

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-34284
Exam Date: 7/17/2019

1. Current Owner:
THE TURF CO DARWIN MCKAY
2160 E LAKE HAZEL RD MERIDIAN ID 83642-7204

2. Accompanied by: Darwin McKay
Phone No: 208-860-3478
Address: field south of E. Vantage Point Road
Relationship to permit Holder: owner

3. **SOURCE:**
GROUND WATER

Method of Determination: Field Visit

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-15866	GROUND WATER	STOCKWATER/DOMESTIC	

Comments: The Turf Company has shares in the Boise Project Board of Control/ New York Irrigation District, which has fourteen water rights associated with the POU. The City of Meridian also has two municipal water rights associated with the POU. Note that there was no evidence of any stockwater or domestic use on the Turf Company's Property.

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

Water Right No.	Source	Purpose of Use	Basis
63-10666D	GROUND WATER	IRRIGATION	

Comments: This water permit 63-34284 is utilizing the well and pump originally installed for water right 63-10666D which irrigates 55 acres north the POU for water permit 63-34248 and south of the POD.

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

GROUND WATER NW¼ SW¼, Sec. 4, Twp 02N, Rge 01E, B.M. ADA County

Method of Determination: Site visit and aerial photography.

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	
02N	01E	4											30.0						30.0

Right Acre Limit: 30.0

Total Acres: 30.0

Method of Determination: Aerial photography.

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

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

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
A0340306		30			

Note: The previous field exam states that the pump had a capacity of 30 Hp (see attached page). It would seem at the discharge rate that the pump might be larger than 30 horsepower.

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
Ultrasonic Flow Meter	Panametrics PT 878	General Electric	PT 878	S/N 10227		4/1/2019

2. Measurements:

Date/Time	New Meter Ch 1 Velocity ft/s	New Meter Ch 1 Volume ft ³ /s	New Meter Ch 1 Fwd Totalizer ft ³
7/17/2019 14:10	0	0	151736.318
7/17/2019 14:11	1.116995979	0.210636509	151737.161
7/17/2019 14:12	7.02208951	1.324184196	151816.5996
7/17/2019 14:13	7.061801092	1.331672772	151893.084
7/17/2019 14:14	7.047839439	1.329039966	151977.6306
		1.33	1.34 Average (cfs)

$$(1.324 \text{ cfs} + 1.332 \text{ cfs} + 1.329 \text{ cfs}) / 3 = 1.328 \text{ cfs}$$

E. FLOW CALCULATIONS

Measured Method: Use of Flowmeter: 1.328 cfs

Measured Amount = 1.33 cfs

Maximum Allowable = 0.02 cfs/acre * 30 acres = 0.60 cfs

Permit Allowed = 0.60 cfs

I am recommending that this permit be licensed for 0.60 cfs which is the maximum amount allowed, the permit request, and is less than the amount diversion rate, 1.33 cfs, measured during the field exam.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

Please Note: This is a supplemental right, so no volume will be recommended for this right. The volume below was calculated to populate the WB7 conditions.

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 30 \text{ acres} \times 4.5 \text{ ac-ft/acre} = 135 \text{ ac-ft}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.60 \text{ cfs} \times 245 \text{ days} \times 1.9835 \text{ ac-ft / cfs} = 292 \text{ ac-ft}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 135 \text{ ac-ft}$$

2. Volume Calculations for Other Uses:

G. NARRATIVE/REMARKS/COMMENTS

Darwin McKay owner of the Turf Company obtained a permit to appropriate groundwater (63-34284) on January 23, 2017 for irrigation purposes. The Turf Company submitted proof of beneficial use which was received at IDWR on March 8, 2019. During the field exam on July 17, 2019, Darwin expressed that the Turf Company needed the permit in order to irrigate turf on the shoulders of the irrigation season when surface water from the water rights held by the Boise Project Board of Control are unavailable. The Turf Company previously obtained a water right (63-10666D) to irrigate 55 acres north of the land irrigated under water permit 63-43284. This 55 acres was irrigated from a well drilled to a depth of 487 feet in 2001. The water right 63-10666D allowed for the supplemental diversion of groundwater at a rate of 0.130 cfs on 55 acres. The current permit (63-34284) allows irrigation to be expanded to 30 more acres using the same well developed in 2001. The diversion rate under the current permit is 0.60 cfs. Discharge measured from the pump on July 17, 2019 indicated that the pump can supply 1.325 cfs. All 30 acres were under irrigation at the time of the field visit. I am recommending approval of water right 63-34284 at a rate of 0.60 cfs.

The main irrigation for the Turf Company's farm is provided by surface water from the Farr Lateral. Just south of the bridge at which E. Vantage Pointe Lane crosses the Farr Lateral is a headgate structure that allows surface water from the Farr Lateral to be discharged into a holding pond just across the canal access road. A pump then draws surface water from the holding pond to pressurize the irrigation system. Surface water is the main water supply to this farm. Groundwater provides a supplemental water supply on the shoulders of the irrigation season or if the surface water pump needs repairs.

The POD for water right 63-10666D and water permit 63-34284 is located northwest of the holding pond. Both the surface and groundwater pumps can pressurize the irrigation system. The main irrigation line runs south from the groundwater pump and surface water pump allowing connections to wheel lines or set line sprinkler system to both the east and west of the mainline to irrigate the 55 acres under water right 63-10666D. The main irrigation line then crosses a drainage ditch that runs east-west and separates the 55 acres irrigated under water right 63-10666D from the 30 acres irrigated under permit 63-34284. Once the main line crosses the drainage ditch it splits into two pipes. A shorter pipe heads east and a longer pipe heads west. Again the pressurized pipe is used to provide irrigation water to either wheel lines or handsets. The handsets are used when the turf seed is germinating and wheels lines are utilized once the turf matures.

Have conditions of permit approval been met? X 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	0.60 CFS	

Totals: 0.60 CFS

2. Recommended Amendments

____ Change P.D. as reflected above ____ Add P.D. as reflected above X None

____ Change P.U. as reflected above ____ Add P.U. as reflected above X None

I. AUTHENTICATION

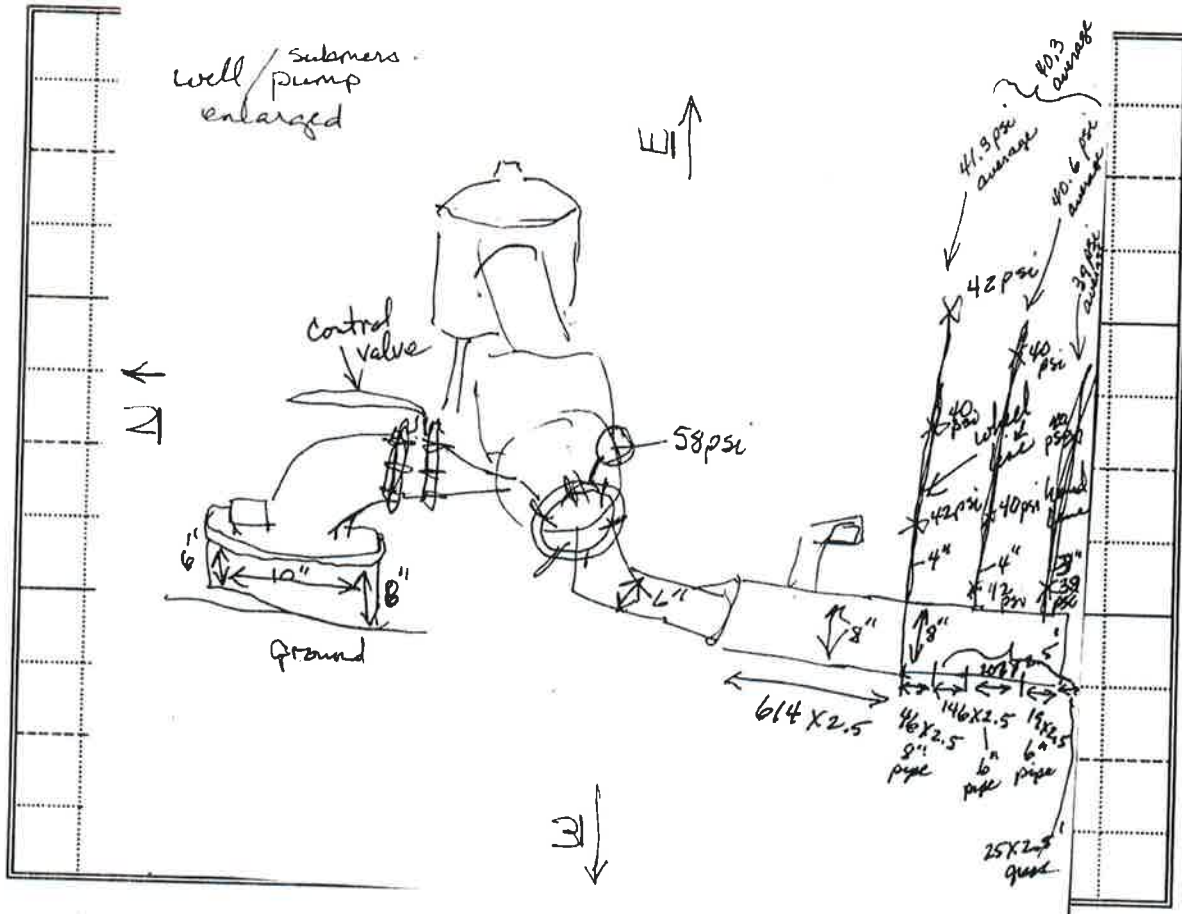
David Hoekema - Hydrologist, Technical

Field Examiner's Name David Hoekema Date 11/25/2019

Reviewer David Hoekema Date 11-25-19

For well used in permit
63-512 (provided by Dan Nelson)

3. **Delivery System Diagram:** Indicate all major components and distances between components. Indicate well size/ditch size/pipe i.d. as applicable.



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
submers.		30			6"

*Code to correspond with No. on map and aerial photo

D. FLOW MEASUREMENTS

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date

2. Measurements: USG pressure gauge used from 3 different lines + 3 nozzles each:
 $42 \text{ psi} + 40 \text{ psi} + 42 \text{ psi} = 41.3$ $40 + 40 + 42 = 40.6$ $38 + 40 = 39 \text{ psi}$
 overall average equals 40.3 psi

AUG 25 1995



The main irrigation for the Turf Company's farm is provided by surface water from the Farr Lateral (which runs diagonally northwest to southeast along the eastern edge of the land irrigated under water right 63-10666D). Just south of the bridge at which E. Vantage Pointe Lane (which follows the northern border of the POU for WR 63-10666D) crosses the Farr Lateral is a headgate structure that allows surface water from the Farr Lateral to be discharged into a holding pond just across the canal access road. A pump then draws surface water from the holding pond to pressurize the irrigation system. Surface water is the main water supply to this farm. Groundwater provides a supplemental water supply on the shoulders of the irrigation season or if the surface water pump needs repairs.

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(Above) Surface Water Pump which draws water from the holding pond seen in the upper right corner of the picture. The Farr Lateral which gravity feeds water into the holding pond is just beyond the dirt access road behind the pond.



(Above) The blue pipe is the suction line for the surface water pump. The gravity discharge into the holding pond is clearly seen at the upper left end of the pond coming from the access road.



(Above) The Farr lateral with the farm headgate shown in the center right of the picture.



The pump control panel with the Groundwater POD shown to the right. The holding pond is to the left of the photograph.



(Above) POD for supplemental groundwater well for water right 63-10666D and water permit 63-34284.



(Above) Looking down the mainline from the 33 acres under water permit 63-34284 across the 55 acres under water right 63-10666D toward the POD.

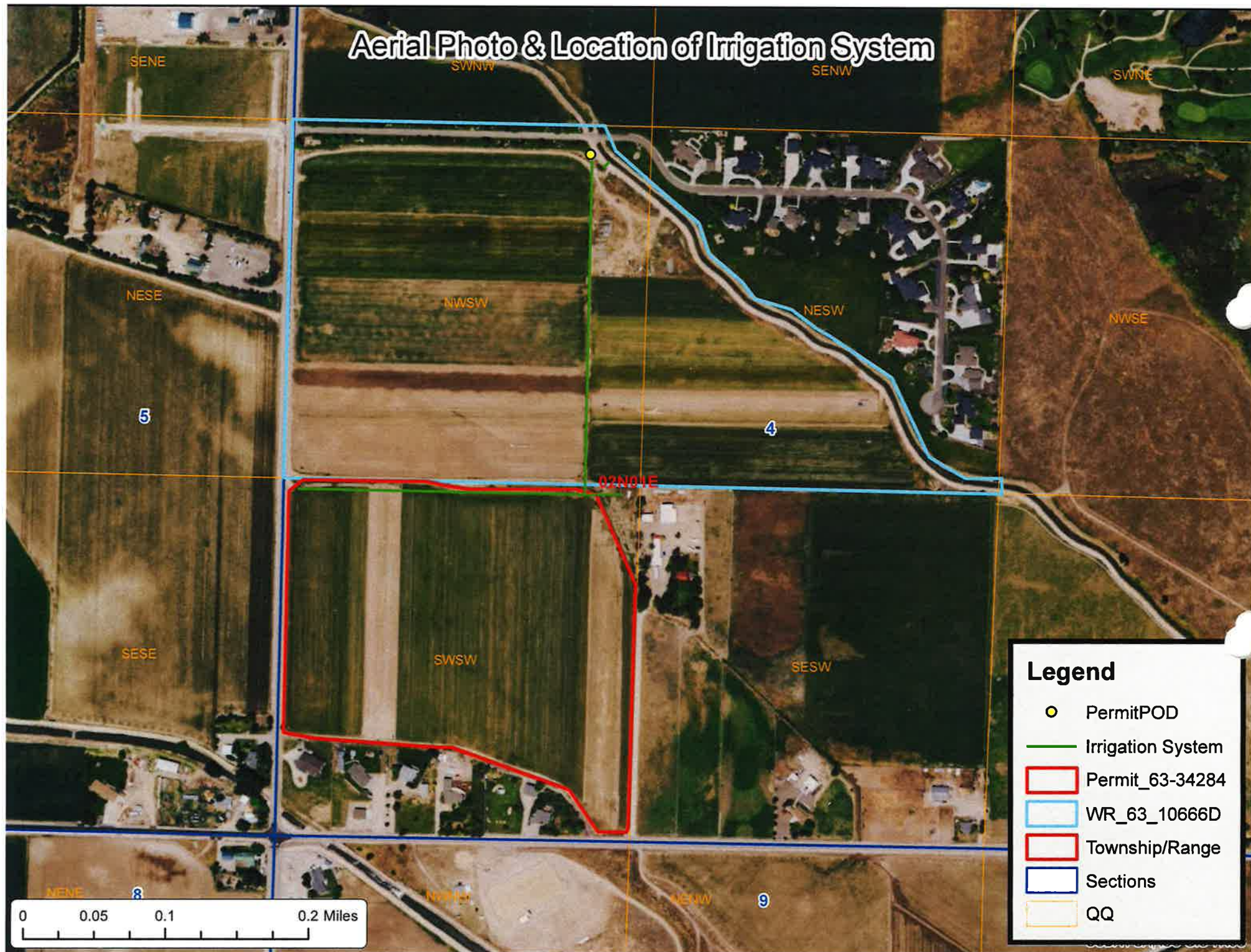


The mainline after a 90 degree turn heading toward Eagle Road along the north end of the 30 acres irrigated water permit 63-34284.



Aerial Photo from Google Maps showing the location of the groundwater well and surface water holding pond, Farr Lateral, and location of surface water pump.

Aerial Photo & Location of Irrigation System



Location Map

The map displays the Tennile area in Idaho, featuring the Tennile Creek, Hubbard Reservoir, and various roads and landmarks. The PermitPOD is marked with a yellow dot. The Permit_63-34284 is outlined in red, and the WR_63_10666D is outlined in green. The map includes a legend in the bottom right corner and a scale bar in the bottom left corner.

Legend

- PermitPOD
- Permit_63-34284
- WR_63_10666D

Scale

0 0.25 0.5 1 Miles

Legend

- PermitPOD
- Permit_63-34284
- WR_63_10666D

Legend

- PermitPOD
- Permit_63-34284
- WR_63_10666D

Legend

- PermitPOD
- Permit_63-34284
- WR_63_10666D

Legend

- PermitPOD
- Permit_63-34284
- WR_63_10666D