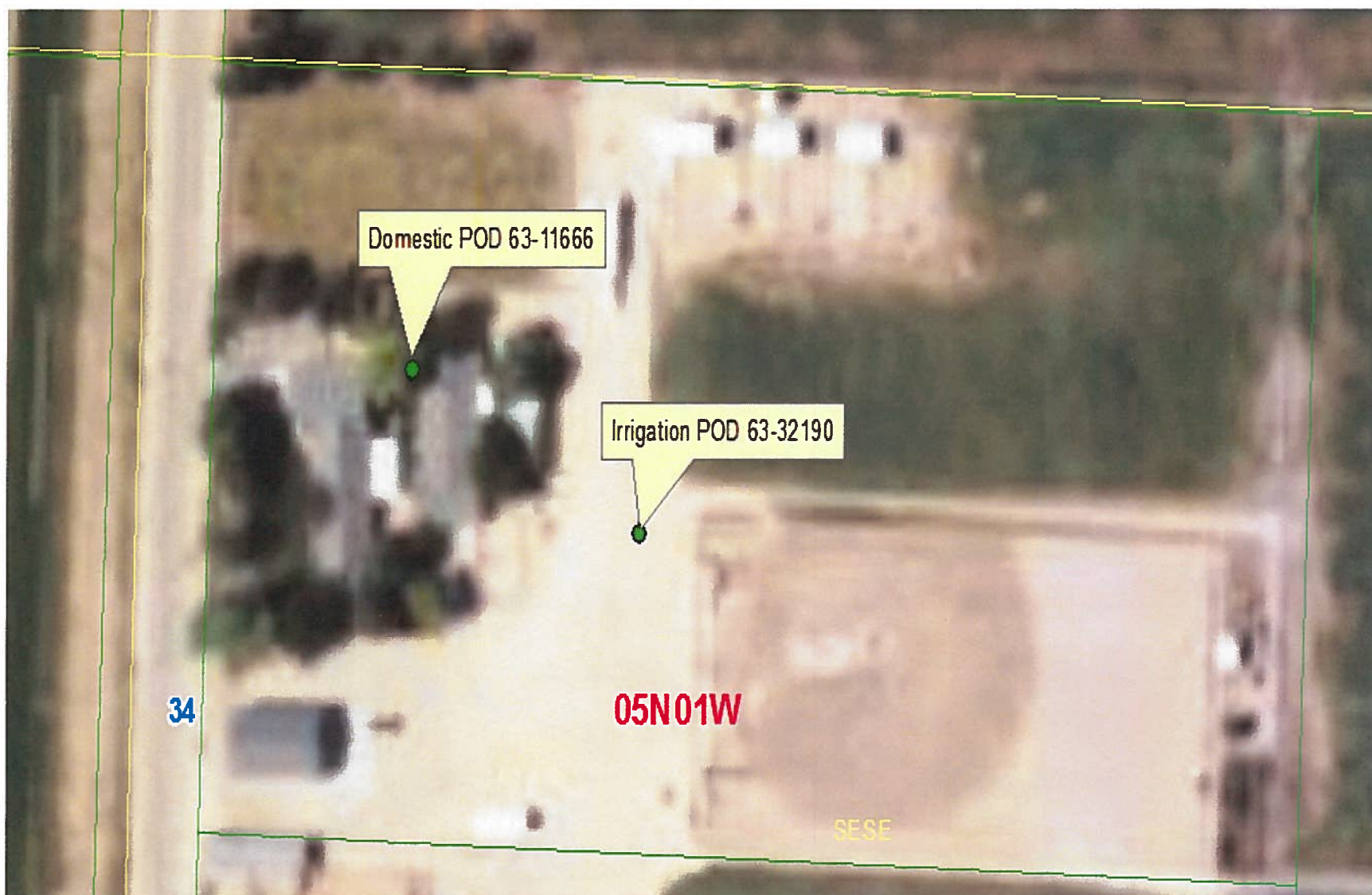
-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections

0 0.0125 0.025 0.05 Miles



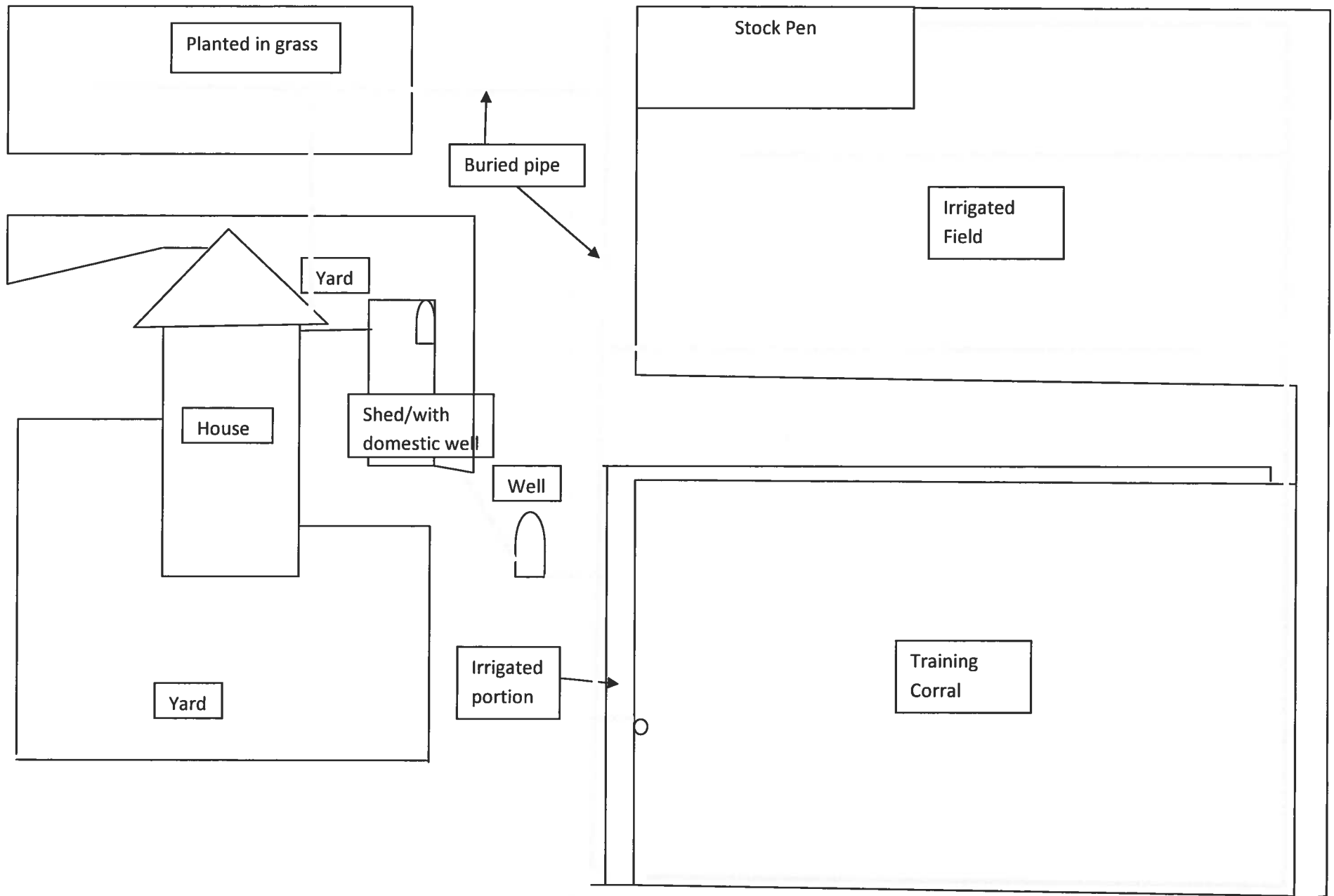


Layout Map of 63-11666



63-11666

63-11666 Diagram



Overlap analysis

TRS	Process	BasinSequence	Draft	Owner	Source	PODPOU	Use	SESE	TotalAcres	
05N01W34	Water Permit	63-11666	N	FORNSTROM, RYAN; LILLQUIST, MARILYN A; LILLQUIST, ST	GROUND WATER	POU	IRRIGATION	5	5	
05N01W34	Water Right	63-10841	N	HENDERSON, ARTHUR F	GROUND WATER	POU	IRRIGATION	7	7	East of this location
05N01W34	Water Right	63-2858A	N	VAN HOOVER, C L; VAN HOOVER, ZELLA V	GROUND WATER	POU	IRRIGATION	2	2	South East of location
05N01W34	Water Right	63-2858B	N	TAYLOR, JERRY S; TAYLOR, MARY L; VAN HOOVER, C L	GROUND WATER	POU	IRRIGATION	8	8	East of this location
05N01W34	Water Right	63-2942	N	BAILEY, MARY A; OXFORD, GEORGE C	GROUND WATER	POU	IRRIGATION	5	5	South East of location
05N01W34	Water Right	63-32189	N	SWEENEY, GLADYS F; SWEENEY, HARROLD; TAYLOR, JERRY	GROUND WATER	POU	IRRIGATION	8	8	East of this location
05N01W34	Water Right	63-32190	N	LILLQUIST, MARILYN A; SWEENEY, GLADYS F; SWEENEY, H	GROUND WATER	POU	IRRIGATION	4.5	4.5	Same Location
05N01W34	Water Right	63-3296	N	HOWE, THOMAS S; TAYLOR, JERRY S; TAYLOR, MARY L	GROUND WATER	POU	IRRIGATION	9	9	South of loacation
05N01W34	Water Right	63-33859	N	FLACK, JUNE C; FLACK, WILLIAM M; MC PHERSON, J C; MC	GROUND WATER	POU	IRRIGATION		10	North West of Location
05N01W34	Water Right	63-33860	N	FLACK INVESTMENTS LLC; FLACK, JUNE C; FLACK, WILLIAM	GROUND WATER	POU	IRRIGATION		11	West of location

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-11666 Domestic well
 Reviewer: Clay Webster
 Date of Review: 6/16/2016

P/D No.:	Well #1	Well #2	Well #1 Full Drawdown	
PUMP HORSEPOWER	0.75	0.75	0.75	
BOOSTER HORSEPOWER	0	0	0	
PUMPING LEVEL	40	50	60	
DISCHARGE PRESSURE	60	60	60	
RATE OF FLOW (cfs)	0.03	0.02	0.02	0.02
	12	11	10	11.01

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

This is for the domestic well. The applicant stated that this pump was set at 60 ft. He also stated that it is a 3/4 hp pump. A 3/4 Hp motor is reasonable for this system. With the minimal drawdown noted in this area a pumping level of 50 - 60 ft, I would use the 0.02 cfs for rate.

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 63-11666 irrigation well
 Reviewer: Clay Webster
 Date of Review: 6/16/2016

P/D No.:	Well #1	Well #2	Well #1 Full Drawdown
PUMP HORSEPOWER	0.75	3	5
BOOSTER HORSEPOWER	0	0	0
PUMPING LEVEL	30	30	30
DISCHARGE PRESSURE	42	42	42
RATE OF FLOW (cfs)	0.04 16	0.15 65	0.24 109
			0.14 63.48

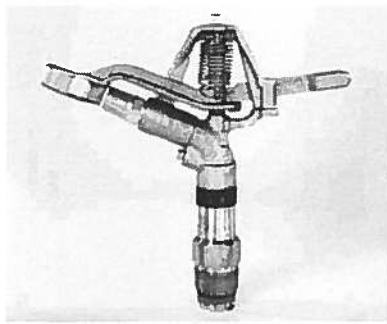
The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

Though the tag said it wa a 3/4 hp pump this size of pump will not produce what was measured. This shows that a 3 hp pump will supply what was measured from a 30' pumping level. Well logs for the area showed a 30-32' pumping levels with minimal drawdown. I would use the 0.15 cfs for rate.



80EHD

1 1/4" 32 mm Full Circle, Brass Impact Sprinkler

Bearing: 1 1/4" Male NPT, Brass

Trajectory Angle: 27°

Operating Range: 25-100 psi 1.7-6.9 bars

Flow Rate: 17.1-127.7 GPM 2.88-2.9 m³/h

Radius: 61-116 ft. 18.6-35.4 meters

Features

- Heavy duty brass construction
- Internal plastic straightening vane
- Stainless steel springs and fulcrum pin
- Plastic bearing hood
- Chemically resistant washers

U.S. STANDARD DATA

PERFORMANCE DATA

80EHD

STRAIGHT BORE NOZZLE (SBN-5) WITH PLUG* (Stream Height: 14 ft.)

PSI @ Nozzle	NOZZLE SIZE US STANDARD									
	11/32"	3/8"	13/32"	7/16"	15/32"	1/2"	17/32"	9/16"	5/8"	11/16"
Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM	Rad. GPM
25	61 17.10	62 20.30	64 23.40	66 26.70	66 30.30	66 33.80	66 37.10	66 42.30	66 51.50	66 61.90
30	64 18.80	65 22.30	68 25.70	69 29.30	72 33.20	73 37.10	73 40.80	73 46.40	73 56.50	73 68.10
35	67 20.30	68 24.10	72 27.80	74 31.70	77 35.90	79 40.10	79 44.10	79 50.20	79 61.10	79 73.80
40	69 21.80	71 25.80	75 29.70	77 33.90	80 38.50	83 42.90	83 47.20	86 53.70	86 65.40	86 79.20
45	71 23.10	73 27.40	77 31.60	79 36.00	82 40.80	85 45.60	88 50.10	90 57.10	92 69.50	92 84.20
50	73 24.40	75 28.90	79 33.30	81 38.00	84 43.10	87 48.10	90 52.90	94 60.20	95 73.30	97 88.90
55	75 25.50	77 30.30	81 34.90	83 39.70	86 45.30	89 50.30	92 55.60	96 63.20	99 77.30	100 93.50
60	77 25.80	79 30.80	83 35.90	86 41.60	88 47.40	91 53.00	94 58.80	97 65.50	101 80.10	104 97.80
65	79 26.90	81 32.00	84 37.40	87 43.30	90 49.90	93 55.30	96 61.20	99 69.40	102 84.40	106 102.00
70	81 28.10	83 33.30	86 38.90	89 45.10	91 51.40	94 57.50	98 63.50	101 72.20	104 87.80	108 106.00
75	82 29.20	84 34.50	87 40.30	90 46.80	93 53.30	96 59.60	99 65.80	102 74.90	105 91.00	109 109.90
80	83 30.40	86 35.70	89 41.80	92 48.40	94 55.10	97 61.60	101 68.10	104 77.50	107 94.10	110 113.70
85	85 31.50	87 37.00	90 43.20	93 50.00	96 56.90	99 63.50	102 70.30	105 80.00	108 97.10	112 117.30
90	86 32.70	89 38.30	92 44.60	95 51.50	97 58.50	100 65.30	104 72.40	106 82.20	110 99.90	113 120.90
95	87 33.90	90 39.50	93 46.00	96 53.00	98 60.00	101 67.10	105 74.40	108 84.30	111 102.60	115 124.30
100	88 34.00	91 40.70	94 47.40	97 54.50	99 61.50	102 68.90	106 76.40	109 87.20	112 105.20	116 127.70

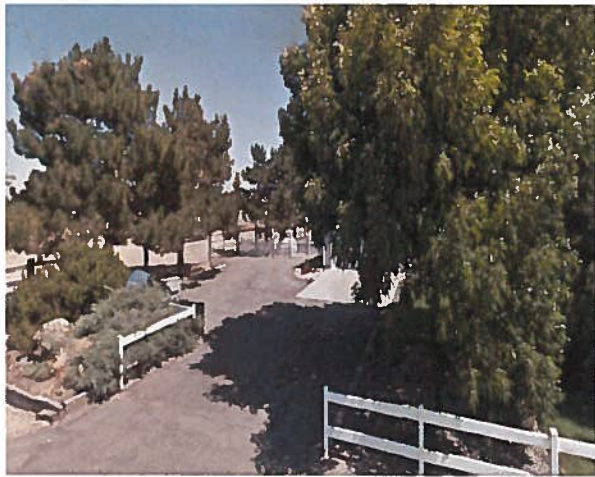
* Nozzle and plugs must be purchased separately.

STRAIGHT BORE NOZZLE (SBN-5) AND SPREADER (LAN-1-20)* (Stream Height: 14 ft.)

NOZZLE SIZE US STANDARD				
11/32"	3/8"	13/32"	7/16"	15/32"



Lawn irrigation



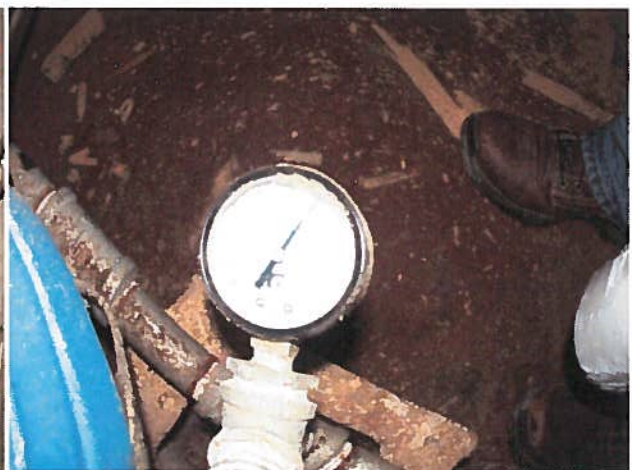
Planters and tree line



Domestic well inside shed



Domestic well controls



60 PSI on domestic system



House pump is ¾ HP Pump set at 60 feet`



Irrigation Well for WR 63-32190 tag A0017535



Grundfos ¾ HP Pump



Irrigation pasture



Corral



Spray King Sprinkler used for dust abatement for corral



5/8 inch nozzle on sprinkler