

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 95-17582
Exam Date: 10/20/2020

1. Current Owner:
COEUR D ALENE PUBLIC GOLF CLUB INC 2321 W FAIRWAY DR COEUR D ALENE ID 83815
2. Accompanied by: Brandon Bubar
Phone No: 208-765-0218
Address: Same as above
Relationship to permit Holder: Permit holder's representative

3. **SOURCE:**
GROUND WATER

Method of Determination: Arcmap and DRG.

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
95-2144	GROUNDWATER	IRRIGATION, DOMESTIC	DECREED
95-8891	GROUNDWATER	IRRIGATION	DECREED
95-8896	GROUNDWATER	IRRIGATION	DECREED

Comments: 95-2144, 95-8891, and 95-8896 are decreed rights that use groundwater associated with the Coeur D'Alene Public Golf Club and overlap this right's POU. Right 95-17582 was applied for as irrigation at the golf course is required in a compressed time schedule that necessitates a higher diversion rate to provide adequate water. Condition X35 was added to mitigate overlap concerns between the four (4) rights.

There are numerous decreed and a licensed municipal water rights that use groundwater for the City of Coeur D'Alene that overlap this water right, but are not associated with the two groundwater wells nor irrigation operations for the golf course. As such, they are not listed nor factor into overlap concern for licensing purposes.

2. Other water rights with the same point-of-diversion: NO Overlap

Water Right No.	Source	Purpose of Use	Basis
95-2144	GROUNDWATER	IRRIGATION, DOMESTIC	DECREED
95-8891	GROUNDWATER	IRRIGATION	DECREED
95-8896	GROUNDWATER	IRRIGATION	DECREED

Comments: Rights 95-2144, 95-8891, and 95-8896 all utilize the same two groundwater wells associated with this water right. Condition F06 was added to this right to describe that right(s) are diverted through the two PODs listed below.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER NW¼ SE¼, Sec. 3, Twp 50N, Rge 04W, B.M. KOOTENAI County
GROUND WATER SE¼ SW¼, Sec. 3, Twp 50N, Rge 04W, B.M. KOOTENAI County

Method of Determination: GPS. POD(s) are located at -116°49.052, 47°42.480 (pre-1960 well no data available), and -116°49.144, 47°42.243 well permit No. 95-95-C-0008-000.

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	
50N	04W	3			16.0						36.0			11.0	1.5	14.0	15.0		93.5

Total Acres: 93.5

Method of Determination: Field exam and Arcmap aerial imagery.

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☒ X Photo of Diversion and System Attached☒ X

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
PRE-1960 WELL		2EA 100HP			
95-95-C-0008-000		75HP			

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
FLOWMETER(s)						

2. Measurements: Flow measurements were captured during a compressed active irrigation period, where both wells were operating at peak performance. The two 100hp pumps diverting water from the pre-1960 well had flow meters attached that derived a flow rate of 1100 gpm. A flow meter was installed on well 95-95-C-0008-000, which derived a flow rate of 300 gpm. The combined total diversion rate equals 1400 gpm, or 3.12 cfs considering department rounding standards.

E. FLOW CALCULATIONS

Measured Method: Flowmeters installed on two wells derived the following diversion rates:

- Pre-1960 well = 1100 gpm
- Well 95-95-C-0008-000 = 300 gpm
- Total diversion rate = 1100 gpm + 300 gpm = 1400 gpm / 448.83 gal per 1 cfs = 3.12 cfs considering department rounding standards.

Combined water right(s) diversion rate = 3.12 cfs flow measurement - 1.87 cfs (95-2114, 95-8891, and 95-8896 combined diversion rate) = **1.25 cfs**, which is recommended for as the maximum diversion rate when licensing this right.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 93.5 \text{ acres} \times 3.0 \text{ afa} = 280.5 \text{ af}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 3.12 \text{ cfs} \times 246 \text{ days} \times 1.9835 = 1522$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = \mathbf{280.5 \text{ af}}$$

2. Volume Calculations for Other Uses: N/A

G. NARRATIVE/REMARKS/COMMENTS

Field exam performed on 10/20/2020 with the applicant's representative, Brandon Bubar, showed two wells providing groundwater for a golf course irrigation system. Permit 95-17582 was applied for in order to increase the diversion rate to facilitate a compressed timeframe irrigation period. At the maintenance shop location, a pre-1960 well POD with two 100hp variable drive pumps had flow meters installed and used a SCADA to monitor the well performance. At the second well 95-95-C-0008 POD, A 75hp constant flow pump diverts water with a flowmeter installed for monitoring the diversion rate. The applicant has installed a restrictor plate that limits well 95-95-C-0008's diversion performance to approximately 300 gpm output.

Flow measurements were obtained during an active irrigation cycle in the early a.m., when both wells were operating at peak performance. The two 100hp pumps diverting water from the pre-1960 well had a derived flow rate of 1100 gpm. The 75hp pump diverting water from well 95-95-C-0008-000 had a derived flow rate of 300 gpm. The combined total diversion rate for the irrigation system equals 1400 gpm, or 3.12 cfs considering department rounding standards. The applicant has three separate water rights in addition to this permit that use the same irrigation infrastructure and PODs. Rights 95-2144, 95-8891, and 95-8896 are decreed rights and have a combined maximum diversion rate of 1.87 cfs. The maximum diversion rate for this permit is recommended to be the difference of the field exam derived diversion rate of 3.12 cfs minus the combined diversion rate from existing water rights 1.87 cfs, which equals **1.25 cfs**, that will be carried forward to the water right license.

During the field exam, Mr. Bubar provided a tour of the golf course maintenance operation, which included the irrigation system. The applicant uses a sophisticated irrigation management software program that allowed Mr. Bubar to manage irrigation at the golf course with great precision. Photographs were taken to show the tracking screen, which shows hundreds of individual sprinklers and numerous zones. The system is configured to reduce the amount of overlapping spray of an area during active irrigation, greatly reducing the consumption of water throughout the irrigation season. Irrigation occurs daily and is only done in the early a.m. hours, prior to the golf course hours of operation, necessitating the increased diversion rate to accomplish the irrigation of a large area. The golf course irrigation POU was sketched out during the field exam, and during licensing review Arcmap aerial imagery was used to trace out the irrigation POU equaling 93.5 acres. The annual & maximum diversion volume for licensing purposes equals 93.5 acres x 3.0 afa = **280.5 af**.

Condition 046 was removed from the permit during licensing review. Condition X35 was updated to include a maximum diversion volume between four water rights equaling the 280.5 af this permit is licensed for. Condition F06 was added to this right to describe that right(s) 95-2144, 95-8891, 95-8896, and 95-17582 are diverted through the two PODs listed above. All other conditions on permit will remain on license.

required in a compressed time schedule that necessitates a higher diversion rate to provide adequate water. Condition X35 was added to mitigate overlap concerns between the four (4) rights. There are numerous decreed and a licensed municipal water rights that use groundwater for the City of Coeur D'Alene that overlap this water right, but are not associated with the two groundwater wells nor irrigation operations for the golf course. As such, they are not listed nor factor into overlap concern for licensing purposes.

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	03/15 to 11/15	1.25 CFS	280.5 AF
<u>Totals:</u>		1.25 CFS	280.5 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

Luke Bates - Water Resource Agent

Field Examiner's Name



Date

12/8/2020

Reviewer



Date

12/8/2020

State of Idaho
Department of Water Resources
Attachment to Field Exam
95-17582

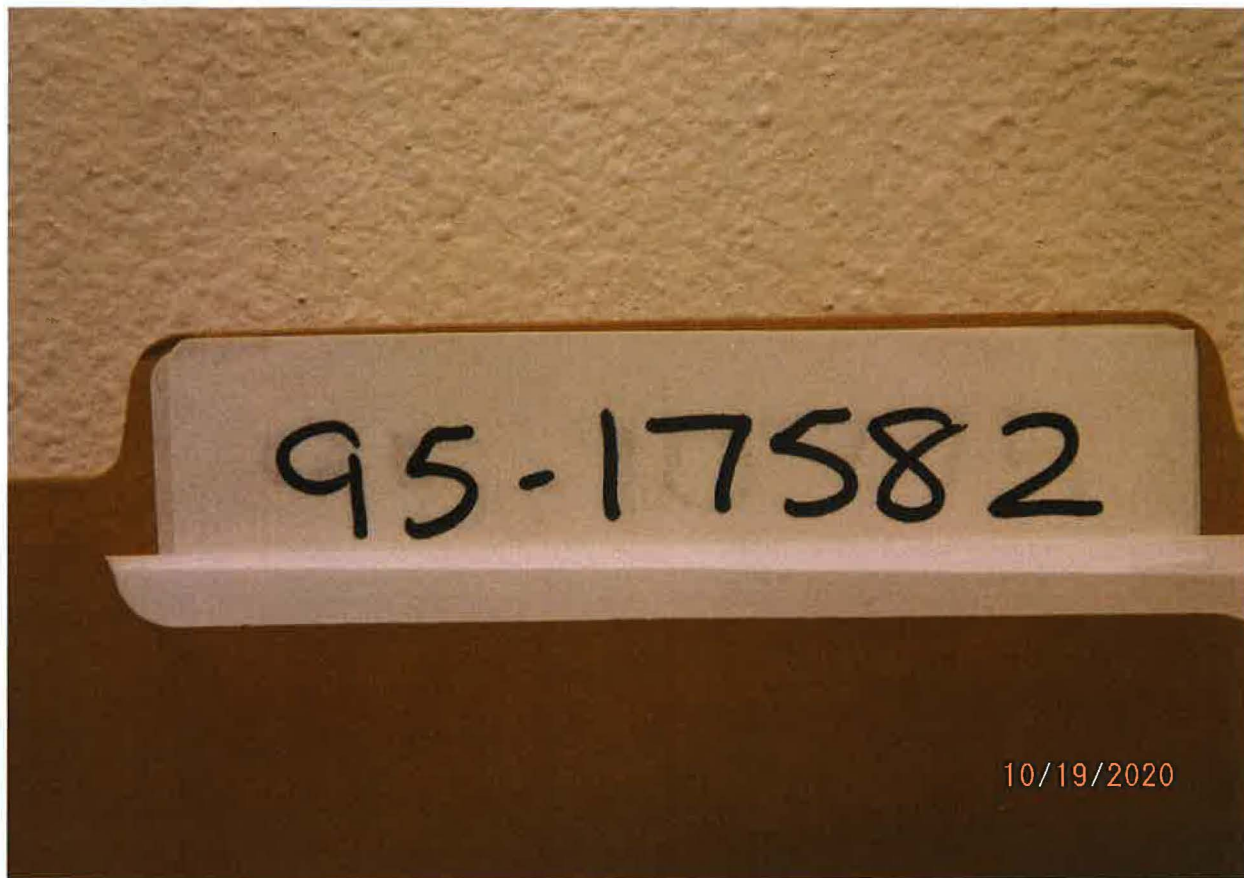
IRRIGATION system diagram.



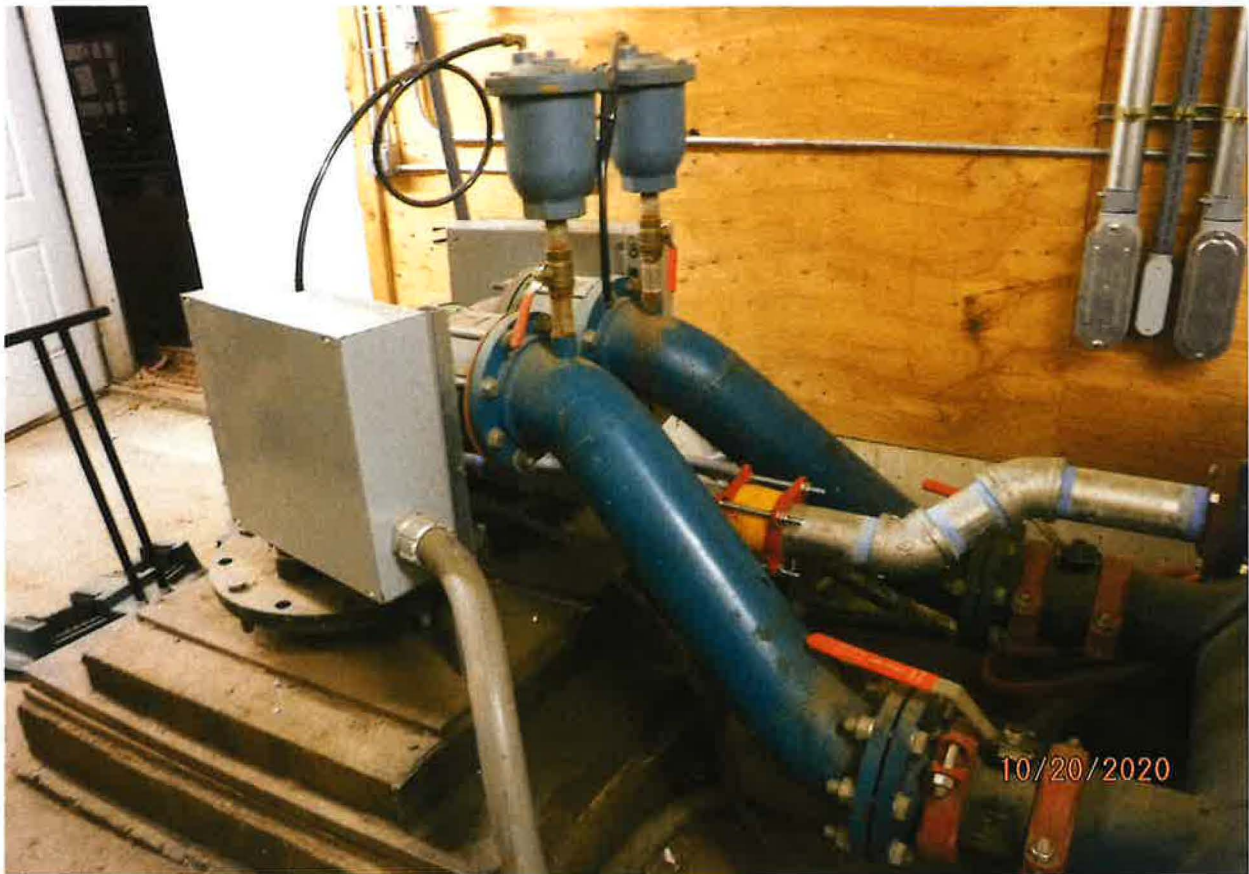
- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters

0 0.075 0.15 0.3 Miles





POD – PRE 1960 WELL – NO IDENTIFICATION, LOCATED IN THE NESESW 50N04W SECTION 3



2EA 100 HP PUMPS INSTALLED IN WELL "PRE 1960"



POD - PRE 1960 WELL CONTROL PANEL



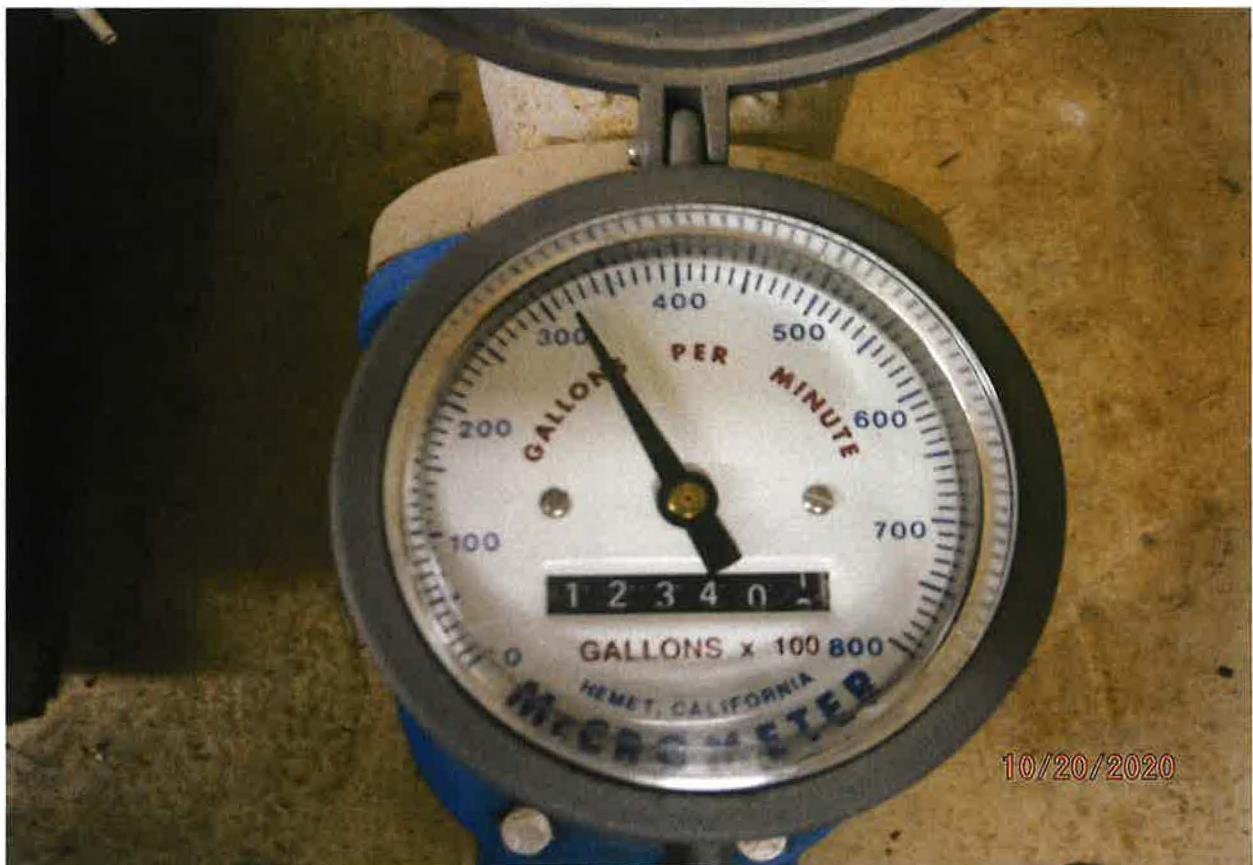
PUMP CONTROL PANEL – 2EA 100 HP PUMPS ACTIVE



POD – WELL 95-95-C-0008, 75 HP PUMP INSTALLED



FLOW METER INSTALLED ON WELL 95-95-C-0008



FLOW METER – FLUCTUATES, WELL HAS RESTRICTOR PLATE LIMITING TO APPROXIMATELY 300 GPM



WELL 95-95-C-0008 PUMP 3 ACTIVE



IRRIGATION POU – COEUR D'ALENE GOLF CLUB



IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU





IRRIGATION POU – SPRINKLER HEAD AND ACTIVE IRRIGATION MONITORING SYSTEM