

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 15-07294
Exam Date: 06/30/2016

1. Current Owner:

ANTON JENSEN 99 N 4400 W MALAD CITY ID 83252 (208) 479-6412 And

LACIE JENSEN 99 N 4400 W MALAD CITY ID 83252 And

NORTHWEST FARM CREDIT SERVICES FLCA PO BOX 386 PRESTON ID 83263

2. Accompanied by: Anton Jensen

Phone No: 208 479 6412

Relationship to Permit Holder: Same

3. SOURCE:

GROUND WATER

TRIBUTARY:

B. OVERLAP REVIEW

1. Other water rights with the same place of use: Claim 15-7429, split from claim 15-4163.
2. Other water rights with the same point-of-diversion: None

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

GROUND WATER SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 23, Twp 14S, Rge 35E, B.M. ONEIDA County

Method of Determination: GPS and ArcMap

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	
14S	35E	23																X	

PLACE OF USE: STOCKWATER

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
14S	35E	23																X	

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
14S	35E	23																22.0	22.0

Total Acres: 22.0

Method of Determination: Aerial photography and ArcMap

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.

X Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.

X Aerial Photo Attached (required for irrigation of 10+ acres).

X Photo of Diversion and System Attached

4. Well Information

15 HP submersed pump.

D. FLOW MEASUREMENTS

No direct measurement could be taken because there was not enough straight pipe on which to place an ultrasonic flowmeter. A theoretical discharge is considered below.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

A theoretical measurement based on the PSI and system's design is contemplated below.

The observed PSI was between 52 and 57, it averaged at 55. The system consisted of one wheel line with 32 sprinklers that had 5/32" nozzles, and one 1/2" nozzle water cannon.

According to the attached "Sprinkler System Discharge – Exhibit 9," each sprinkler with 5/32" nozzle produces 5.39 gpm at 55 psi.

5.39 gpm/sprinkler * 32 sprinklers/wheel line = 172.5 gpm/wheel line

The closest match to the theoretical discharge from a water cannon with a 1/2" nozzle and 55 psi that could be located in the Department's Field Examiner's Handbook was a water cannon with a 0.55" nozzle sprinkler at 51 psi. According to the attached document, that sprinkler yields 61 gpm.

172.5 gpm + 61 gpm = 233.5 gpm produced by the system.

233.5 gpm / 448.83 gpm/cfs = 0.52 cfs

The right will be limited to 0.50 cfs based on 0.02 cfs/acre on 22.0 acres, plus 0.04 cfs for domestic use and 0.02 cfs for stockwater use.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation: 77.0 AFA

$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 22.0 \text{ acres} \times 3.5 \text{ AFA} = 77.0 \text{ AFA}$

$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.44 \text{ cfs} \times 1.9835 \times 214 \text{ days} = 186.8 \text{ AF}$

$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 77.0 \text{ AFA}$

2. Volume Calculations for Other Uses: 0.7 AFA

Domestic in-home use: 0.6 AFA

Stockwater use: 0.1 AF

1 beef cow * 13 gallons/day/cow * 365 days/year = 4,745 gallons/year for the cow

10 chickens * 1 gpd/chicken * 365 days/year = 365 gallons/year for chickens

3 goats * 2 gpd/goat * 365 days/year = 2,190 gallons/year for goats

4,745 + 365 + 2,190 = 7,300 gallons/year/stockwater

7,300 gallons/year / 325,850 gallons/AF = 0.02 AFA. Given the department's standard to round to the tenth decimal place for acre feet, and given that stockwater was developed under the right, the amount of water licensed for stockwater will be 0.1 acre feet.

G. NARRATIVE/REMARKS/COMMENTS

This permit was split at licensing into 15-7294 (24.9 acres authorized) and 15-7426 (15 acres authorized). 22 acres of irrigation were developed under license 15-7294, which was licensed separately from 15-7426.

At the time of this license's issuance, the proof due date for 15-7426 was still in the future.

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>
IRRIGATION	04/01 to 10/31	0.44 CFS	77.0 AF
DOMESTIC	01/01 to 12/31	0.04 CFS	0.6 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.1 AF
	<u>Totals:</u>	0.500 CFS	77.7 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

Field Examiner's Name Cooper Fritz Date 8/7/2017

Reviewer _____ Date _____

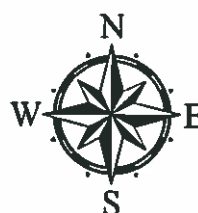
15-7294 Place of Use and Point of Diversion at Licensing



2015 Imagery

Legend

- Water Right POD
- Water Right POU
- Township/Range
- Sections
- QQ



0 0.075 0.15 0.3 Miles



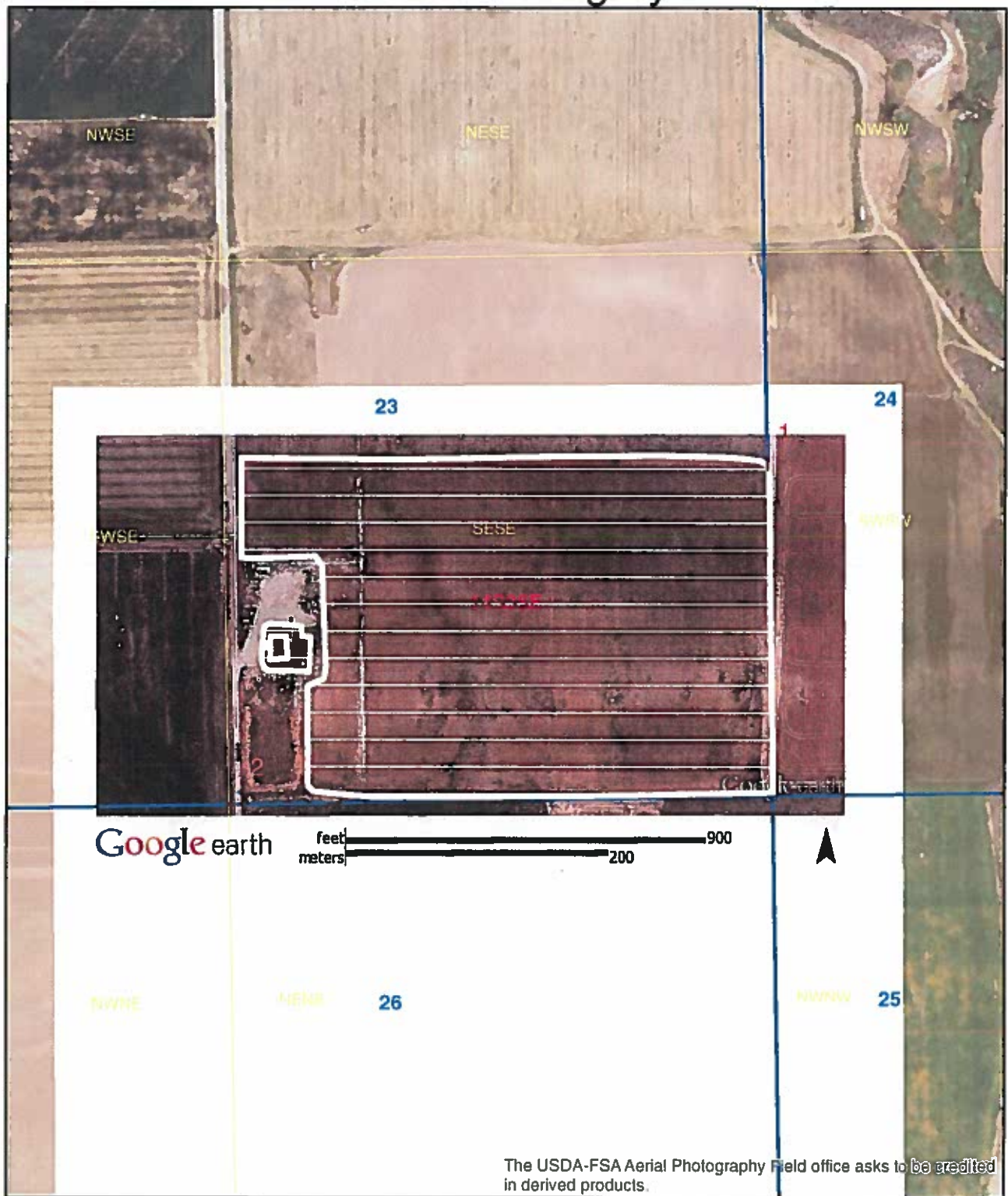
Google earth

feet 1000
meters 400



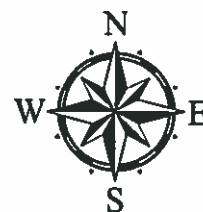
7/19/2016 Imagery

2016 Google Earth Imagery Superimposed in ArcMap on 2015 Imagery



Legend

- Water Right POU
- Township/Range
- Sections
- QQ



0 0.05 0.1 0.2 Miles









SPRINKLER SYSTEM DISCHARGE

NOZZLE DISCHARGE - GALLONS PER MINUTE							
psi	3/32	1/8	9/64	5/32	11/64	3/16	13/64
20	1.17	2.09	2.65	3.26	3.92	4.69	5.51
25	1.31	2.34	2.96	3.64	4.38	5.25	6.16
30	1.44	2.56	3.26	4.01	4.83	5.75	6.80
35	1.55	2.77	3.50	4.31	5.18	6.21	7.30
40	1.66	2.96	3.74	4.61	5.54	6.64	7.80
45	1.76	3.13	3.99	4.91	5.91	7.03	8.30
50	1.85	3.30	4.18	5.15	6.19	7.41	8.71
55	1.94	3.46	4.37	5.39	6.48	7.77	9.12
60	2.03	3.62	4.50	5.65	6.80	8.12	9.56
65	2.11	3.77	4.76	5.87	7.06	8.45	9.92
70	2.19	3.91	4.96	6.10	7.34	8.78	10.32
75	2.27	4.05	5.12	6.30	7.58	9.08	10.66
80	2.35	4.18	5.29	6.52	7.84	9.39	11.02
85	2.42	4.31	5.45	6.71	8.07	9.67	11.35
90	2.49	4.43	5.61	6.91	8.31	9.95	11.69
95	2.56	4.56	5.76	7.09	8.53	10.20	11.99
100	2.63	4.67	5.91	7.29	8.76	10.50	12.32

AVERAGE APPLICATION RATE - INCHES PER HOUR

Spacing in Feet	Discharge From Each Sprinkler						
	2 gpm	3 gpm	4 gpm	5 gpm	6 gpm	7 gpm	8 gpm
20x20	0.48	0.72	0.96	1.20	1.44	1.70	1.95
20x30	0.32	0.48	0.64	0.80	0.96	1.12	1.28
20x40	0.24	0.36	0.48	0.60	0.72	0.84	0.96
30x30	0.21	0.32	0.43	0.54	0.64	0.75	0.88
30x40	0.16	0.24	0.32	0.40	0.48	0.56	0.64
30x50	0.13	0.19	0.25	0.32	0.38	0.45	0.51
40x40	0.12	0.18	0.24	0.30	0.36	0.42	0.48
40x50	0.1	0.14	0.19	0.24	0.29	0.34	0.38
40x60		0.12	0.12	0.20	0.24	0.28	0.32

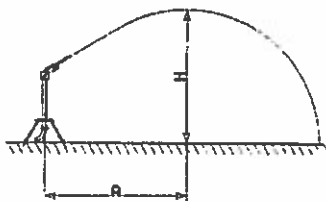
POLARIS										
U		P		G		Q			O	
mm	inch	kg/cm ²	lbs/inch	m	feed	l/min	m ³ /h	G.P.M.	S	I
20	1	4	56	48	151	997	59.8	203	8544	9.0
		5	70	48	160	1110	66.9	295	7339	8.8
		6	85	52	170	1223	73.3	323	8494	8.6
		7	100	55	181	1318	79.0	348	9498	8.3
26	1,10	4	56	48	157	1132	67.9	300	7238	9.4
		5	70	50	164	1288	75.9	324	7853	8.8
		6	85	54	177	1380	83.1	360	9158	8.0
		7	100	58	190	1498	99.7	395	10567	8.5
30	1 3/16	4	56	48	180	1278	76.7	339	7539	10.2
		5	70	52	170	1430	85.8	378	8494	10.1
		6	85	56	184	1585	93.9	414	9847	9.5
		7	100	59	192	1688	101	440	10930	8.2
32	1 1/4	5	70	55	181	1602	98.1	423	9498	10.1
		6	85	58	190	1756	105	464	10567	9.9
		7	100	60	197	1892	113	500	11304	9.3
		8	115	62	202	2028	121	536	12670	10
34	1 1/2	5	70	57	187	1788	107	472	10200	10.5
		6	85	60	197	1958	117	517	11364	10.3
		7	100	62	202	2110	126	558	12670	10.4
		8	115	64	200	2283	138	598	12860	10.5

BIG RIVER										
U		P		G		Q			O	
mm	inch	kg/cm ²	lbs/inch	m	feed	l/min	m ³ /h	G.P.M.	S	I
20	.78	3	44	36	119	820	31.2	137	4061	7.6
		4	56	40	132	891	36	159	5026	7.2
		5	70	43	141	973	40.3	178	5808	6.8
		6	85	46	150	1036	44	194	6847	6.6
22	.86	4	56	41	134	704	42.2	166	5281	7.9
		4.5	66	43	141	749	44.8	197	5808	7.7
		5	70	45	147	789	47.3	209	6361	7.4
		6	85	48	157	854	51.8	229	7238	7.1
24	15/16	4	56	43	141	820	49.2	217	5808	8.4
		4.5	66	45	147	871	52.2	230	6381	8.2
		5	70	47	154	918	56	243	6929	7.9
		6	85	50	164	1005	60.3	269	7853	7.6
26	1	4	56	45	147	940	56.7	250	8361	8.9
		5	70	48	157	1058	63.4	280	7238	8.7
		6	85	51	168	1160	69.9	307	8167	8.5
		7	100	53	173	1250	75	320	8820	8.5
28	1,10	4	56	46	151	1081	64.8	288	8844	9.7
		5	70	49	160	1208	72.4	319	7339	9.8
		6	85	52	170	1325	79.5	350	8494	9.3
		7	100	54	177	1430	85.8	378	9166	9.3

MERCURY										
U		P		G		Q			O	
mm	inch	kg/cm ²	lbs/inch	m	feed	l/min	m ³ /h	G.P.M.	S	I
14	.55	2	29	24	73	245	14.7	65	1808	8.1
		3	44	27	82	289	17.9	79	2289	7.8
		4	56	30	91	348	20.7	91	2829	7.4
		5	70	33	100	387	23.2	102	3410	6.8
16	.63	2	29	25	78	297	17.8	78	2123	8.4
		3	44	28	85	363	21.8	90	2461	8.8
		4	56	32	98	420	25.2	111	3215	7.8
		5	70	35	107	489	29.1	124	3848	7.3
18	.71	3	44	32	98	452	27.1	119	3215	8.4
		4	56	35	107	527	31.8	138	3848	8.2
		5	70	38	115	584	35.0	154	4534	7.7
		6	85	41	125	645	38.7	170	5281	7.3
20	.78	3	44	34	104	538	32.3	142	3831	8.9
		4	56	37.5	114	627	37.8	165	4414	8.5
		5	70	41	125	680	40.9	180	5291	7.7
		6	85	44.5	136	789	46.1	203	6217	7.4
22	.86	3	44	36	110	609	36.5	161	4069	8.9
		4	56	39	119	705	42.3	188	4775	8.8
		5	70	43	131	789	47.3	209	5808	8.1
		6	85	46	140	864	51.8	228	6847	7.8

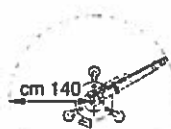
RIVER										
U		P		G		Q			O	
mm	inch	kg/cm ²	lbs/inch	m	feed	l/min	m ³ /h	G.P.M.	S	I
10	.40	2	29	18.5	60	88	5.3	23	1675	4.8
		2.5	37	20	66	99	5.9	26	1256	4.7
		3	44	21	68	108	6.5	28	1384	4.7
		4	56	23	75	125	7.5	33	1681	4.5
12	.47	2.5	37	21	68	143	8.6	38	1384	6.2
		3	44	22	72	155	9.4	41	1519	6.2
		3.5	51	24	78	168	10.2	44	1808	6.8
		4	56	26	85	183	10.8	47	2123	5.1
14	.55	2.5	37	21	68	194	11.6	51	1384	8.3
		3	44	23	75	212	12.8	56	1661	7.7
		3.5	51	26	82	230	13.8	60	2123	6.5
		4.5	66	28	88	260	15.8	68	2461	6.3
16	.63	3	44	27	82	278	16.7	73	2289	7.3
		3.5	51	28	88	296	18.1	79	2461	7.3
		4	56	30	94	320	19.3	84	2826	6.8
		5	70	33	107	356	21.3	94	3419	6.3
18	.71	3	44	28	82	260	21	82	2461	8.5
		4	56	31	102	405	24.3	107	3017	8.0
		5	70	35	108	452	27.1	119	3848	7.0
		6	85	37	114	490	29.7	131	4298	6.9

APOGEO DEL GETTO D'ACQUA
APOGEE OF THE STREAM WATER
APOGÉE DU JET D'EAU
MAXIMALE WASSERSTRAHLHOHE ÜBER GRUND
ALTURA MAXIMA DEL CHORRO DE AGUA DEL SUELO

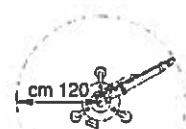


TIPO IRRIGATORE	A (m)	H (m)
POLARIS	36	15
BIG RIVER	30	12
MERCURY	26	9
RIVER	22	10

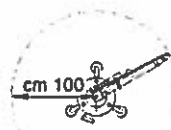
DISTANZA DI SICUREZZA DALL'IRRIGATORE
DISTANCE OF SECURITY BY THE SPRINKLER
DISTANCE DE SÛRETÉ DE L'ARROSEUR
SICHERHEITSSABSTAND VOM REGNER
DISTANCIA DE SEGURIDAD DEL ASPERSOR



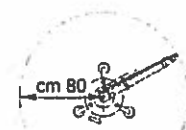
POLARIS



BIG RIVER



MERCURY



RIVER