

Twp	Rge	Sec	NE				NW				SW				SE				
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>Totals</u>
01N	03W	7											X L 6						

Method of Determination: Visual inspection and GIS

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate weir size/pipe id. as applicable.

SEE ATTACHED SHEET

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

YES 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
D0030618	Grundfos	15	UK	submersible	2822039310

*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
N/A						

2. **Measurements:** Performed theoretical calculation. No way to get actual flow measurement by other means.

E. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Measured Method: Measured 10 sprinklers with 1/8 inch nozzles at an average pressure of 30 psi. Field examiners handbook chart states 1/8 inch nozzles at 30 psi = 2.56 gpm per nozzle. Owner stated there is a total of 72 sprinklers running.

$$72 \times 2.56 = 184 \text{ gpm or } .41 \text{ cfs}$$

Theoretical = 0.51 cfs

Sprinkler Test = 0.41 cfs

Permit allowed 0.30 cfs

Rate per acre = 0.0123 cfs

Total irrigated acreage for 57-11628 and 57-11748 = 33.3, system capacity = 0.41 cfs, therefore:
0.41 cfs/33.3 acres = 0.0123 cfs per acre

For 57-11628 the total diversion rate = (25 acres x 0.0123) = 0.3075 or 0.31 cfs

For 57-11748 the total diversion rate = (8.3 acres x 0.0123) = 0.1023 or 0.10 cfs

I recommend the diversion of 0.10 cfs which is the rate per acre.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 8.3 \times 4.5 = 37.4 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.10 \times 260 \times 1.9835 = 51.6 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 37.4 \text{ af}$$

2. Volume Calculations for Other Uses:

No. head of Stock = 25 cows, 3 horses = 28. Per Administrator's 1975 MEMO 26 through 50 head = .02 cfs and 0.7 AF

G. NARRATIVE/REMARKS/COMMENTS

Water is diverted south-southeast from the well to an east-west mainline in the middle of the irrigated land. Water is diverted from the mainline to one and one-half (1 1/2) inch sprinkler lines running north and south supplying water to Nelson Rotor sprinkler heads with one-eighth (1/8) inch nozzles. Each sprinkler is equipped with a pressure regulator.

Sprinkler lines continue south from 25 acres covered by permit 57-11628 with same POD and ownership.

Because the POD and diversion system supplies irrigation for this water right, 57-111748 and water right 57-11628 for a combined total area of 33.3 acres, the per acre diversion rate was determined by dividing the system capacity diversion rate of 0.41 cfs by the total of 33.3 acres serviced by the system. Total diversion rate recommended for the separate water rights was then determined by the per acre diversion rate multiplied by the number of acres covered by each specific water right, 25 acres and 8.3 acres respectively.

Application 57-11748 indicated POD is a 16 inch diameter 200 foot deep well, application 57-11748 indicates the POD is a 12 inch diameter 320 foot deep well. Well log on file with IDWR matching the POD well ID D0030618 indicates actual POD well is a 12 inch diameter 270 foot deep well.

A separate domestic well supplies water for the house and yard.

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	03/01 to 11/15	0.100 CFS	38.10 AF
STOCKWATER	01/01 to 12/31	0.020 CFS	0.700 AF
<u>Totals:</u>		0.300 CFS	
<u>Totals:</u>		0.10 CFS	38.10 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 ☐ Other

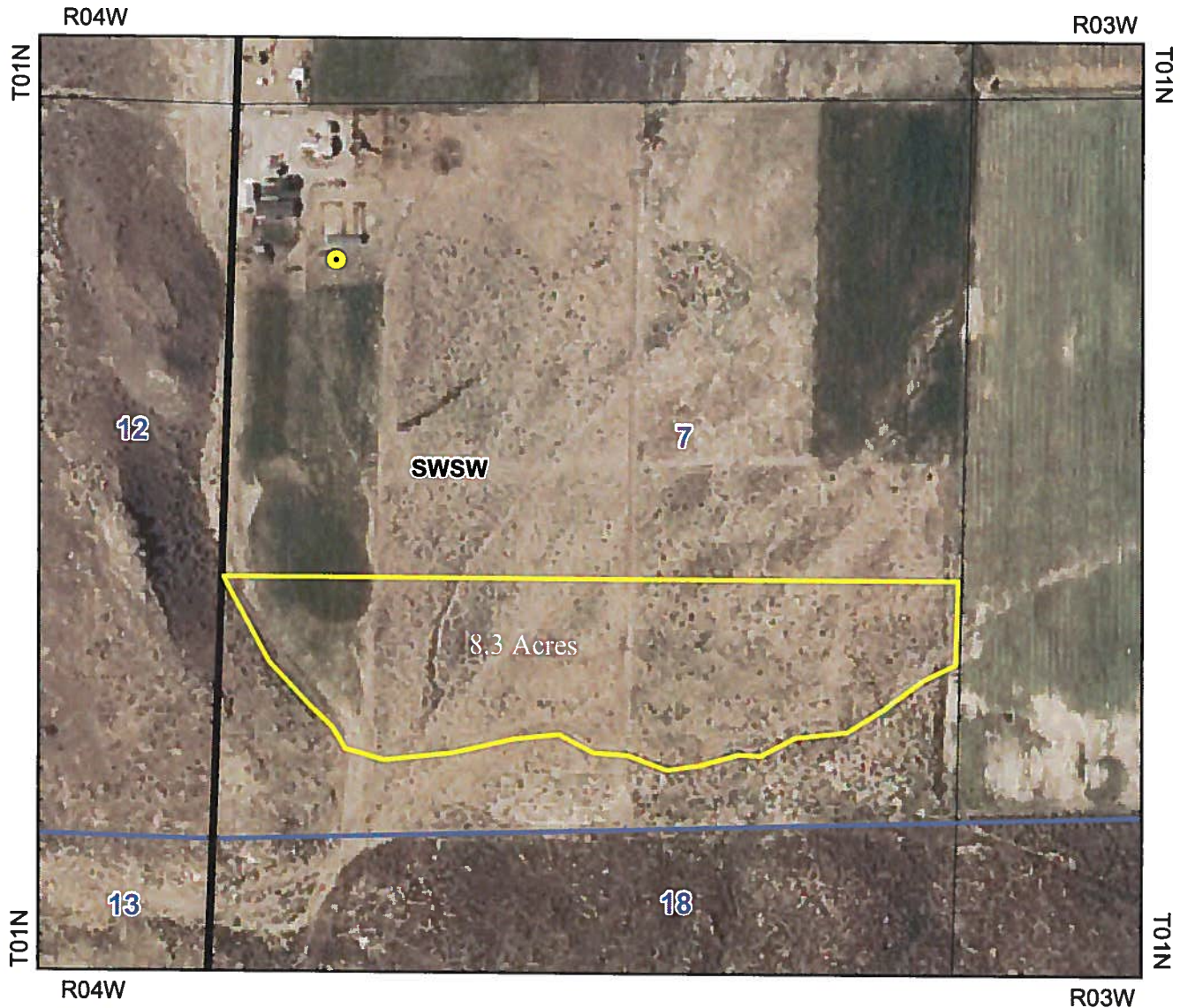
I. AUTHENTICATION Chad F. Hersley, Technical Hydrogeologist

Field Examiner's Name Chad F. Hersley Date 9-21-2012

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Attachment To Water Right License
57-11748

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



0 0.0375 0.075 0.15 Miles

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

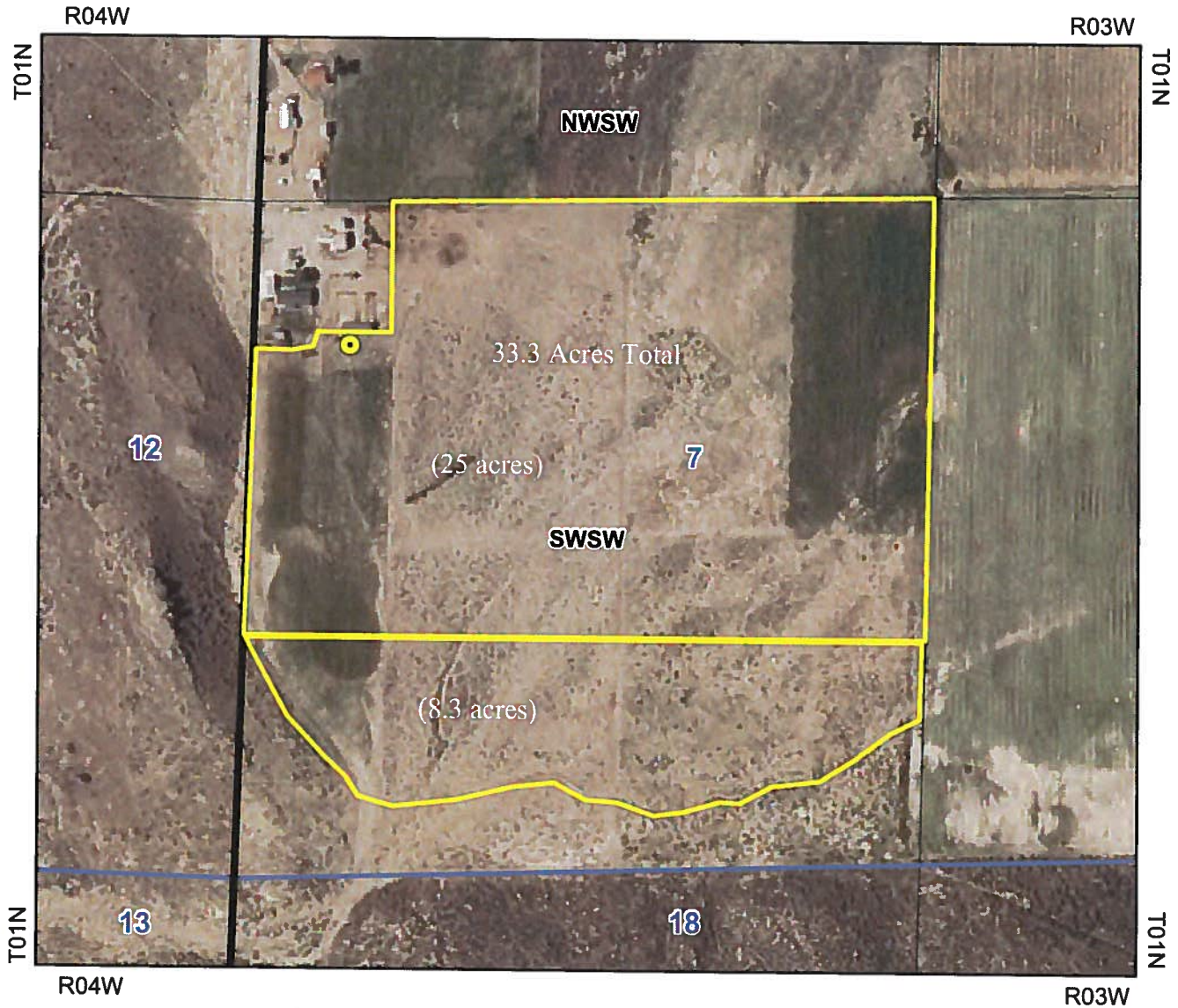


State of Idaho
Department of Water Resources

Attachment To Water Right License

57-11748

This map depicts the STOCKWATER place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



0 0.04 0.08 0.16 Miles

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



April 7, 1975

OPERATIONS DIVISION
ADMINISTRATOR'S MEMORANDUM

TO: District Office
FROM: A. Kenneth Dunn
SUBJECT: Annual Use of Water for Stockwater Purposes

No. of Stock (head)	RANGE CATTLE		DAIRY CATTLE	
	Rate* c.f.s. (1)	Volume AF/yr. (1)	Rate* c.f.s. (2)	Volume AF/yr. (2)
0 - 10	0.02	0.2	0.02	0.4
11 - 25	0.02	0.4	0.02	1.0
26 - 50	0.02	0.7	0.04	2.0
51 - 100	0.03	1.4	0.07	4.0
101 - 200	0.05	2.7	0.13	7.9
201 - 300	0.07	4.1	0.20	12.0
301 - 400	0.09	5.4	0.26	16.0
401 - 500	0.12	6.7	0.33	20.0
501 - 600	0.14	8.1	0.39	24.0
601 - 700	0.16	9.4	0.46	28.0
701 - 800	0.19	11.0	0.52	32.0
801 - 900	0.20	12.0	0.58	36.0
901 - 1000	0.23	14.0	0.65	40.0
1001 - up (3				

12,500 gpd

(1) The amounts shown are based on 12 gpd/head with a 12 month period of use. (i.e. for range cattle, horses and mules). The amount does not include a loss (i.e. thru conveyance, etc.)

2. The amounts shown are based on 35 gpd/head with a 12 month period of use. (i.e. for dairy cattle). The amount does not include a loss. (i.e. thru conveyance, etc.).

3. For annual use calculations which involve more than 1000 head, round the number of head up to the next even one hundred, and

Volume

- a) for livestock use @ 12 gpd/hd, N (0.0134).
- b) for dairy use @ 35 gpd/hd, N (0.0391).

Rate

- a) for livestock use @ 12 gpd/hd, N (0.00022).
- b) for dairy use @ 35 gpd/hd, N (0.00065).

The answer should be rounded up to the nearest whole acre-foot.

*The rate is based upon approx. 2 hr/day diversion to obtain daily requirement.

A. Kenneth Dunn

GROUNDWATER THEORETICAL ANALYSIS

FILE: 57-11748 and 57-11628

DATE: 9/21/12

BY: Chad F. Hersley

THEORETICAL RATE OF FLOW: $Q = \frac{(8.8 \times (HP) \times (EFF.))}{TDH}$

Q = CFS

HP = Total Brake Horsepower of pumping plant (including booster)

Eff. = Pumping plant efficiency (assume 70% or 0.70)

TDH = Total dynamic head = [(LIFT) + (PSI X 2.31)]

LIFT = Depth to water in FEET from land surface to pumping water level

PSI = Pumping pressure measured in PSI near pump (if open discharge assume [0])

(8.8) X (15.0) X (0.70)
92.400

[(120.0) + (27.0 X 2.31)] 62.370
182.370

Q = 0.507

LIFT FROM:

PSI FROM:

NOTES ON PUMP:

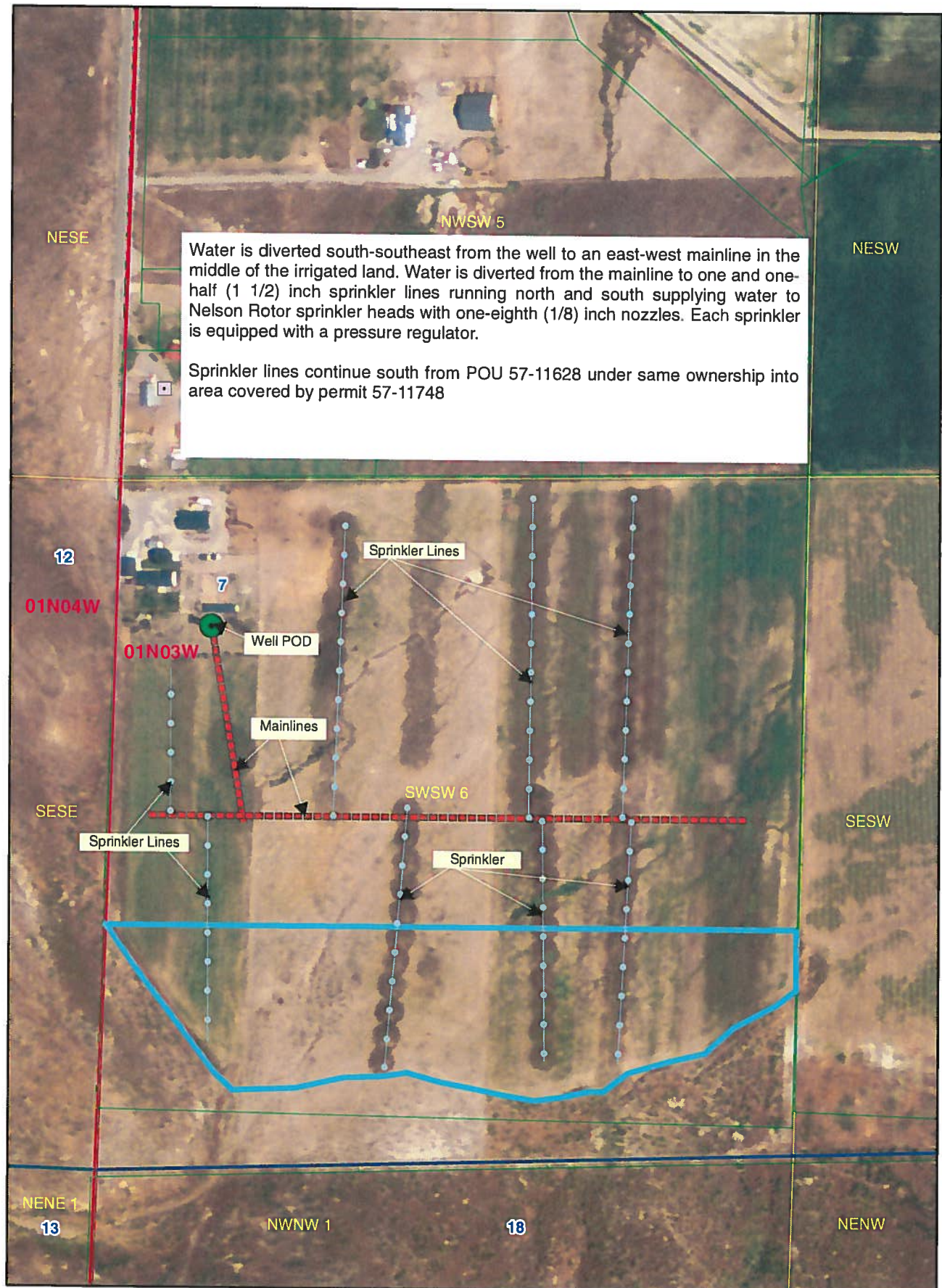
Measurement ☐
Owner ☒
Area estimate ☐
Well Logs ☒

Booster Y ☐ N ☒

Measurement ☒
Owner ☐
Estimate ☐
Owner Gage ☐

Motor Make, Serial or ID
2822039310
Pump Make, Serial or ID, rating
2822039310 submersible

REMARKS: measured pressure at 10 sprinkler heads using pressure gauge and tube inserted into sprinkler nozzle, 22 psi, 21 psi, 30 psi, 22 psi, 20 psi, 28 psi, 30 psi, 38 psi, 32 psi, 28 psi. Each sprinkler head is equipped with a pressure regulator.





Irrigation well POD, looking west.
Following photographs are taken while
standing at the well head.



Looking east at irrigated pasture,
irrigation from sprinklers can be seen in
background



Looking southeast, irrigation sprinklers in
background, pod sprinkler in forground.



Looking south, irrigated pasture in background, sprinkler line in foreground



Looking south-southwest



Looking southwest



Looking west from irrigation POD well head, domestic well is located in pump house in center of photo.



Looking northwest



Nelson Rotor sprinkler pod. All sprinklers used in the distribution system are of this type.