

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
IN-OFFICE REVIEW/BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Exam Date: 02/21/2024

1. Does this qualify for an in-office field exam (IDAPA 37.03.02.035.01.r)? X Y ___ N
- a. X Irrigation of 5 acres or less
b. ___ Storage of up to 14.6 AF for stockwater purposes only
c. ___ Any use other than irrigation or storage, if the combined diversion rate is 0.24 cfs or less
d. X Other Multiple Domestic uses.
2. Current Owner: **TIMBER BASIN AIRPARK INC**
Owner of Record Correct? ___ N
Address of Record Correct? ___ N
If No Explain:
3. Beneficial Use Fees have been paid: X Y ___ N Receipt No: N044308
4. Source: **GROUND WATER** Tributary: **NA**
Method of Determination: Bonner County Maps, GIS, and Tax Parcel Data
Change in Source: ___ Y X N

B. OVERLAP REVIEW

1. Other water rights with the same place of use: X No Overlap

Water Right No.	Source	Purpose of Use	Basis
96-7569	SPRING-SINKS	IRRIGATION	LICENSE
96-8188	UNNAMED STREAM	IRRIGATION	LICENSE
96-16221	PROVIDENCE LAKE	IRRIGATION/FIRE	PERMIT

Comments: Three rights overlap the irrigation POU, however rights 96-7569 and 96-8188 overlap adjacent parcels, have surface water sources, and only provide a combined 1.5 acres of irrigation within the SESE of section 4. WR 96-16221 is a permit for irrigation with a surface water source owned by Chris Mitchell (owner of right 96-9727) overlapping the permit place of use (POU). The owner stated that this system is no longer in use. The license for right 96-9727 should carry condition R66 limiting the total irrigation use within the POU to the field headgate standard and 0.03cfs per acre.

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

Water Right No.	Source	Purpose of Use	Basis
NONE	NA	NA	NA

Comments: There are no rights sharing the permit point of diversion (POD).

C. DIVERSION AND DELIVERY SYSTEM

1. Location of Point(s) of Diversion:

Source	Govt. Lot	¼	¼	¼	Sec.	Twp.	Rge.		County
Well Tag D0055488			SE	SE	4	56N	01W	B.M.	BONNER

Method of Determination: GIS, and Tax Parcel Data

Change in POD? ___ Y X N Amendment Required? ___ Y X N

2. Place of Use: IRRIGATION

TWP	RGE	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
56N	01W	4																1.4	1.4
56N	01W	9	1.2																1.2
Total Acres =																			2.6

Method of Determination: Bonner County Maps, GIS, and Tax Parcel Data

Change in POU? ___ Y X N Amendment Required? ___ Y X N

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

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.

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

☐ Photo of Diversion and System Attached

3. Diversion Id No.*	Motor Make	HP	Pump Model	Pump Make	Pump Serial No. or Discharge Size
D0055488	Unknown	1.5	Unknown	Unknown.	Unknown

*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
NONE	NA	NA	NA	NA	NA	NA

2. Measurement Comments: The permit holder stated that the system uses a 1.5 Hp pump and a pressure tank. A maximum head of about 90ft was estimated to the POU using the well drillers log and DRG map.

E. FLOW CALCULATIONS

☐ Additional Computation Sheets Attached

Measured Method:

A theoretical calculation and Administrative Memo #17 were used to determine a reasonable rate of diversion.

$$Q = (1.5 \text{ Hp})(8.8)(0.90 \text{ eff})/(90 \text{ ft lift}) + (2.31)(40 \text{ psi}) = 0.07 \text{ cfs}$$

Use by facilities:

1 home (internal only)= 0.04cfs (as per Administrative Memo #22)

6 cabins-with 1 toilet ea. (4GPM x 6), 1 shower ea. (4 GPM x 6), 2 sinks ea.(2 GPM x 12)= 90 GPM, or approx. 0.16cfs (per Table 1 below). Administrative Memo #22 recommends an instantaneous rate of 0.12cfs for 7 domestic homes. However, the maximum rate is limited by the system and the permitted maximum diversion rate.

By Fixtures:

Shower.....	4 to 6 gpm
Bathub.....	4 to 8 gpm
Toilet.....	4 to 5 gpm
Lavatory.....	1 to 4 gpm
Kitchen sink.....	2 to 5 gpm

Table 1- Instantaneous Rates for domestic from the Field Examiners Handbook References-"Rural and Domestic Water Uses"

Theoretical Calculation= 0.07cfs

Permit allowed = 0.07cfs

Recommendation= 0.07cfs

Comments:

Approximately 0.07cfs is possible with the 1.5Hp pump. According to Administrative memo #17 up to 0.03cfs per acre is standard for the irrigation of up to 5 acres. I am recommending a diversion rate of 0.07cfs for the license, the full rate for the permitted uses. The permit holder noted that the irrigation is done in rotation at variable times throughout the POU and the cabins and home are all occupied on different schedules.

F. VOLUME CALCULATIONS

1. Volume Calculations for Irrigation:

$$V = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 2.6\text{-acre} \times 3 \text{ AF} = 7.8 \text{ AF}$$

I.R.

$$V = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.07\text{cfs} \times 214 \text{ days} \times 1.9835 = 29.7 \text{ AF}$$

D.R.

$$V = \text{Smaller of } V_{\text{I.R.}} \text{ and } V_{\text{D.R.}} = 7.8 \text{ AF}$$

2. Volume calculations for Domestic:

1 home (internal only)= 0.6 AF (as per Administrative Memo #22)

6 cabins each with 1 toilet(28 Gal/day), 1 shower(60 Gal/day), 2 sinks(4 Gal/Day) x6 cabins x 365 Days=201,480 Gal, approx. 0.6AF(as per Table 2) Calculated for dual occupancy.

Residence – Urban:

Drinking fountain, continuously flowing.....	50 to 100 gal. per day.
Each shower bath.....	25 to 60 gal.
To fill a bathtub.....	35 gal.
To flush toilet.....	3 to 7 gal.
To fill lavatory.....	1 to 2 gal.
Dish Washing Machine – per load.....	10 to 20 gal.
Automatic washer – per load.....	30 to 50 gal.

Table 2- Volume use per fixture for urban domestic use from the Field Examiners Handbook References-"Rural and Domestic Water Uses"

Comments:

I am recommending an annual volume of 7.8 AF for the irrigation of 2.6 acres for the license, as per the field headgate calculation above. Administrative Memo #22 allows up to 0.6 AF annually per domestic home, which would allow 4.2 AF annually for the home and 6 cabins. However, the permit holder described the usage as seasonal in the home and 6 cabins, which are typically occupied at different times (rarely, if ever at overlapping times). A volume calculation for year-round use based on the fixtures described in the permit holder's system description and the rural and domestic reference from the Field Examiners handbook estimated approximately 0.6 AF annually for the usage in the 6 cabins. The volume for the home, although seasonal will be based on the 0.6 AF annually (as per Admin. Memo #22). I am recommending a total annual volume of 1.2 AF for domestic use.

G. PURPOSE OF USEIrrigation X Y N # Stock NA Domestic # of Homes 1 Home, 6 Cabins Change in Purpose of Use? Y X N Method of Determination: Bonner County Maps, GIS, and Tax lot Data**H. NARRATIVE/REMARKS/COMMENTS**

This permit for the irrigation of 3 acres and multiple domestic uses qualifies for an in-office examination for license. The permit holder submitted the Proof of Beneficial Use, received by IDWR on January 16, 2024, stating in section #3 that the beneficial use was developed 3 acres of irrigation and domestic use in 14 structures. I was unable to identify the buildings or details of the extent of use within the POU based on the documentation received, so I called the permit holder requesting additional information including an outline of the area being irrigated using the well, an itemized list of the system components (toilets, sinks, bath/shower, etc) and a system diagram. On February 20, 2024, the permit holder called and emailed the requested information. After some additional correspondence the permit holder was able to confirm the areas of irrigation. The irrigation POU is comprised of a common area between the cabins and runway, areas between the hangars and runway, and the area surrounding the home south of the road. The permit holder explained that the runway is not watered and the individual areas in front of the cabins and hangars are watered via the frost-free faucets located between the structures to hoses and sprinklers. The irrigation areas are not watered at the same time as the hangar/cabin owners are responsible for watering their own areas. The common area is watered when any cabins are occupied by the occupants. Other areas are kept green by significant subirrigation for part of the year. A GIS measured area of approximately 2.6 acres of irrigation was identified and confirmed by the permit holder, who also noted that the areas south of the hangars were watered using permit 96-16221 to divert surface water from the lake for irrigation, but this area is no longer being watered. A theoretical calculation confirmed that the pump can provide the 0.07cfs rate on the permit. The domestic use described is for 6 cabins with a full bathroom (each with a toilet, shower, and sink), a sink in the living area of each cabin, and 1 home with 1 full bathroom and a kitchen.

The facilities for domestic use and irrigated area details support issuing the license for the full permitted rates of 0.07cfs for each use(see section E). The Rural and Domestic Water Use supplement for the field examiners handbook was used to calculate an annual volume of 0.6 AF for domestic use in the 6 cabins (see section F), and Administrative memo #22 allows 0.6 AF annually for use in 1 home. Administrative memo #17 allows 0.03cfs per acre for the irrigation of up to 5 acres of irrigation. However, the system is limited to a total combined rate of 0.07 cfs, as stated in the permit. I am recommending an annual volume of 7.8 AF for irrigation on the license, as per the standard field headgate calculation in section F of this report. I am recommending an annual volume of 1.2 AF on the license for domestic use in 1 home and 6 cabins.

I am recommending the license be issued with the full permitted combined total rate of 0.07cfs and conditions 132, R66, and 004. Conditions 26A and 046 were removed at licensing, as per current guidance.

Have conditions of permit approval been met? ☒ Yes ☐ No**I. RECOMMENDATIONS**

1. Recommended Amounts:

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
DOMESTIC	01/01 TO 12/31	0.07CFS	1.2 AF
IRRIGATION	04/01 TO 10/31	0.07CFS	7.8 AF
	<u>Totals:</u>	0.07CFS	9.0 AF

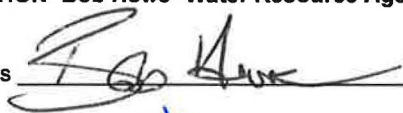
2. Recommended Amendments:

☐ 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

Other: < >

J. AUTHENTICATION- Bob Howe- Water Resource Agent

Field Examiner's



Date

3/26/2024

Reviewer



Date

3/27/24



Figure 1- Bonner County GIS imagery- the parcel appurtenant to the irrigation/domestic POU (centered). The runway is not watered and is oriented north to south for approximately 1000ft north of the road and 500ft south of the road.



Figure 2- Aerial image from permit holder-southside of Timber Basin Rd - Home is circled in blue.



Figure 2.A.- Aerial image from permit holder- northside of Timber basin Rd. Yellow area outlines the common irrigation area near cabins. Red outlines the pumphouse (well).



Figure 3-Bonner County GIS imagery- Zoomed in on the structure visible within the domestic POU. The 6 cabins are visible north of the road, on the west side of the runway, which runs approximately 1500ft from north to south.

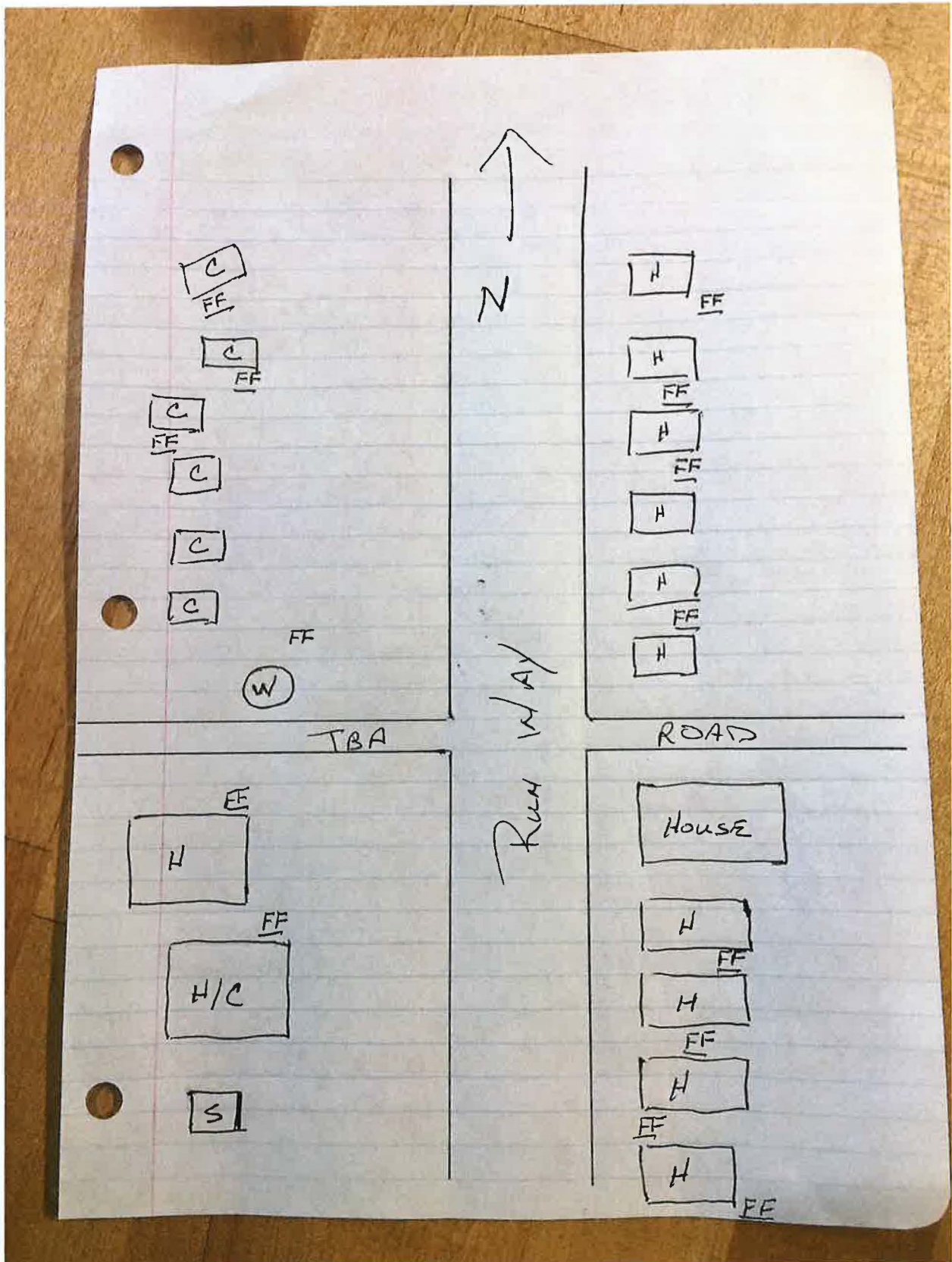


Figure 4- System diagram received from permit holder.

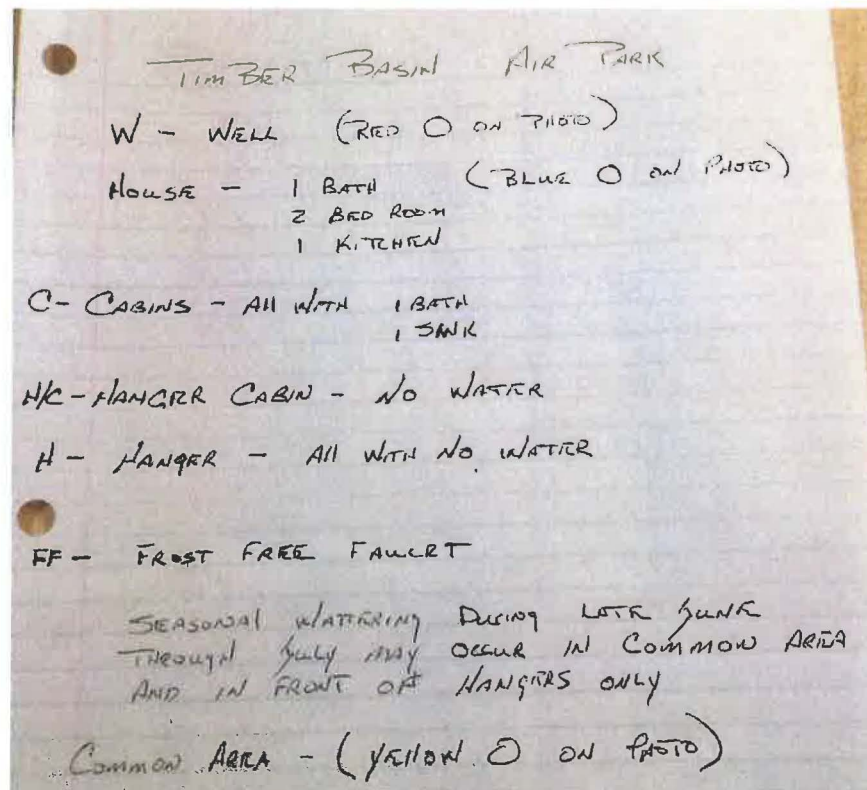


Figure 4.A- Legend for system diagram with details of usage in structures.



Figure 5- Aerial image from permit holder. Yellow area outlines the common irrigation area near cabins. Red outlines the pumphouse.

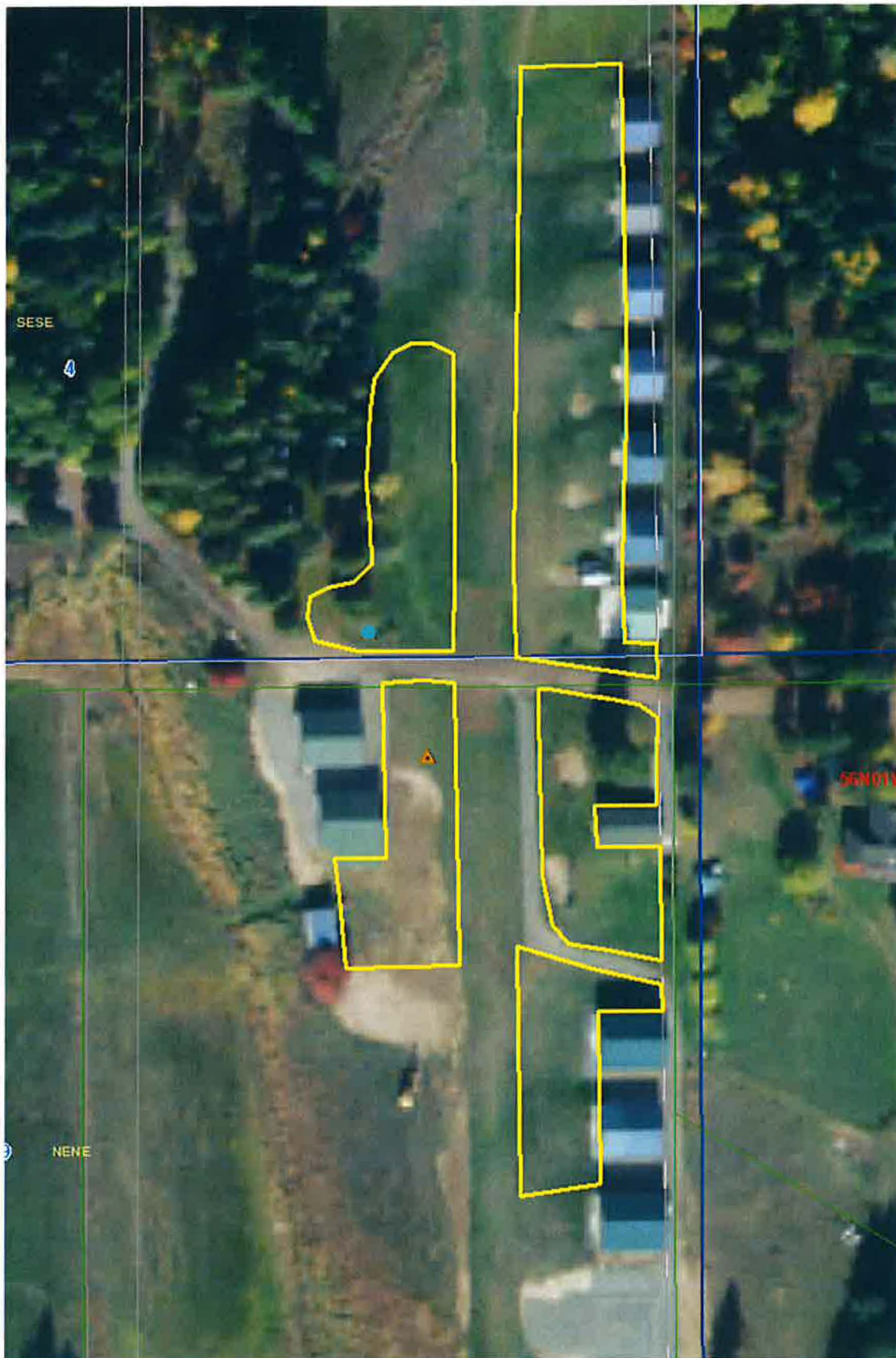


Figure 6- GIS 2021- Image of POU-outlined in yellow. Light blue point is the point of diversion. Irrigated areas were discussed, coordinated, and confirmed with permit holder via phone and email.

Howe, Bob

From: chris mitchell <2chrismitchell@gmail.com>
Sent: Tuesday, February 20, 2024 4:59 PM
To: Howe, Bob
Subject: Re: Revised Irrigated Areas-Please Confirm-RE: TBA

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

Hi Bob, I have reviewed the imagery for irrigation at Timber Basin Airpark. I confirm the irrigation areas to be accurate and correct. Thank you Sir for your on going help, I appreciate it all. Chris Mitchell
Sent from my iPad

On Feb 20, 2024, at 3:12 PM, Howe, Bob <Bob.Howe@idwr.idaho.gov> wrote:

Hi Chris,
Based on our conversation and your review of the previous imagery I emailed you I have measured approximately 2.6 acres of irrigation.
Please review the attached image and if this is accurate, please respond confirming the irrigated areas. If it is not accurate, please provide any corrections.
Once we have the confirmed irrigated areas, I will wrap up the in-office exam and submit the license documents for supervisory review and signature.
Thank you for all your assistance getting this together. It has been a pleasure.

Best Regards,
<image001.png>

From: chris mitchell <2chrismitchell@gmail.com>
Sent: Tuesday, February 20, 2024 2:15 PM
To: Howe, Bob <Bob.Howe@idwr.idaho.gov>
Subject: TBA

CAUTION: This email originated outside the State of Idaho network. Verify links and attachments BEFORE you click or open, even if you recognize and/or trust the sender. Contact your agency service desk with any concerns.

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