

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33162
Exam Date: 09/19/2019

1. Current Owner:
RALPH WE COX III
10103 W COLTON LN
EAGLE, ID 83616
2. Accompanied by: Ralph W.E. Cox (permit holder)
Phone No: (805) 889-7684

3. **SOURCE:**
GROUND WATER

Method of Determination: Site visit

B. OVERLAP REVIEW

1. Other water rights with the same place of use: no overlapping rights
2. Other water rights with the same point-of-diversion: no overlapping rights

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

GROUND WATER NW¼ SE¼, Sec. 8, Twp 05N, Rge 01W, B.M. ADA County

Method of Determination: site visit, GPS

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	01W	8													1.3	3.6			4.9

Total Acres: 4.9

PLACE OF USE: STOCKWATER

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05N	01W	8													X	X			

Method of Determination: site visit, aerial imagery, GIS

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

 x 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.

 x

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

 x Photo of Diversion and System Attached

4.

Well ID No.	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No.
D0047912	n/a	n/a	n/a	n/a	n/a

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Pressure gauge	Glycerin-filled; orifice insertable	Tube & Socket	316SS	n/a	1/8 inch	n/a

2. Measurements: Measurements were made under two different configurations: in the pasture by the barn using two sprinklers and in the pasture on the eastern side of the house while running three sprinklers. All sprinklers are Weather Tec brand with 9/32" nozzle (model 10-67).

E. FLOW CALCULATIONS

 X Additional Computation Sheets Attached

Measured Method: pressure gauge

Eastern Pasture

9/32" sprinkler at 25 PSI = 11.8 GPM

3 sprinklers x 11.8 GPM/sprinkler = 35.4 GPM = 0.08 cfs

Western Pasture

9/32" sprinkler at 45 PSI = 15.8 GPM

9/32" sprinkler at 50 PSI = 16.7 GPM

Both sprinklers combined = ~~32.5~~ 32.5 GPM = 0.07 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 4.9 \text{ acres} \times 4.5 \text{ afa} = 22.1 \text{ AF}$

$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.08 \text{ cfs} \times 260 \text{ days} \times 1.9835 = 41.3 \text{ AF}$

$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 22.1 \text{ AF}$

2. Volume Calculations for Other Uses:

For number of stock of 10 or less, per the Stockwater Use table in the Field Examiner's handbook, the rate is 0.02 cfs with an annual volume of 0.2 AF.

G. NARRATIVE/REMARKS/COMMENTS

Permit 63-33162 has a priority date of 2/3/2009 and authorized the diversion of up to 0.24 cfs of ground water to provide irrigation for up to 10 acres (0.20 cfs) and stockwater of up to 40 head of cattle and horses (0.04 cfs). The original applicant (Joe Chance) assigned the permit to the current water user (Ralph Cox) on 12/8/2014. Ralph Cox provided proof of beneficial use on 8/6/2019. On 9/19/2019, I (Amy Steimke) visited the site to complete a beneficial use field examination.

An existing well on site (43.78365, -116.47934) serves as a point of diversion for all uses outlined in the permit. The user is uncertain what this well's motor or pump specifications are. This well also supplies water for in-house domestic use, but the user had not applied for that use on his permit. The permit allowed for drilling of another well, but this was never completed during the development period. Ralph submitted a well drilling permit upgrade fee to the department for his existing well as the original fee paid did not cover irrigation uses of the well.

The field exam found that the water user irrigates 4.9 acres of pasture and lawn/landscaping. An in-ground sprinkler system is installed and provides irrigation to the lawn/landscaping and a 2" manifold perimeters the yard. Ralph irrigates two pasture areas: one on the west side and one on the east side of his property. At both locations, he uses Weather Tec 10-67 full circle sprinklers (nozzle diameter of 9/32"). The pasture on the west side is irrigated with hoses connected to two hydrants. At the eastern pasture, Ralph has tapped into the manifold line in two locations to run lines to the pastures. At this location, he has approximately 23 sprinklers that are mounted throughout the pasture. Stockwater tanks are filled with hoses and are located in both the eastern and western pastures.

Measurements were made at both pastures. At the western pasture, the two sprinklers were run and I measured 45 and 50 PSI at the two heads. This results in 32.5 GPM, or 0.07 cfs. At the eastern pasture, three sprinklers can be run simultaneously. At this location, I measured 25 PSI at each sprinkler head which results in 35.4 GPM, or 0.08 cfs. The water user does not irrigate both eastern and western pastures at the same time.

Ralph had a few head of horse/cattle at the time of the field exam, but has never had or intends to have the 40 horse/cattle on the permit. He has always kept less than 10 animals, so I recommend to license the rate and volume for stockwater at this amount, per the Field Examiner's Handbook.

Given that the capacity of the system is 0.08 cfs, I recommend to license the irrigation component of this permit at 0.08 cfs for 4.9 acres. The annual volume I recommend for irrigation is 22.1 AF, which is the product of the number of irrigated acres developed and the headgate requirement of 4.5 afa. For stockwater use, I recommend to license this permit for 0.02 cfs and 0.2 AF annually.

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

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/01 to 11/15	0.08 CFS	22.1 AF
STOCKWATER	01/01 to 12/31	0.02 CFS	0.2 AF

Totals: 0.08 CFS 22.3 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 Amy Steimke - Hydrogeologist, Staff

Field Examiner's Name Amy Steimke Date 12/24/2019

Reviewer [Signature] Date 12/30/2019

Map showing place of use (POU) and point of diversion (POD) for water right 63-33162**System diagram for water right 63-33162**

Sprinkler Calculators

Flow Rate Calculator Summary Sprinkler Nozzle Flow Rate Calculator		Applicant: Ralph W.E. Cox								
Summary of Methodology <i>This spreadsheet tool supports the estimation of the flow rate from a sprinkler nozzle or series of sprinkler nozzles. The user can specify up to three different sprinkler nozzle types, and the total number of each of the three types of nozzles. The equation used to calculate the flow rate(s) is a simplified form of the Bernoulli Equation, which along with several supporting relationships, were developed from Hagan et. al. 1987, Jensen 1983, and Lindeburg 1999.</i>		Field Exam Date: 9/19/2019 WR Number: 63-33162								
Summary of User Input <u>Nozzle Type 1</u> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">C Value:</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Nozzle Press.:</td> <td style="text-align: center;">25</td> </tr> <tr> <td>Nozzle Diam.:</td> <td style="text-align: center;">0.28125</td> </tr> <tr> <td>No. of Nozzles:</td> <td style="text-align: center;">3</td> </tr> </table>		C Value:	1	Nozzle Press.:	25	Nozzle Diam.:	0.28125	No. of Nozzles:	3	Notes: Measurements were obtained under two configurations. The measurements here were obtained in the eastern pasture where three sprinklers were operated at the same time.
C Value:	1									
Nozzle Press.:	25									
Nozzle Diam.:	0.28125									
No. of Nozzles:	3									
Summary of Results and Output <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Type 1 Nozzle(s):</td> <td style="text-align: center;">0.08</td> <td style="text-align: center;">cfs</td> </tr> <tr style="background-color: yellow;"> <td>Combined:</td> <td style="text-align: center;">0.08</td> <td style="text-align: center;">cfs</td> </tr> </table>		Type 1 Nozzle(s):	0.08	cfs	Combined:	0.08	cfs			
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	<u>Nozzle Type 1</u>	<u>Nozzle Type 2</u>															
C Value:	1	1															
Nozzle Press.:	45	50															
Nozzle Diam.:	0.28125	0.28125															
No. of Nozzles:	1	1															
Summary of Results and Output <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">Type 1 Nozzle(s):</td> <td style="text-align: center;">0.04</td> <td style="text-align: center;">cfs</td> </tr> <tr> <td>Type 2 Nozzle(s):</td> <td style="text-align: center;">0.04</td> <td style="text-align: center;">cfs</td> </tr> <tr style="background-color: yellow;"> <td>Combined:</td> <td style="text-align: center;">0.07</td> <td style="text-align: center;">cfs</td> </tr> </table>		Type 1 Nozzle(s):	0.04	cfs	Type 2 Nozzle(s):	0.04	cfs	Combined:	0.07	cfs							
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Combined:	0.07	cfs															

Pictures



Figure 1: Point of diversion.



Figure 2: Pasture place of use near on western side of property (near barn).



Figure 3: Pasture place of use on eastern side of property. Notice stockwater tank on right side of photo.

Driller's Report

Form 238-7
6/02IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT1. WELL TAG NO. D D0047912

DRILLING PERMIT NO.

Water Right or Injection Well No.

2. OWNER:

Name SAGUARO HOMES LLC.Address P.O. BOX 307City EMMETT State ID Zip 83617

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub, or Directions to well.

Twp 5 North ☒ or South ☐Rge 1 East ☐ or West ☒Sec 8 NW 1/4 SE 1/4Gov't Lot County ADALat: 43° 47' 019" N Long: 116° 28' 761" WAddress of Well Site 10103 W. COLTON LN.City EAGLELi. 3 Blk. 1 Sub. Name COLTON RANCH SUB.

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
5/8 BENTONITE	0	23	1150 lbs	10" OVERBORE

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 498'Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6 2 1/2	498	250	STEEL	X			X	
5 4 9/16	511	258	STEEL		X		X	
5 5/8	522	258	STEEL		X		X	

Length of Headpipe 17' Length of Tailpipe 1'Packer ☒ Y ☐ N Type RUBBER K-PACKER

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method

Screen Type & Method of Installation JOHNSON/WASHDOWN

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
511	521	.025	304	5	S.S.		

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
N/A				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

385 ft. below ground Artesian pressure lbDepth flow encountered ft. Describe access port or control devices

12. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
30		520'	1 HR.

Water Temp.

Bottom hole temp.

Water Quality test or comments

Depth first Water Encounter

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Well ID	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10	0	2	TOP SOIL		X
	2	23	BROWN CLAY		X
8	23	50	BROWN CLAY		X
	50	285	BROWN SANDY CLAY w/SAND		X
	285	320	COARSE SAND		X
6	320	415	BLUE CLAY w/SAND STREAKS		X
	415	476	BLUE COARSE SAND w/CLAY	X	
	476	480	BROWN CLAY		X
	480	495	BLUE COARSE SAND	X	
	495	505	BLUE CLAY		X
	505	522	BLUE COARSE SAND	X	

RECEIVED

MAR 28 2007

WATER RESOURCES
WESTERN REGIONCompleted Depth 522' (Measure)Date Started 3/20/07 Completed 3/23/07

14. DRILLER'S CERTIFICATION

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

Company Name D P W Firm No. 332Principal Driller Mark P. [Signature] Date 3/26/07

Driller or Operator II _____ Date _____

Operator I _____ Date _____

Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES