

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

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. 63-11865

1. Owner Beranna Dairy Phone No. 208-484-5489
Current address 9166 Perch Rd, Caldwell, ID 83607
2. Examiner's name Cody Parker EXAM DATE 08/04/17
3. Accompanied by Bernie Teunissen Email bernieteunissen@gmail.com
Address Same
Relationship to permit holder Owner Phone No. Same
4. Source Groundwater tributary to _____

B. OVERLAP REVIEW

1. Other water rights with the same place of use surface water
2. Other water rights with the same source and point of diversion 63-11615

C. DIVERSION AND DELIVERY SYSTEM

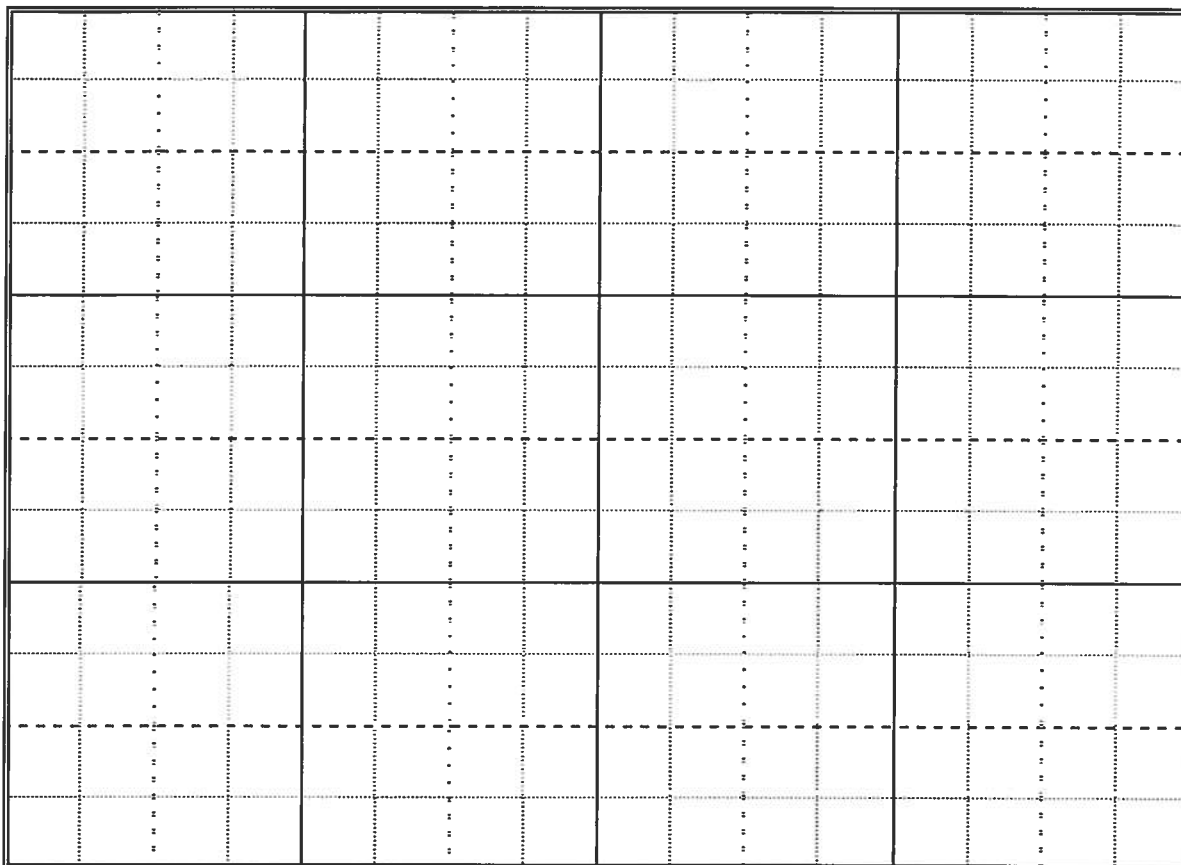
1. Point(s) of Diversion:

Ident. No.	Gov't Lot	¼	¼	¼	Sec	Twp	Rge	County	Method of Determination/Remarks
			SE	SE	9	02N	03W	Canyon	GPS, aerial imagery, PLS map

2. Place(s) of Use: Method of determination Aerial imagery, PLS map

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	03E	9			37	17					36	3	1			35	8		137

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
Well ID 303049		60	Submersible	Berkeley	
Booster Pump		25			

*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

2. **Measurements:** _____

Pump Curve: 660 gpm = 1.47 cfs for TDH = 294' and 60 HP pump

6 wheel lines x 32 nozzles/line x 4 gpm/nozzle

See Attached

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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?

[illegible]

F. FLOW CALCULATIONS☐ Additional computation sheets attached

Measured Method:

Pump curve estimate: 1.47 cfs (for 249 ft TDH)

6 wheel lines x 32 nozzles/line x 3.5 gpm/nozzle = 672 gpm = 1.49 cfs (maximum estimate)

Ignoring: pressure loss due to friction

BU Standard = 2.74 cfs

G. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 137 \text{ acres} \times 4.5 \text{ afa/acre} = 616.5 \text{ afa}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation Season}) \times 1.9835 = 1.47 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 758.1 \text{ afa}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 616.5 \text{ afa}$$

2. Volume Calculations for Other Uses:

No other uses

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use		Rate of Diversion Q (cfs)	Annual Volume V (afa)
	From	To		
Irrigation	03/01	11/15	1.47 cfs	616.5 afa
Totals:			1.47 cfs	616.5 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

Date 10/18/2017

SEAL

Reviewer

Date

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NARRATIVE

Permit 63-11865 was approved on July 2, 2008, authorizing the diversion of 2.0 cfs from groundwater for supplemental irrigation of 160 acres. The final permit approval followed a temporary permit which was issued for the 1992 and 1994 irrigation seasons. Proof of beneficial use for the final permit was filed on July 5, 2013. On August 4, 2017, I completed a site visit as part of the beneficial use field examination. I was accompanied by Bernie Teunissen, the owner of Beranna Dairy which is the entity currently listed as the permit holder.

The point of diversion is a 12 inch diameter well that was drilled to 330 feet. The well is located at N 43°31'02.5" by W 116°41'40.4", which puts it in the SESE of Section 9, T02N, R03W, Boise Meridian. Water is diverted from the well using a 60 hp. The line pressure near the well head is 50 psi. There is a totalizing flow meter installed near the well head, but it was not working at the time of the exam and the owner did not have any record of the historical readings. The well provides water for this permit as well as right no. 63-11615, another irrigation right.

Water is diverted through a 6" mainline approximately ½ mile to the north. Along the way the line feeds several risers that lead into ¼ mile long wheel lines which irrigate the place of use for right. 63-11615. At the end of the line is a final riser. The permit holder runs water from this riser through an above-ground PVC line to irrigate the place of use for this permit. From the pvc line, the owner can either divert water into the main irrigation ditch or take water all the way to a large circular vault that collects water to be pumped by a pivot system. Water is pumped into the pivot using a 25-hp booster pump.

In total, there are 137 acres of irrigation. The pivot system irrigates around 73 acres. The rest is flood irrigated. Flood irrigated areas use water from the main irrigation ditch through headgates. After the headgates, there are a series of smaller ditches which dissect the place of use. Water is taken from these lateral ditches to flood irrigate.

The irrigation use was developed different than what was described on the permit. The permit lists 80 acres of irrigation in the NWN and NENE Qs. The current permit holder does not own that land. However, he does own land in the SWNE and the SENE where irrigation has been developed. That land falls within the service boundary for the local irrigation district, and has been historically irrigated with both surface water and groundwater. Therefore, amending the permit to reflect the new acreage should not be an issue as the owner is not irrigating land that was not previously irrigated, and the groundwater use on that land is supplementary.

The backfile for right 63-11615 indicates that the system had a capacity of 1.47 cfs at the time of the field exam in 1996. That value was taken from the pump curve using 294 ft for the total dynamic head. To my knowledge, the pump is the same. The well log indicates the static water level is ~144 ft BGS. Drawdown during the pump test was 28 ft. So, the total lift is around 172 ft. Pressure at the well is 50 psi (50 psi x 2.31 ft/psi = 115.5 ft). Based on these values, it's reasonable to assume the total dynamic head is around 288 ft, which is close to the figure used by the previous examiner. Therefore, the estimate of 1.47 cfs for the well capacity makes sense.

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To check the value I estimated capacity using sprinkler head discharge. The owner says he can irrigate from 6 wheel lines at a time from the well. Each wheel line has 32 sprinklers Nelson Irrigation 2FCN, 3.5 gpm (at 50 psi) flow control nozzles. A maximum estimate of the total flow rate by this method is 672 gpm or 1.49 cfs. The actual rate is probably less because friction between water and the pipe would cause the pressure to be less than 50 psi at the end of the wheel lines. However, this estimate is within 2% of the estimate from the pump curve and gives a pretty good estimation of the system capacity. It is clear that the system capacity is less than the inch to the acre standard allowed for the amount of irrigation developed (2.74 cfs), so the capacity will be limiting in this case. Also, a combined use limit should be added so this right when combined with 63-11615, does not exceed a total diversion rate of 1.47 cfs. I calculated the total volume for irrigation use based on the 4.5 afa/acre headgate requirement standard. The total volume I have recommended is 616.5 afa.

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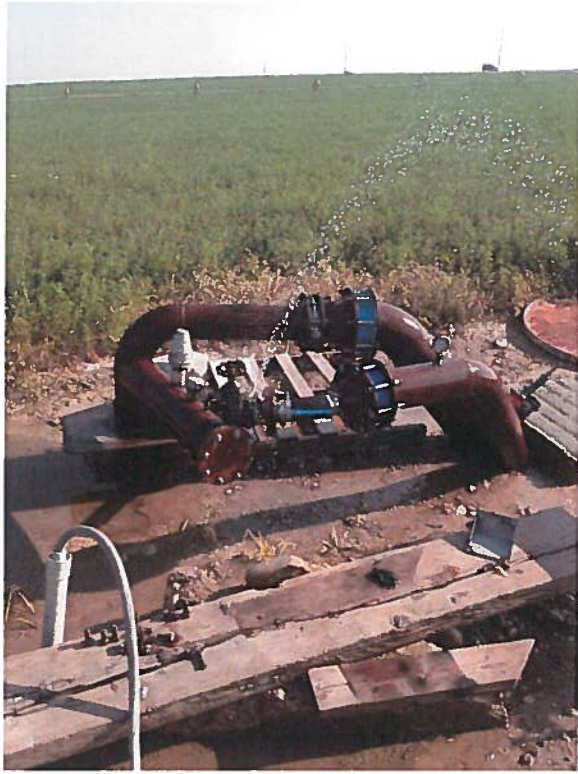


Figure 1 The well head located in the SESE.



Figure 2 The pressure gauge located at the well head. The gauge did not appear to be functioning properly at the time of the exam.

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Figure 3 A totalizing flow meter is installed at the diversion but does not appear to be functioning properly.



Figure 4 One of the Nelson Sprinklers with a Flow Control Nozzle. The discharge rate per sprinkler was used to verify the diversion rate estimated using the pump curve.

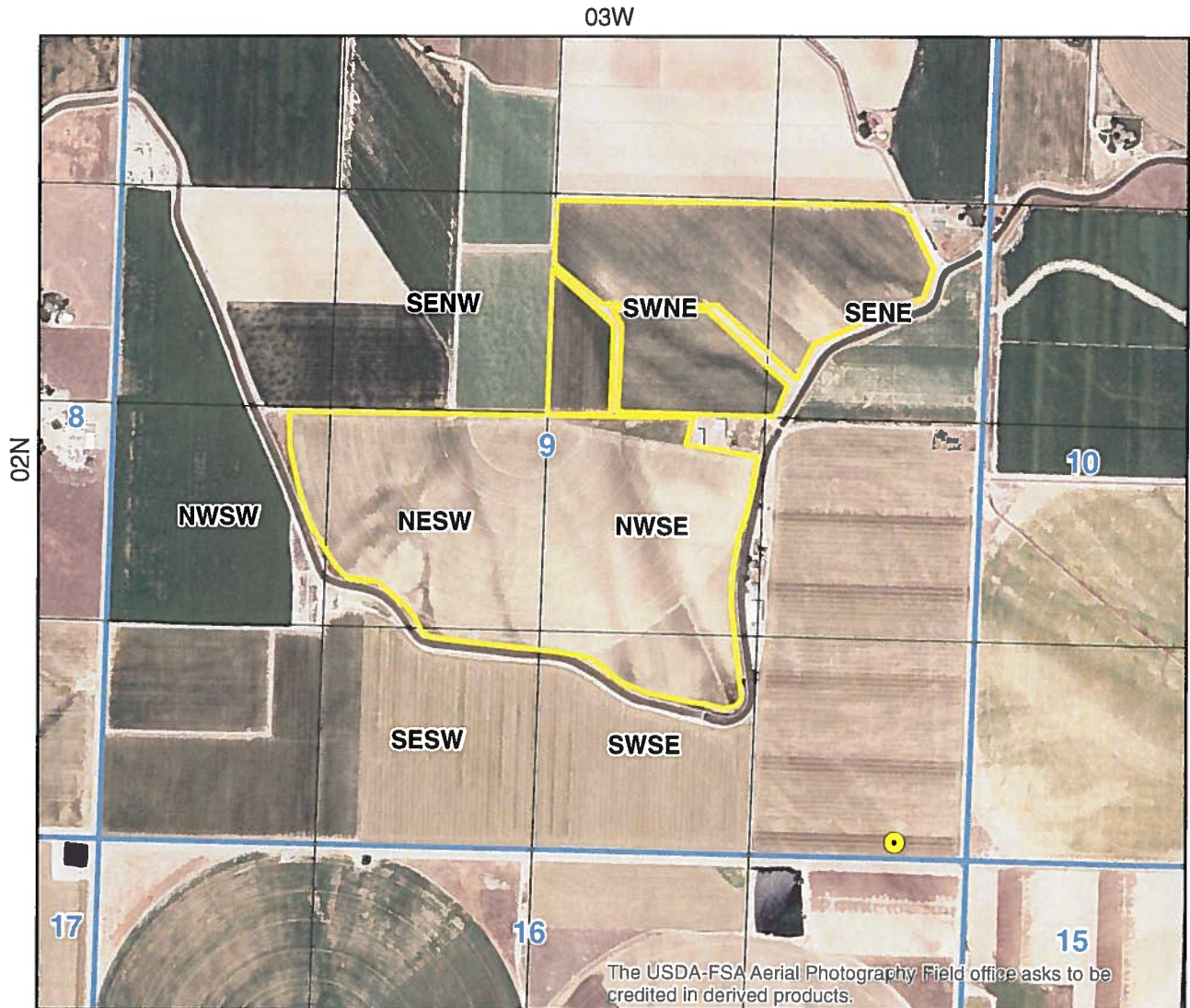
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Figure 5 Water is diverted to this vault for the pivot system. Water is diverted from the vault to the pivot using a 25-hp booster pump.

State of Idaho
Department of Water Resources
Attachment to Water Right License
63-11865

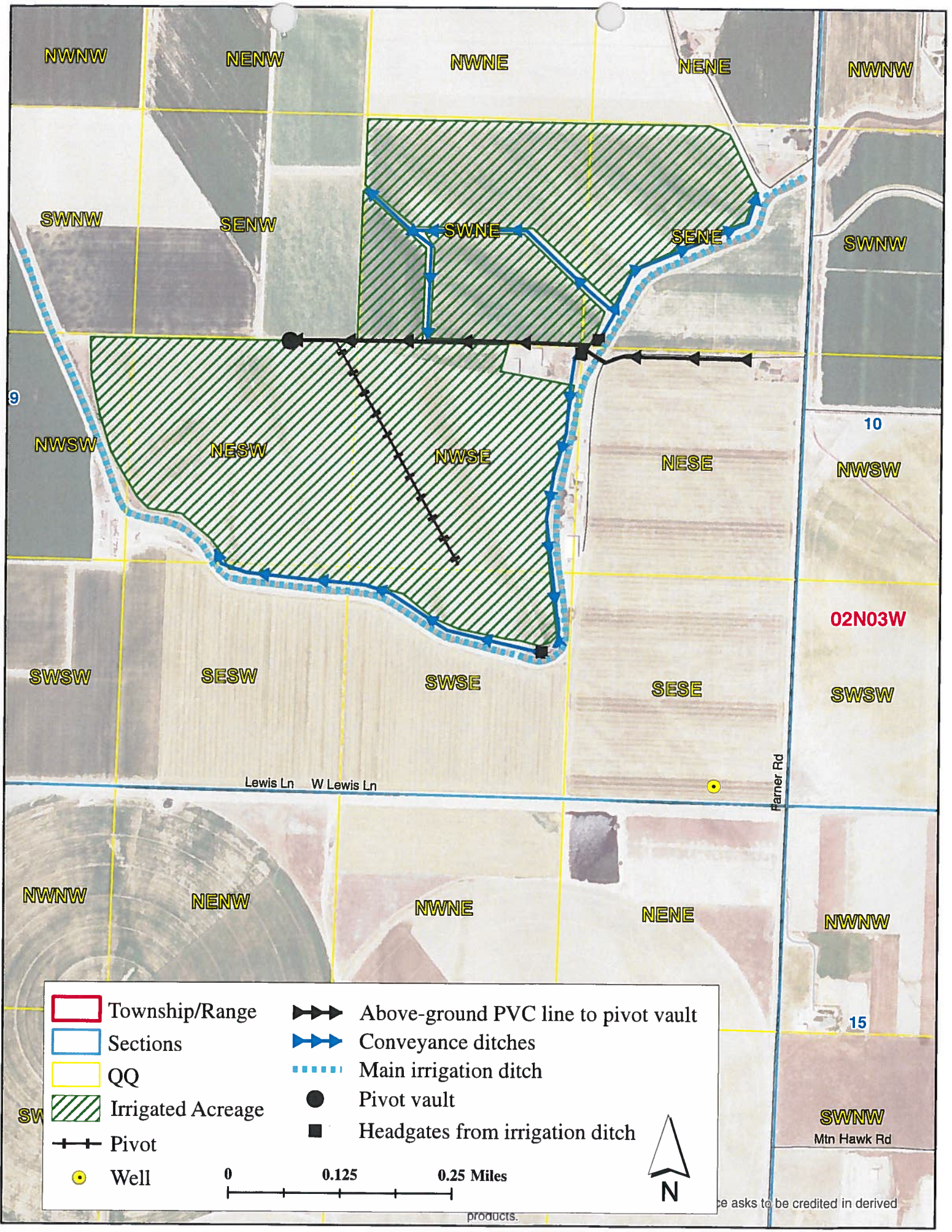
This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



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

0 0.125 0.25 0.5 Miles







State of Idaho

DEPARTMENT OF WATER RESOURCES

Western Region • 2735 Airport Way • Boise, Idaho 83705-5082

Phone: (208) 334-2190 • Fax: (208) 334-2348 • Website: www.idwr.idaho.gov

C.L. "BUTCH" OTTER
Governor

GARY SPACKMAN
Director

October 18, 2017

BERANNA DAIRY
9166 PERCH RD
CALDWELL ID 83607

RE: Water Right Permit No. 63-11865

Dear Mr. Teunissen,

I am writing you today concerning your water right permit which is referenced above. Thank you for helping me to complete the field examination for your permit. The next step in the process is to issue a license for your water right. By issuing a license, the Department confirms the extent of development that has been established in compliance with the terms of the permit.

As we have discussed, you developed your irrigation use different than what was described on the permit. Changes that do not increase the authorized use of water under the permit can be requested and approved in accordance with Section 42-211, *Idaho Code*. Before a license can be issued, your permit needs to be amended to reflect your water use as it was actually developed. In this case, we need to amend the description of the place of use for irrigation.

The enclosed Application for Amendment forms depict the elements of the water right as they will appear on the license when issued. Please review the amendment forms carefully. If you agree to the information presented, please sign and return the forms with the \$100.00 filing fee within 14 days.

Please let me know if you have any questions regarding the proposed amendments. You can reach me at 208-334-2190 or by email at cody.parker@idwr.idaho.gov. I look forward to hearing from you. Thank you for your time.

Respectfully,

Cody Parker
Water Resource Agent

Enclosures: Application for Amendment, Map of place of use and point of diversion

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

USE TYPEWRITER OR
BALLPOINT PEN

State law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.

1. WELL OWNER

Name Jeep L. Hennis
Address 15267 Locust Lane, Nampa, ID 83856
Drilling Permit No. 63-92-W-174-000
Water Right Permit No. 63-11615

7. WATER LEVEL

Static water level 143.8 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 58 °F. Quality Good
Describe artesian or temperature zones below.

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures
such as liners, screen, materials, plug depths, etc. in lithologic
log, section 9.)

8. WELL TEST DATA

☒ Pump ☐ Bailor ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
<u>823</u>	<u>27.99</u>	<u>3 1/2</u>

3. PROPOSED USE

☐ Domestic ☒ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

9. LITHOLOGIC LOG

081536

Bore Diam.	Depth		Material	Water	
	From	To		Yes	No
<u>28"</u>	<u>0</u>	<u>35</u>	<u>Cobbles</u>		
	<u>35</u>	<u>55</u>	<u>clay</u>		
	<u>55</u>	<u>65</u>	<u>clay & cobbles</u>		
	<u>65</u>	<u>80</u>	<u>Sandstone</u>		
	<u>80</u>	<u>130</u>	<u>Sand clay</u>		
	<u>130</u>	<u>310</u>	<u>Fine to medium sands</u>		
	<u>310</u>	<u>330</u>	<u>clay</u>		

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Auger ☒ Reverse rotary
☐ Cable ☐ Mud ☐ Other _____
(backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____
Thickness Diameter From To
.250 inches 12 inches + 2 feet 210 feet
.250 inches 12 inches 310 feet 330 feet
Inches inches feet feet
Was casing drive shoe used? ☐ Yes ☒ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation? _____ inches by _____ inches
Number From To
_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet
_____ perforations _____ feet _____ feet
Well screen installed? ☒ Yes ☐ No
Manufacturer Roseco mesh Type Wire wrapped
Top Packer or Headpipe _____
Bottom of Tailpipe _____

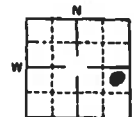
Diameter 12" Slot size 040 Set from 210 feet to 310 feet
Diameter _____ Slot size _____ Set from _____ feet to _____ feet
Gravel packed? ☒ Yes ☐ No ☐ Size of gravel Will Pack
Placed from 42 feet to 300 feet

Surface seal depth 42' Material used in seal: ☒ Cement grout
☐ Bentonite ☐ Pudding clay ☐ _____
Sealing procedure used: ☒ Tremie Pipe
☐ Temp. surface casing ☐ Overbore to seal depth
Method of joining casing: ☒ Threaded ☒ Welded
☐ Solvent Weld ☐ Cemented between strata

Describe access port 3" x 2' Sander Pipe
2" x 1/8" Gravel Pipe

10. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Canyon

Address of Well Site 15267 Locust Lane
(give at least name of road)
SE T. 2 N. 4 or S. 4
NE 1/4 SE 1/4 Sec. 9 R. 3 E. 4 or W. 4

11. DRILLER'S CERTIFICATION

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

Firm Name Sargent Drilling, Inc. Firm No. 507
9955 N. Virginia St.
Address Boise, ID 83726 Date 6-7-92
Signed by Drilling Supervisor Mark White
and Paul Staller
(Operator) (If different than the Drilling Supervisor)
707/677-0150

OFFICE USE ONLY
Inspected by L.G. 1-24-96
Two 211 Hg 30 Sec 9
in SE 1/4 SE 1/4
per W.R.

Department of Water Resources
Western Regional Office

RECEIVED

JAN 25 1996

MAY 06 1996
Department of Water Resources