

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 61-7744

Exam Date: 9/17/2012

1. Current Owner: J R SIMPLOT CO
C/O TERRY UHLING
999 MAIN ST STE 1300
BOISE ID 83707
(208)336-2110

2. Accompanied by: Chuck Jones

Phone No: (208) 834-2231Address: HC, Box 275, Grandview, ID 83624Relationship to Permit Holder: Feedlot Manager3. **SOURCE****TRIBUTARY**

GROUND WATER

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 61-366, 61-367, 61-4017, 61-7398 and 61-7667
2. Other water rights with the same point of diversion: 61-7398 and 61-7667

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

GROUND WATER	NW1/4SW1/4	Sec. 27,	Twp 04S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	NW1/4NW1/4	Sec. 34,	Twp 04S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	NE1/4NE1/4	Sec. 34,	Twp 04S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	SE1/4NE1/4	Sec. 34,	Twp 04S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	SW1/4SW1/4	Sec. 35,	Twp 04S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	L3 NE1/4NW1/4	Sec. 2,	Twp 05S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	NE1/4NW1/4	Sec. 35,	Twp 04S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	NW1/4NW1/4	Sec. 35,	Twp 04S,	Rge 03E, B.M.	ELMORE County
GROUND WATER	SW1/4SE1/4	Sec. 35,	Twp 04S,	Rge 03E, B.M.	ELMORE County

Method of Determination: Visual Inspection and Existing Spatial Data information**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	
04S	03E	27									X	X	X	X		X	X	X	
													L4	L3			L2	L1	
04S	03E	34	X	X	X	X	X	X							X	X			
04S	03E	35						X	X	X	X	X	X			X	X		
05S	03E	2			X		X	X	X	X	X			X		X	X		
					L6		L3	L4											

Method of Determination: Visual Inspection and GIS

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

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
500 Well Site Tag # A0016982	Unknown	25	Unknown	Unknown	8 Stage
Scale 3 (Shipping) Well Site Tag # A0016983	High Thrust	100	R9985-04-142	Unknown	R2147221M
Highway Well Site Tag # A0016985	General Electric	50	5K6248XH1A	Goulds	6 inch Discharge
Office Well Site Tag # A0016986	General Electric	60	5K4404KG	Goulds	6 Inch Discharge
Housing Well Site Tag # A0016987	Unknown	20	Unknown	Unknown	6 inch Discharge
Housing Well Booster	Marathon	5	M361	Unknown	DHO-170
Vet 3 Well Site Tag # A0016988	High Thrust	125	R9982-01-323 R2117379	Unknown	6 inch Discharge
Canyon Well Site Tag # A0016981	Unknown	15	Unknown	Unknown	6 inch Discharge
Vet 4 Well Site Tag # A0016991	Unknown	7.5	Unknown	Unknown	6 inch Discharge

*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: There was no reasonable place to attain a flow measurement. Therefore, a theoretical calculation was used. The theoretical calculation matched the flow rating supplied from the applicant, and previous field investigations.

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method:

I recommend licensing this permit for 3.34 cfs with conditions for combined flow rate with 61-7398 and 61-7667. See attached memo and attachments for additional information and calculations.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

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

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

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

2. Volume Calculations for Other Uses:

I recommend licensing this permit for 670 af. See attached memo and attachments for additional information and calculations.

G. NARRATIVE/REMARKS/COMMENTS

The water for this feedlot currently comes from 9 wells and a spring, but there are two wells that are no longer in use, but haven't been abandoned. The delivery system for this feedlot is a spider's web of mainlines running completely through the property. The systems mainlines are fed currently by the 9 current wells, and sometimes by water from the pond west of the spring. The pond is fed by the spring and some wastewater from fields and runoff. The systems mainlines run through middle of each pen and down the sides of the pens, with spurs to the water troughs. Dust abatement sprinklers are attached directly to the systems mainlines. The wells also supply several buildings, homes, and an office described in earlier water rights. All of the wells in this system can supply any of the water troughs or buildings, so the system is completely connected together. The green line shows the border of the feedlot. The pond water is generally only used for the dust abatement system.

Water rights 61-7398 and 61-7667 are direct overlaps of this system. These two water rights are diverted from the same wells. This water right was filed to increase the capacity of the facility from 100,000 animals to 150,000 animals. Water rights 61-366, 61-367, and 61-4017 allow the use of the spring water in the facility. Although, the spring system is connected into the system's mainlines, it is seldom used except to supply water for dust abatement. The groundwater is mainly used for stockwater use, since it provides a higher quality of water for the animals and the domestic uses. The springs are used on the hog pens in the canyon, and delivered through the dust abatement lines when needed.

This facility can clearly house 150,000 head of cattle. The facility manager informed me that the numbers do vary, but they try to keep the facility at the 150,000 head capacity. The facility manager also informed me that cattle are generally in the feedlot for approximately 9 months, so there is a constant turnover in the facility. I recommended this permit for the full capacity of the system, because there are times that the facility remains full for an entire year. To reduce the annual volume allowed to an average would short the facility during those years when the facility is at full capacity all year long. The number of the animals at the facility can vary depending on economic and available animal numbers.

Several of the conditions on the permit were removed as is practice for those types of conditions. I did add conditions reflecting the combined use with water rights 61-7398 and 61-7667. I also updated conditions to the current standard condition as required under in the database. One of the conditions did not have a condition code attached to it, but it seemed to be an earlier version of condition 103 that speaks to the Lower Snake River flow requirements. I replaced this condition with the updated condition.

I have spoken with Vic Conrad of the Simplot organization, and we agreed that it would be in everyone's best interest to include all of the wells on this permit through a licensing amendment. The system has been redesigned several times, and the wells that produced better water in both quantity and quality have been upgraded, and one of the wells proposed for this permit was not developed due the changes in the other wells. Therefore, a licensing amendment will be sent to the owner of the facility.

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>
STOCKWATER	01/01 to 12/31	3.340 CFS	670.00 AF
<u>Totals:</u>		3.340 CFS	670.00 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

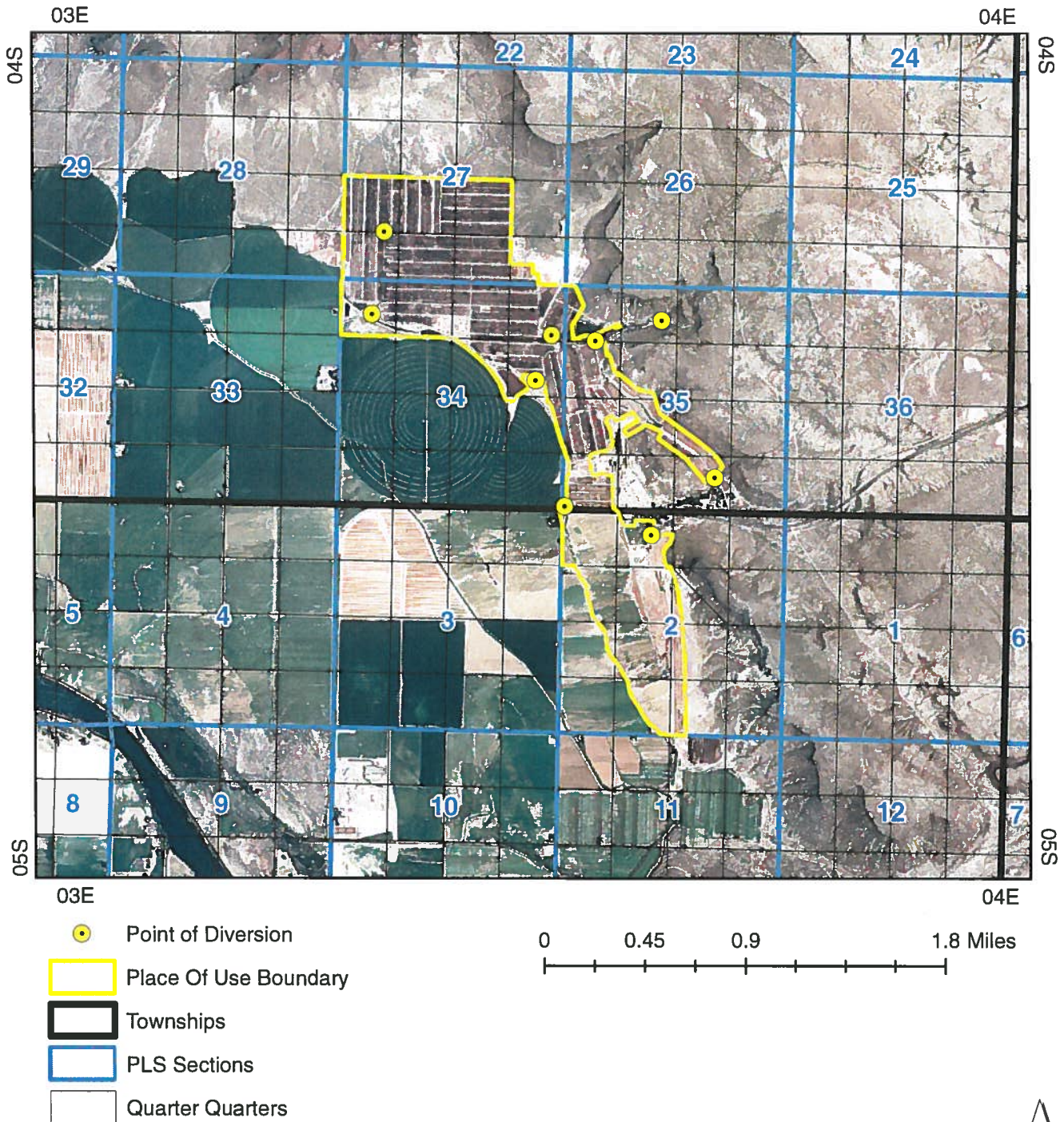
I. AUTHENTICATION Daniel A. Nelson – Staff Hydrologist

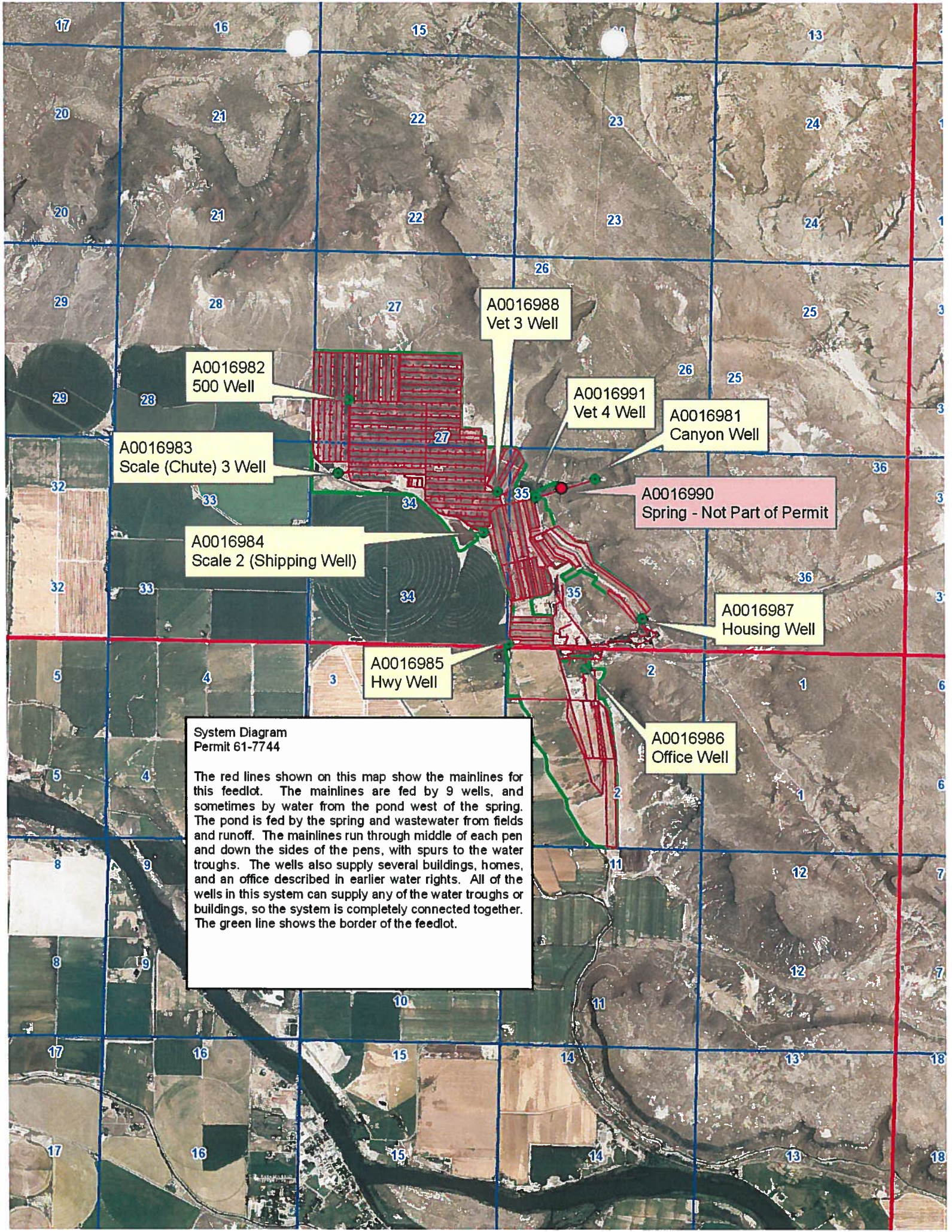
Field Examiner's Name Daniel A. Nelson Date 2-22-2013

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Field Exam Map
61-7744

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.





A0016988
Vet 3 Well

A0016982
500 Well

A0016991
Vet 4 Well

A0016981
Canyon Well

A0016983
Scale (Chute) 3 Well

A0016990
Spring - Not Part of Permit

A0016984
Scale 2 (Shipping Well)

A0016987
Housing Well

A0016985
Hwy Well

A0016986
Office Well

**System Diagram
Permit 61-7744**

The red lines shown on this map show the mainlines for this feedlot. The mainlines are fed by 9 wells, and sometimes by water from the pond west of the spring. The pond is fed by the spring and wastewater from fields and runoff. The mainlines run through middle of each pen and down the sides of the pens, with spurs to the water troughs. The wells also supply several buildings, homes, and an office described in earlier water rights. All of the wells in this system can supply any of the water troughs or buildings, so the system is completely connected together. The green line shows the border of the feedlot.

A0016982
500 Well

A0016983
Scale (Chute) 3 Well

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Canyon Well

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Housing Well

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Office Well

**Overlap Map
Permit 61-7744**

The red speckled areas are the locations of the new corals or pastures that have been constructed. The purple areas show the locations of the existing stockwater rights. The green area shows the current corral areas that will be recommended under this permit. Since this permit was applied for, the corrals have been redesigned, so I feel it is prudent to include the entire area for this water right. The green circles are the wells and the red circle is the spring that diverts into the pond due west of the spring. The pond is mainly used for dust abatement, but can be tied into the stockwater system if needed.

MEMORANDUM

TO: File 61-7744

FROM: Daniel Nelson – Staff Hydrologist

DATE: February 20, 2013

SUBJECT: Diversion rate and volume Calculations for permit 61-7744

During the field exam for this permit, I was unable to get a reasonable flow rate from all of the wells used in this facility. Originally, the permit only listed one well, but it is obvious during the field exam, that all of the wells contribute to this system. Therefore, the owner is going to sign a licensing amendment to include all of the wells for this facility on this permit. Therefore, all of the wells and the existing water rights, 61-7398 and 61-7667 need to be taken into account to determine the rates and volumes for this system.

During the field exam I discover the capacity of the system had changed since a field exam was done in 1995 by Lori Graves. The diversion capacity has actually decreased. However, it wouldn't be prudent to change the diversion rates of the existing water rights that were based on the earlier system capacity, so the 1995 capacity has to be accounted for in these calculations. Please see the attached document named Exhibit 2 for the 1995 calculations.

DIVERSION RATE CALCULATION:

The following shows the calculations for the diversion rate for this permit.

Permit 61-7744 limitation = 3.34 cfs

Maximum allowable per Field Examiner's Handbook chart = $0.00022 \text{ cfs/hd} \times 50,000 = 11.00 \text{ cfs}$

Current System Capacity (see attached spreadsheet and emails) = 7.39 cfs

1995 System Capacity (see exhibit 2) = 9.56 cfs

Taking the above information into account, **I recommend that the diversion rate for this water right be 3.34 cfs with the condition that when water rights 61-7398, 61-7667, and 61-7744 are combined, they are limited to a maximum diversion rate of 9.56 cfs.**

VOLUME CALCULATION:

The volume for this water right using the same spreadsheet would be as follows:

The 1995 system capacity = $9.56 \text{ cfs} \times 1.9835 \times 365 \text{ days} = 6,921 \text{ af}$

Current system capacity = $7.39 \text{ cfs} \times 1.9835 \times 365 \text{ days} = 5,350 \text{ Af}$

Maximum allowable per Field Examiner's Handbook chart for water right 61-7744 =

$0.0134 \text{ afa/hd} \times 50,000 = 670 \text{ af}$

Water Rights 61-7398 and 61-7667 volume limitation = $1,562.9 \text{ af}$

Total water use = $670 \text{ af} + 1562.9 \text{ af} = 2,232.9 \text{ af}$

Whereas the current water use is below the 1995 and the current system capacity, **I recommend that this permit be licensed for 670 af. There is no need for a combined condition, since the total use from all of the rights is less than the system capacity.**

CURRENT SYSTEM THEORETICAL CALCULATION

Permit Number 61-7744
 Performed by Dan Nelson
 Date 9/16/2012

Well	Horsepower	Pressure	Lift	cfs	Comments
500 Well	25	50	326	0.35	
Scale (chute) 2 Well	25	50	189	0.51	
Highway Well	50	50	200	0.98	
Office Well	60	50	220	1.10	
Housing Well	25	50	73	0.82	This is a 20 Hp well with a 5 Hp Booster for a total of 25 Hp
Vet 3 Well	125	50	360	1.62	
Canon Well	15	50	252	0.25	
Vet 4 Well	7.5	50	184	0.15	
Scale 3 Well	100	50	265	1.62	
TOTAL WELL CAPACITY				7.39	

	in cfs
Wells Capacity as of 2012=	7.39
Existing Water Right 61-7398 =	1.00
Existing Water Right 61-7667 =	8.56
Capacity Available for Permit 61-7744 =	-2.17
Permit 61-7744 =	3.34

Capacity of 9.56 cfs in 1995 was more than the capacity available in 2012. Therefore, the rights when combined would be limited to the capacity measured in 1995.

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

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

Nelson, Dan

From: Nelson, Dan
Sent: Wednesday, February 06, 2013 1:35 PM
To: 'Conrad, Vic'
Subject: RE: New Water Right for Feedlot #1.

Vic,

Sorry it has taken me so long to get back to you, but I wanted to do some research before getting back to you.

The nameplate tag is what we use to attain the horsepower on all wells either submersible or Turbine. I have already verified most of the Horsepower for the ones you were missing except for the Scale (chute) 2 well. According to the previous filed exams on this well, it says it is a 25 Hp well, but I don't know if that was changed (see below). Do you want me to go with that?

Further research into the spring shows that the water from the spring diverts directly into the pond on the east side of the feedlot north of the highway and ranch housing. According to the existing water rights using the spring as a source, all water diverted into the system is diverted out of the pond. According to Department records this spring has never been measured.

When I was at the feedlot, I wasn't told that water from this pond is used for stockwater purposes. The water rights are fairly vague on how the pond is used, but it appears from the narratives, that the pond is used mainly for dust abatement and some watering of the hog pens. If this is the case, then we could leave that source off of this permit. It may even be better to leave it off unless it contributes a significant amount of water to the additional 50,000 head of stockwater use.

If we remove the spring from the stockwater portion of this permit, then I need at this time is the horsepower for the Scale (chute) 2 well and I get the amendment ready and over to you to sign.

Thank you Vic for your help.

Dan Nelson

RED = Dan Nelson Verified.

Green = Previous Exam Verification

Vic: Following is what I was able to gather up:

Well	HP	Lift
500	25	326
Scale (chute)2	25	189
HWY	50	200
office	60	220
Housing	20HP-5HP	73
Vet 3	125	360
Canyon	15 HP	252
Vet 4	7 ½ HP	184
Scale 3	100 HP	265

I could not find any place to see what water we get from the spring.

From: Conrad, Vic [<mailto:Vic.Conrad@simplot.com>]
Sent: Tuesday, February 05, 2013 10:28 AM
To: Nelson, Dan
Subject: FW: New Water Right for Feedlot #1.

Dan,
Here is what I have so far for the wells at the Feedlot near Grandview. Unfortunately our Horsepower column is a little lacking. Question: if any of these wells are operated with an above-ground motor – would the horsepower rating on the motor help? It is possible these are submersible pumps/motors – which won't help our cause. Let me know if I try to round up the motor rating on any above ground motors if that helps.

As

Vic: Following is what I was able to gather up:

Well	HP	Lift
500	X	326
Scale (chute)2	X	189
HWY	X	200
office	X	220
Housing	20HP-5HP	73
Vet 3	x	360
Canyon	15 HP	252
Vet 4	7 1/2 HP	184
Scale 3	100 HP	265

I could not find any place to see what water we get from the spring.

EXHIBIT 2
PUMP CURVES & THEORETICALS

WELL #	PUMP CURVE INFO.	THEORETICAL INFO.	
1	380 GPM = .85 CFS	$\frac{30 \times 8.8 \times .7}{120 + 2.3 \times 60}$	$\frac{184.8}{258} .72 \text{ CFS}$
2	NOT AVAILABLE	$\frac{15 \times 8.8 \times .7}{120 + 2.3 \times 80}$	$\frac{92.4}{304} .30 \text{ CFS}$
3	450 GPM = 1.0 CFS	$\frac{50 \times 8.8 \times .7}{310}$	$\frac{308}{310} 1.0 \text{ CFS}$
4	1400 GPM = 3.12 CFS	$\frac{150 \times 8.8 \times .7}{356}$	$\frac{924}{356} 2.6 \text{ CFS}$
5	213 GPM = .47 CFS	$\frac{20 \times 8.8 \times .7}{150 + 2.3 \times 45}$	$\frac{123.2}{263.5} .47 \text{ CFS}$
6	1600 GPM = 3.57 CFS	$\frac{125 \times 8.8 \times .7}{262}$	$\frac{770}{262} 2.94 \text{ CFS}$
7	191 GPM = .44 CFS	$\frac{25 \times 8.8 \times .7}{231 + 2.3 \times 70}$	$\frac{154}{392} .39 \text{ CFS}$
8	550 GPM = 1.23 CFS	$\frac{50 \times 8.8 \times .7}{270}$	$\frac{308}{270} 1.14 \text{ CFS}$

TOTAL PUMPING CAPACITY (USED SMALLER OF PUMP CURVE INFO. VS. THEORETICAL INFO.)			9.56 CFS

THE DYNAMIC PUMPING LEVEL ON WELLS 1, 2, 5 AND 7 WAS OBTAINED FROM WELL DRILLER'S REPORTS AND AREA ESTIMATES. THE PSI WAS OBTAINED FROM GUS OMAN.

TOTAL DYNAMIC HEAD ON WELLS 3, 4, 6 AND 8 WAS OBTAINED FROM THE ATTACHED PUMP CURVES.

MAILED

JUN 28 1961

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 9/17/2012

FILE NUMBER 61-7744



This photo shows the Scale 2 (Shipping Well)



The house above covers the Office Well, and the photo below shows the office well.

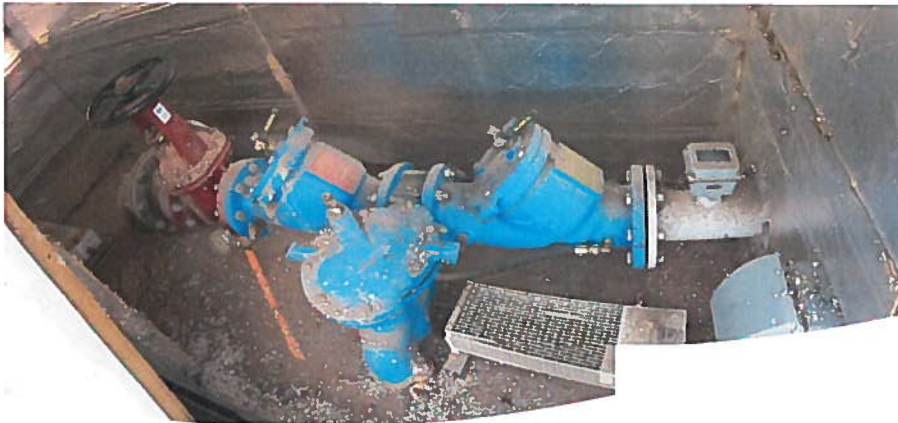


PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 9/17/2012

FILE NUMBER 61-7744



These top two photos show the 500 well. This well was the well originally listed as the only well on this permit. According to the owner this well was originally a 100 Hp well, but it was changed out to a 25 Hp well.



The well shown above is the Scale (Chute 3) well

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 9/17/2012

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The photo above is the Highway well



The photo above is the Canyon Well



The photo above is the Vet 4 well

PHOTOGRAPHER AND DATE OF PHOTOS DANIEL A NELSON 9/17/2012

FILE NUMBER 61-7744



The photo above show the corrals north of the Grand View Highway.

The photo below shows the corrals south of the Grand View Highway.

