

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-35021
Exam Date: 09/01/2020

1. Current Owner:
ROGER FAIRCHILD 2667 SW 3 1/2 AVE FRUITLAND ID 83619
2. Accompanied by: Roger Fairchild and Bob Steele
Phone No: 208-739-3287
Address: 2667 SW 3 1/2 Ave Fruitland, ID 83619
Relationship to permit Holder: Owner Roger Fairchild and facilities employee Bob Steele.

3. SOURCE:
GROUND WATER

Method of Determination: Field Exam

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-2322	Wilson Slough	Irrigation	Decreed
65-2433	Payette River	Irrigation	Decreed
65-2900	Tunnel No. 2 Drain	Irrigation	Decreed
63-2878	Elijah Drain	Irrigation	Decreed

Comments: Rights 63-2322 and 65-2433 are owned by the Bureau of Reclamation (BOR). Rights 65-2900 and 63-2878 are owned by the Black Canyon Irrigation District (BCID). According to Mr. Fairchild, he does not receive any water shares from BCID or receive water from the BOR. Rather, all overlapping rights have large places of use and do not directly overlap with this permit's place of use.

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

Water Right No.	Source	Purpose of Use	Basis
NONE			

Comments: There are no overlapping water rights.

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER NW¼ SE¼, Sec. 13, Twp 07N, Rge 05W, B.M. PAYETTE County

Method of Determination: Handheld GPS waypoint at well head of Latitude 43.942582 Longitude -116.8822432

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	
07N	05W	13									0.3					5.4			5.7

Total Acres: 5.7

PLACE OF USE: INDUSTRIAL

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07N	05W	13														X			

PLACE OF USE: AESTHETIC STORAGE

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07N	05W	13														X			

PLACE OF USE: DOMESTIC

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
07N	05W	13														X			

Method of Determination: Field Exam and 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.

XX Aerial Photo Attached (required for irrigation of 10+ acres).X Photo of Diversion and System Attached

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
D0070277	NA	20	2160603177	NA	NA

D. FLOW MEASUREMENTS

1.

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

2. Measurements: A flow measurement was not possible at the time of the field exam.

E. FLOW CALCULATIONSX Additional Computation Sheets Attached

Measured Method: A theoretical calculation was used to determine if the permitted flow rate was possible and reasonable. The HP and pressure were derived from the power control panel that is used for the well.

$$Q = \frac{8.8 \times \text{Efficiency} \times \text{HP}}{\text{depth} + 2.31 \times (\text{PSI}) + \text{friction}}$$

$$\text{Flow} = \frac{8.8 \times .70 \times 20 \text{ HP}}{293 + 2.31 \times 65.6 \text{ psi} + 0} = 0.276 \text{ cfs or approximately .28 cfs which equates to 125.7 GPM. Rounded to 126 GPM.}$$

The permit was approved for the irrigation of 30 acres and 0.27 cfs. Although the theoretical diversion rate calculated above is nearly parallel to that of the permitted amount, the observed irrigation occurring at the time of the exam was only 5.7 acres. Licensing 0.27 cfs over 5.7 acres equates to 0.05 cfs/acre.

According to Administrative Memorandum # 17, the irrigation of 5.0 or more acres requires justification for a rate per acre amount beyond the standard 0.02 cfs/acre. This license has no justification for a higher rate, so the maximum allowable rate for the licensed irrigation use is 0.11 cfs. This amount was derived by taking the irrigation acreage that was found at licensing (5.7 acres) and multiplying it by 0.02 cfs ($5.7 \times 0.02 = 0.11$ cfs/acre).

Calculated: 0.28 cfs

Allowable: 0.11 cfs

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$$V_{IR} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 5.7 \times 4.5 = 25.65 \text{ AF}$$

$$V_{DR} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.27 \times 260 \times 1.9835 = 139.2 \text{ AF}$$

$$V = \text{Smaller of } V_{IR} \text{ and } V_{DR} = 25.65 \text{ AF rounded to } 25.7 \text{ AF}$$

2. Volume Calculations for Other Uses: Domestic, Industrial and Aesthetic storage.

Domestic:

At the time of the exam, it was discovered that water was developed for traditional domestic uses as well as washing of a small personal airplane. The Department has the ability to define what domestic purposes of water use are. In this case, washing the airplane uses a very minimal amount of water. As such, this use of water will also be categorized as a domestic use. The other domestic uses of water are for a toilet, shower and sink. According to the permit holder, the toilet, shower and sink are used 1 time per week. The Department's standard 5 gallons per use for toilets, 5 GPM for showers and 3 GPM for sinks will be used. Using a typical garden hose, (5GPM), the airplane is washed an estimated 5 times per year and it takes 1 hour to wash the plane. Based on this information:

Toilet use = 5 gallons per flush x 1 flush/week x 52 weeks = 260 gallons per year (GPY)

Shower use = 5 gallons per minute x 10 minute shower x 1 shower per week x 52 weeks = 2600 GPY

Sink Use = 3 gallons per minute x 30 seconds washing (0.5) x 1 wash per week x 52 weeks = 78 GPY

Plane washing = 5 gallons per minute x 60 minutes per wash x 5 times per year = 1500 GPY

Hangar totals: $260 + 2600 + 78 + 1500 = 4438$ GPY

$4,438 \text{ GPY} / 325,850 \text{ gal/af} = .0136 \text{ AF}$. Based on Administrative Memo #6, the calculated volume is rounded to no more precision than tenths. So, **the domestic volume will be 0.1 AF.**

Industrial:

The volumes for the various industrial uses below were calculated based on the estimates provided by the permit holder and facilities employee Bob Steele. Water from the well is used in 2 buildings; a bottling plant and pressing building. Water is also pumped into a single large cooling tower used for cooling and maintaining specified industrial temperatures for the production of apple cider vinegar. Additionally, water is used outside of the buildings for equipment washing throughout the facilities.

Bottling Plant Building:

The bottling building uses water for washing off bottling equipment, washing inside 2 tanks and spraying/cleaning the floor. Additionally, water is used for 1 hand sink, 1 restroom and occasionally hosing off other equipment outside of the building.

Bottling occurs approximately 240 days per year. During these days, the bottling equipment and floor are cleaned 1 time per week with a single 1" nozzle hose, estimated at 10 gallons per minute (GPM). Cleaning the bottling equipment/station and floors takes approximately 1 hour.

The bottling tanks are also cleaned with a hose fed by a 1 inch nozzle. At the time of the field exam, a pressure of 65 PSI was observed on the gauge for the water line connected to the nozzle. Cleaning the tanks occurs 3 times/day and lasts 30 minutes each cleaning. Robert Steele estimated that 20-30 GPM are used from the 1" hose when cleaning the tanks.

Each bottling shift, the sink and bathroom are used by 10 employees. Each employee washes their hands and uses the restroom 2 times per day on average. Standard sink (3GPM) and bathroom (5 GPM) water volumes from the Field Examiners Handbook were used in the calculation.

Other various equipment is washed outside of the building with a pressure washer. This equipment is washed 1 time per week lasting 45 minutes each wash. A pressure washer uses an average of 4 GPM.

Bottling equipment washing: 240 days per year/ 7 days per week = 34.3 weeks washing per year, rounded to 34 weeks
1 cleaning per week x 34 weeks x 60 minutes per cleaning x 10 GPM = 20,400 GPY

Floor/walk in washing: 240 days/ 7 days per week= 34.3 weeks washing per year, rounded to 34 weeks.
1 cleaning per week x 34 weeks x 10 GPM x 60 minutes = 20,400 GPY

Bottling tanks washing: 30 GPM x 30 minutes x 3 times per day x = 2,700 GPD x 240 days per year = 648,000 GPY

Sink use: 10 employees x 2 times per shift x 240 days per year x 3 GPM x 1 minute for washing= 14,400 GPY.

Bathroom use: 10 employees x 2 times per day x 240 days per year x 5 GPM/flush= 24,000 GPY.

Other equipment washing: 1 time per week x 240 days per year/ 7 days per week = 34.3 weeks per year, rounded to 34.
34 weeks per year x 1 cleaning per week x 4 GPM x 45 minutes= 6,120 GPY

Bottling facility totals: 20,400 + 20,400 +648,000 +14,400 + 24,000 + 6,120 =733,320
733,320 GPY / 325,850 gal/af = 2.25 AF rounded to **2.3 AF/Year**

Pressing Facility:

Water is used to clean the two apple presses, various holding tanks and washing the facility floor.

Typically, two apple presses occur each day and washing the presses takes 1 hour each. Apples are pressed an estimated 220 days per year and the presses are cleaned after each press. So there are two cleanings lasting 1 hour each day pressing occurs. Water comes into the building through a 1 ½" line and flows into each presser on a 1" line. According to the permit holder and Robert Steele, an estimated 75 GPM are used to clean each presser for a total of 150 GPM.

The pressing facility consists of 1 smaller tank and 4 larger tanks. It takes 20 minutes to clean the small tank and 1 hour to clean each large tank. The tanks are cleaned 1 time per week with a hose that has a 1 inch nozzle. A portable 1 Hp booster pump is used to increase pressure when cleaning the holding tanks. A pressure of 65 PSI observed on the well power control panel was used in the calculation.

Floor washing: Occurs once per day while pressing (220 days per year). Using a 1 ½ nozzle, water is used for 30 minutes. According to the discussion with Robert Steele, an estimated 30 GPM is used when washing the floors.

Pressers: 2 pressers to clean x 2 presses per day x 60 minutes cleaning per press x estimated 75 GPM x 220 days cleaning pressers per year= 3,960,000 GPY

Using a theoretical calculation, the flow rate for washing the small and large tanks was estimated to be 18 GPM :

$$\text{Flow} = \frac{8.8 \times .70 \times 1 \text{ HP}}{0 + 2.31 \times 66 \text{ PSI}} = 0.04 \text{ cfs or approximately } 18 \text{ GPM}$$

Based on a rate of 18 GPM the water use per year for the tanks was estimated at:

Small tank washing: 220 days per year for pressing / 7 days (for 1 cleaning per week) = 32 weeks cleaning x 1 clean per week x 1 small tank x 18 GPM x 20 minutes = 11,520 GPY.

Large tank washing: 220 days per year for pressing / 7 days (for 1 cleaning per week) = 32 weeks cleaning x 1 clean per week x 4 large tanks x 60 minutes each x 18 GPM= 138,240 GPY

Floor washing: 30 gpm x 30 minutes = 900 GPD x 220 days = 198,000 GPY

Pressing Totals: 3,960,000 + 11,520 + 138,240 + 198,000 = 4,307,760 GPY

4,307,760 GPY / 325,850 gal/af = 13.22 AF. Rounded to **13.2 AF/year**.

Cooling Tower: Based on 20 water use records provided by Robert Steele, the maximum amount of water used in the cooling tower was 127,160 gallons in December 2017. To determine the volume for this use, I took the maximum gallons used and multiplied it by 12 months since the records provided were of monthly totals and the cooling tower is used year round.

Cooling Totals: 127,160 gal x 12 months= 1,525,920 GPY

1,525,920 GPY/ 325,850 gal/af = 4.68 AF. **Rounded to 4.7 AF.**

Fermenting/ Outdoor Holding Tanks:

Using 2019 aerial imagery, there appears to be 80 tanks at the POU. Cleaning occurs throughout the year (52 weeks) as it is necessary to clean the tanks once as vinegar is drained. Robert Steele estimated that 3-4 tanks are cleaned each week and it takes 1-1.5 hours to clean 1 tank. Using the higher numbers, 4 tanks are cleaned each week at 1.5 hours of water use/tank. From a standard above ground yard hydrant, water is pumped through a 3/4 " nozzle into a 3/4" hose. The hose is connected to a portable 3 Hp booster pump.

Due to the location of the holding tanks on the opposite side of the POU from the well, the mobile booster pump is necessary to provide enough water pressure to clean the oversized outdoor tanks. Using this information, a theoretical calculation was done to estimate the flow rate.

$$\text{Flow} = \frac{8.8 \times .70 \times 3 \text{ HP}}{0 + 2.31 \times 66 \text{ PSI}} = 0.12 \text{ cfs or approximately } 54 \text{ GPM} \quad \left(\frac{9 \text{ GPM}}{0.02 \text{ cfs}} \times \frac{0.12 \text{ cfs}}{? \text{ GPM}} = 54 \text{ GPM} \right)$$

Cleaning the outdoor tanks: 54 GPM x 4 tanks x 90 minutes (1.5 hours) x 52 weeks= 1,010,880 GPY

1,010,880 GPY/ 325,850 gal/af = 3.10 AF **rounded to 3.1 AF**

Equipment washing:

Equipment washing entails cleaning the apple delivery semi-trucks after the produce is emptied as well as small apple grinders used to mash apples into a pulp. Equipment washing occurs approximately 220 days per year. There are an estimated 12 loads per week and washing takes about 30 minutes. Additionally, various apple grinders are cleaned on the ground level near the outdoor tanks. The grinders are cleaned once per day and it takes about 15 minutes to clean each grinder. There are 4 apple grinders. The trucks and grinders are cleaned with the same mobile booster pump/hose reels used to clean the tanks.

Cleaning delivery trucks: 220 days per year/ 7 days per week= 32 weeks x 12 trucks per week x 30 minutes x 55 GPM= 633,600 GPY/ 325,850 gal/af= 1.944 AF **rounded to 1.9 AF**

Cleaning apple grinders/totes: 220 days per year x 4 totes x 1 cleaning per day x 15 minutes cleaning x 55 GPM =726,000 528,000/ 325,850 gal/af= 2.228 AF **rounded to 2.2 AF**

Fermenting tanks/equipment washing totals: 3.1 AF + 1.9 AF + 2.2 AF= 7.2 AF

Industrial Uses:

Bottling plant: 2.3 AF

Pressing Station: 13.2 AF

Cooling tower: 4.7 AF

Fermenting/Holding tanks and equipment washing: 7.2 AF

Industrial totals: 2.3 AF + 13.2 AF + 4.7 AF + 7.2 AF = 27.4 AF

Recommended industrial volume: 27.4 AF

Aesthetic Storage: Using ArcMap and aerial imagery from 2019, the pond surface area was estimated to be 0.3 acres. The permit holder stated the pond was approximately 15 feet deep at most. Multiplying the maximum depth by 0.4 produces an average depth of 6.0 feet. Mr. Fairchild applied Bentonite to the bottom of the pond's surface in 2019. Therefore, the seepage rate is presumed to be 0 AF. Using the Department's pond loss analysis spreadsheet (see attached), the estimated evaporation is 0.6 AF and the pond capacity is estimated at 1.8 AF. **This totals 2.4 AF of storage (1.8 Af + 0.6 AF).**

Other permitted storage/pond uses: The permit authorizes irrigation storage and irrigation from storage. At the time of the field exam, the diversion system was not set up to divert water from the pond for irrigation purposes. All irrigation occurred directly from the well through and sprinkler systems.

Therefore, the irrigation storage and irrigation from storage uses will not be recommended.

Total volumes:

Domestic: 0.1 AF

Irrigation: 25.7 AF

Industrial: 27.4 AF

Aesthetic Storage: 2.4 AF

Total: 55.6 AF

Maximum recommended diversion volume for all uses combined: 55.6 AF

G. NARRATIVE/REMARKS/COMMENTS

Roger Fairchild submitted an application for permit on August 28, 2014 to appropriate groundwater for diversion to storage, irrigation from storage and industrial uses. The application was amended to add irrigation, irrigation storage and aesthetic storage uses. An amended application was received on April 23, 2015 which set the priority date for the water uses. No protests were received at advertising and the permit was issued on July 7th, 2015.

The licensing field exam was conducted on September 1, 2020 by Water Resource Agent Alex Dalglish, and Analyst 3 Dan Nelson (IDWR employee). We met permit owner Roger Fairchild and facility employee Bob Steele at the property. Under the permit, water was developed for domestic, irrigation, industrial and aesthetic storage uses. The domestic use was not a use originally approved on the permit. Water is used for a bathroom and sink inside of a hangar building at the place of use (POU). This building is primarily used to house the permit holder's personal Cub airplane. The plane is washed a few times per year using a garden hose and this use of water is also not covered under any use authorized by the permit. Due to the minimal use of water for washing the airplane, it will be categorized as a domestic use along with the shower, sink and toilet. A licensing amendment will be necessary to add the domestic use of water developed under the permit.

Irrigation is for a large grassy area near the pond and trees/shrubs near the entrance of the facility. The industrial water is used in a cooling tower, bottling and pressing facilities and cleaning various tanks and equipment, all of which are for making apple cider vinegar. The permit was also approved for irrigation storage and irrigation from storage uses. During the field exam, it was clear that Mr. Fairchild does not develop the diversion system to divert water to or from the pond for irrigation purposes. As a result, these uses will be removed at the time of licensing. An additional licensing amendment will be necessary to adjust the POU for irrigation use. The permit authorized 5 acres of irrigation in the NE ¼ SE ¼ and 14 acres in the NW ¼ SE ¼ of Twp. 07N, Rge. 05W, Sec. 13. However, at the time of the field exam, irrigation was observed in the NW 1/4 SE ¼ and the NE ¼ SW ¼ of the same Township, Range and Section.

Water for all uses is diverted from a single well using a submersible pump. During the site visit, I collected a GPS point and the coordinates confirmed the well is in the NWSE QQ of Section 13, Township 07 North, Range 05W B.M. in Payette County. This well was drilled new and completed on December 12, 2015 by Haines Water Well Drilling and is associated with metal tag No. D0070277 (see attached well log). According to Department records, the well is on property owned by the Rodger

Fairchild Family Trust. A portion of the POU is located on this same parcel as well as an adjacent parcel, which is owned by John Galt Enterprises, INC. A search of the Idaho Secretary of State lists Roger Fairchild as the registered agent and president of this company (see attached 2020 annual report). Ownership of the POD and POU is not a concern.

Next to the well head, various diversion pipes and shutoff valves are located underground in an oversized vertical culvert. From the wellhead, a 6 inch metal pipe diverts water horizontally until it "T's" into another pipe inside of the vertical culvert. One end of the "T" is 4" in diameter and diverts water southeasterly to industrial buildings. The other end of the "T" from the 6" pipe diverts water through a 6" line underground approximately 115' southwesterly towards a depression area where water is stored in the aesthetic pond. When the 6" pipe surfaces from below the ground, it contracts to a 4" black hose which runs to the center of the pond (see attached diversion works diagram).

Around the north, south and east of the pond, water is used for irrigating a grassy area. From the diversion works in the vertical culvert, a 4" pipe diverts water to pop up sprinkler heads. It appears Mr. Fairchild uses the irrigated area around the pond as a private airstrip and taxiing area. Another 4" irrigation pipe runs from the vertical culvert underground along the NE side of the holding tanks near the entrance of the facility. This line crosses under the paved entrance road and runs back NE where it connects to a 1" main line. This 1" line runs along a northern portion of the parking area and splits off into 6 zones which utilize drip and spray irrigation heads to apply water directly to the base of the trees and vegetation (see attached diversion works diagram). Aerial imagery and the on-site visit were used to determine the irrigation place of use (POU). The permit authorized 30 acres of irrigation but according to aerial imagery from the last 5 years, approximately 5.7 acres were found to have been irrigated. The airstrip and surrounding grassy area near the pond consists of approximately 2.6 acres while the trees and shrubs near entrance of the facility make up 3.1 acres. Due to the layout and nature of underground well diversion works, a flow measurement was not possible. Therefore a theoretical calculation was used to determine the flow rate (see attached calculation).

In the vertical culvert housing the well diversion pipes, a final 4" pipe travels SE to deliver water for industrial uses in a bottling facility. The 4" line "T's" off underground near the edge of the bottling building and the split line supplies water to a small building used as a hangar for Mr. Fairchild's airplane (see diversion works diagram).

The power control panel for the well pump is located on the western exterior of the bottling facility building where the 4" line reaches the structure. This 4" line constrict to a 1 ½" metal pipe inside the building. The 1 ½" line rounds the corner of the building and leads to 1" nozzle outlet with a shutoff valve. A 1" nozzle hose can be connected to this 1" outlet to be used for cleaning the bottling facilities. Other water uses associated with the bottling facility are for washing 2 large interior tanks, spraying/cleaning the interior floor, washing equipment outside of the building, as well as a single sink and bathroom for employees.

From the bottling building, the 1 ½" line goes back underground and connects to a 4" mainline, which continues SE to a pressing facility/building. Inside the pressing facility, a 1 ½" line appears through the floor next to the wall. Water in this building is used for washing two apple pressing machines, washing holding tanks and cleaning the floor. A mobile booster pump on a dolly-like cart is used to help clean the tanks. The pressing facility is located far enough away from the well that the booster pump is needed in order to provide enough pressure to clean the tanks in the pressing building. The pump has a Marathon electric motor with 1 Hp and can be connected to a 1" hose.

From the pressing facility, water is again carried underground through the 4" line. On the eastern exterior of the pressing building, a 1 ½" pipe "T's" off the underground 4" line to provide water to a cooling tower. The same day as the field exam, Mr. Steele emailed me with 20 monthly reports of water usage in the tower (see Table 1, Water Tower Records). From the cooling tower, the 4" underground line continues southerly and then travels around the inner edge of the outdoor tanks. Various yard hydrants are located parallel to the outdoor tanks.

The final stage of making the apple cider vinegar involves fermentation in large outdoor holding tanks. The yard hydrants have 1" galvanized vertical pipes from the 4" mainline with 3/4" spigot outlets. A single hydrant is used at a time for cleaning

the tanks. Mr. Steele informed me that when the tanks are emptied, they are cleaned before they can be refilled again. A circular hatch from the bottom of the tanks can be removed for efficient and effective cleaning. Apples are brought to the facility by semi-trailer trucks and the trucks and trailers are cleaned with the hydrants once the apples are emptied.

It should be noted that the POU for this right lies within both Administrative Basins 63 and 65. The POD is within Basin 63 but the water right is numbered in Basin 65. Because the well is within Basin 63, the water right was renumbered to 63-35021. There are no overlapping rights with the POD. At the POU, Black Canyon Irrigation District owns rights 65-2900 and 63-2878 and The United States acting through the Bureau of Reclamation owns rights 65-2433 and 63-2322 for irrigation. All four rights have large POU's but do not directly overlap with the POU's for this right.

Conditions 1 and 2 were removed at licensing which is standard. Conditions 3 (26A), 4 (046), 5 (106) were removed since they were no longer pertinent to the license. Condition 6 was carried to the license. Condition 7 (259) was changed to condition 219 and the storage amounts were adjusted to match the use at licensing. Condition 8 (220) was also carried to the license and the amounts were updated to match the use at licensing. Condition 9 (R65) was carried to the license. Condition 10 (R70) was removed at licensing since the irrigation storage and irrigation from storage uses were not developed. Condition 11 (121) was changed to condition 103.

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	0.11 CFS	25.7 AF
INDUSTRIAL	01/01 to 12/31	0.27 CFS	27.4 AF
AESTHETIC STORAGE	01/01 to 12/31		2.4 AF
DIVERSION TO STORAGE	01/01 to 12/31	0.27 CFS	
DOMESTIC	01/01 TO 12/31	.04	0.1 af

Totals: 0.27 CFS 55.6 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

The additional P.U. is meant to reflect a domestic use of water not authorized by the permit.

The change in P.U. is necessary to reflect irrigation use that occurred in the NE ¼ SW ¼ instead of the NE ¼ SE ¼ of Twp. 07N, Rge. 05W, Sec. 13.

I. AUTHENTICATION Alex Dalglish - Water Resource Agent

Field Examiner's Name Alex Dalglish Date 3/11/2021

Reviewer _____ Date _____

Attachment to Field Exam 65-23597

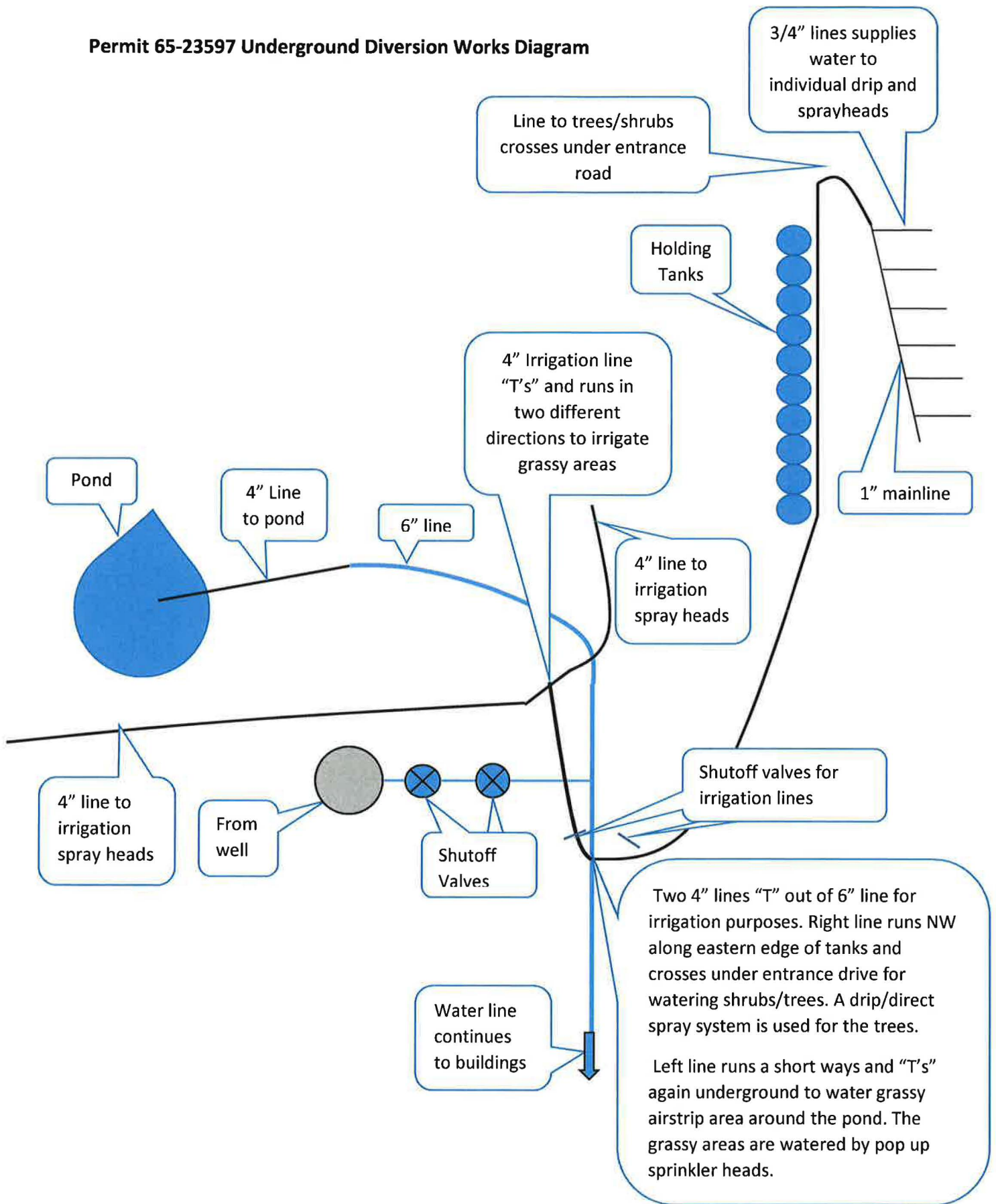
This map shows various diversion works and places of use where water is used.



created 10/5/2020 by
A. Dagleish



Permit 65-23597 Underground Diversion Works Diagram





Well head next to vertical culvert.



Diversion works in vertical culvert.



Well tag No D0070277



4" pipe from well as it exits hillside and leads to the pond.



4" line to pond.



1" line with pressure gage.



1" outlet nozzle used for cleaning bottling building and equipment.



Bottling facility



Pressure gage on 1 1/2" pipe inside of bottling building shows approx. 66 PSI.



Digital keypad unit at power panel. 65.7 PSI observed at site visit.



Inside of power panel showing pump info.

PHOTOGRAPHER AND DATE OF PHOTOS ALEX DALGLEISH 9/1/2020

FILE NUMBER 65-23597



Apples pressers on right and center of photo. Conveyor on left of photo.



2 large bottling tanks.



Portable 3 Hp pump used for cleaning outdoor tanks and equipment.



Holding tanks in pressing building. Portable pump to increase pressure for cleaning can be seen in bottom left.



Outdoor tanks with portable pump and hose reel.



Portable pump connected to red hose, attached to yard hydrant in background. Apple totes seen in background too.



Trees and shrubs irrigated near the entrance of the facility on the north side of parking area.



Up close of apple grinder/tote

PHOTOGRAPHER AND DATE OF PHOTOS ALEX DALGLEISH 9/1/2020

FILE NUMBER 65-23597

THEORETICAL HORSEPOWER EQUATION WORKSHEET (cjh 1/92)

Water Right No.: 65-23597
 Reviewer: Alex Dagleish
 Date of Review: 9/1/2020

P/D No.:

PUMP HORSEPOWER
 BOOSTER HORSEPOWER

PUMPING LEVEL

DISCHARGE PRESSURE

RATE OF FLOW (cfs)

Well #1
20
293
66
0.28
124

Well # 2

Well # 3
0.28
124.12

The above calculates the formula =

$$Q = \frac{8.8 * (\text{Efficiency}) * \text{hp}}{\text{depth to water} + 2.31 * (\text{psi}) + \text{friction}}$$

Assumptions: %70 efficiency.
 No Friction

Examiners Notes:

This system currently uses a single well with a submersible pump. A flow measurement was not possible on site so the Hp and discharge pressure were determined from the power panel that the well is connected to. A pressure of 65.7 PSI was shown on a Variable Frequency Drive (VFD) digital keypad unit. This pressure was rounded to 66 PSI for the theoretical calculation. The 293 feet of lift was determined from the well log. At the time of exam, the system was pumping an estimated 0.28 cfs or approximately 126 GPM. The theoretical calculation shows that the permitted rate of 0.27 cfs is possible with the pump and current system.

Water Tower Records

Date	Water Use (Gallons)	Max/Min
7/7/2017	45690	
8/3/2017	104260	
9/15/2017	115190	
10/11/2017	61520	
12/7/2017	127160	Maximum
1/18/2018	63250	
2/16/2018	45350	
3/15/2018	34790	
4/12/2018	55680	
5/15/2018	77200	
6/14/2018	86460	
7/13/2018	92540	
8/9/2018	109840	
10/10/2018	82420	
11/8/2018	65980	
4/22/2019	52920	
5/16/2019	62730	
6/13/2019	65700	
6/11/2020	9920	Minimum
7/17/2020	68700	
Total	1427300	

Maximum monthly useage of 127,160 gallons
multiplied by 12 months equals a total of: 1525920 gallons

Table 1. Showing the amout of water used in the cooling tower in gallons

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0070277

Drilling Permit No. 970743-876800
Water right or injection well # 65-23597

2. OWNER: Roger Fairchild

Name _____
Address 2667 SW 3 1/2 ave
City Fruitland State ID Zip 83619

3. WELL LOCATION:

Twp. 7 North ☒ or South ☐ Rge. 5 East ☐ or West ☒
Sec. 13 1/4 NW 1/4 SE 1/4

Gov't Lot _____ County Payette
Lat. N 43 56.556 (Deg. and Decimal minutes)
Long. W 116 52.950 (Deg. and Decimal minutes)
Address of Well Site same

City _____
Lot _____ Blk. _____ Sub. Name _____

4. USE:

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

5. TYPE OF WORK:

☒ New well ☐ Replacement well ☐ Modify existing well
☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☐ Air Rotary ☐ Mud Rotary ☒ Cable ☐ Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
# 5 bentonite	0	-60	3750 lbs	dry pour-hydrated

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
8	+2	364	.250	steel	☒	☐	☐	☒
					☐	☐	☐	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 364

9. PERFORATIONS/SCREENS:

Perforations ☐ Y ☒ N Method _____

Manufactured screen ☒ Y ☐ N Type V-wire

Method of installation pull back

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
364	372	.40		6	SS	600
372	380			6	steel	.250
380	395	.35		6	SS	600

Length of Headpipe 8 Length of Tailpipe 0

Packer ☒ Y ☐ N Type k-Paker

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? ☐ Y ☒ N Artesian Pressure (PSIG) _____

Describe control device Well cap

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 208 Static water level (ft) 205

Water temp. (°F) 63 Bottom hole temp. (°F) 63

Describe access port Well cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>15</u>	<u>50 +/-</u>	<u>360</u>

Test method:

Pump	Bailer	Air	Flowing artesian
☐	☐	☒	☐

Water quality test or comments: OK

13. LITHOLOGIC LOG and/or repairs or abandonment:

Sore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12	0	9	Silty clay brown		
	9	18	sandy clay brown		
	18	26	corse sands		
	26	48	squads c to f quartz		
8	48	60	clay brown		
	60	77	silty clays brown		
	77	113	silty clay, sand lenses, redish orange		
	113	195	silty, sandy clay brown		
	195	208	silty clay, yellow brown		
	208	212	layers sand and clay brown	x	
	212	218	sandy brown clay brown		
	218	262	sandy silts, redish orange		
	262		sandy silts f-c some cementing		
		355	redish orange		
	355	363	sand and silts brown and white		
	363	373	gravels 1/4, corse quartz sand	X	
			fine brown sands, h20 clear		
	373	380	fine sands brown		
	380	394	sands white corse, fine browns	X	
	394	395.5	clay sticky brown		

RECEIVED

DEC 21 2015

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 395.5

Date Started: 9-24-15

Date Completed: 12-12-15

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 Haines Water Well Drilling Co. No. 491

*Principal Driller Mervin S. Haines Date 12-12-15

*Driller Mervin S. Haines Date 12-12-15

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

Seepage Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total annual seepage losses from a pond.

FILE NUMBER	65-23597
REVIEWER	Alex Dalglish
DATE	9/2/2020

User Input
Calculated value
Formula Explanations

INPUTS

Pond Surface Area (AC.)	0.3	AC.
-------------------------	-----	-----

Pond Surface Area (SQ. FT.)	13068	SQ. FT.
-----------------------------	-------	---------

I used the following method to obtain my Soil Classification information:	NRCS Web Soil Survey	
My Soil Classification is	Lined	
Suggested Seepage Rate (FT./DAY)	0.0000	FT./DAY

Formula: (Surface Area X Seepage Rate) X 7.48 = Gallons Per Day Loss
--

Convert to GPD	0	GPD
----------------	---	-----

Total Seepage Loss (AFA)	0.0	AFA
--------------------------	-----	-----

Though sand and gravel seepage rates may actually be higher, the maximum allowable rate is 0.2 ft/day, pursuant to Administrative Memo "Seepage Loss Standards for Ponds and Reservoirs."

Suggested Seepage Rates for Different Soil Types:
GW, GP, GM, GC, SW, SP and SM (silty sand, sand silt mixtures and gravel mixtures) = 0.2 ft per day
OL and ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.02 ft per day
SC (clayey sands, sand clay mixtures) = 0.007 ft per day
CL (Low to medium plasticity clays) = 0.003 ft per day
MH, OH, PT and CH (high plasticity clays) = 0.0003 ft per day
LINED PONDS (liners can be chemical, fabric, or bentonite) = 0 ft per day
Ponds Intercepting Groundwater (excavated ponds filled by ground water) = 0 ft per day

PLEASE NOTE: The initial basis for the Suggested Seepage Rates in the table above is found on Page 16 of Seepage from Fish Ponds, Bulletin 599, August 1989 Alabama Agricultural experiment Station, Auburn University, Auburn University Alabama. If you don't know the soil type, please refer to the map provided at the NRCS Web Soil Survey (Tab #1), an ArcMap Soil Classification Map (Tab #1.1), or published NRCS Soil Survey (Tab #1.2). Use "0" if the pond fill relies on the water table.

Evaporation Loss Calculations

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the annual evaporation losses from a pond.

FILE NUMBER	65-23597
REVIEWER	Alex Dalglish
DATE	9/2/2020

User Input
Calculated value
Formula Explanations

The acronyms used on the Kimberly Research Center website are defined below:

P = Precipitation
ET= Evapotranspiration
P _d = Precipitation deficit
P _d =ET-P

USING THIS SPREADSHEET

Use the link below to access the Kimberly Research Center website. This website provides the Precipitation Deficit for a station most representative of the pond under examination. The Precipitation Deficit is the total amount of free water surface evaporation minus the precipitation for a given area, which gives the total amount of evaporative losses incurred by the pond. There are several weather sites that are used throughout the state. IDWR staff can find the nearest site using Arc Map. The shape file containing the sites can be found at X:/Spatial/Climate/ETIdahostations.shp.

Instructions:

1. Use the link below to navigate to ET Idaho 2012.
2. Select the station which is most representative to your pond location.
3. Click Submit Query.
4. Under "Land Covers with Evapotranspiration Estimates," select "Open Water - Shallow Systems (ponds, streams)" or "Open Water - small stock ponds" depending on the pond size.
5. Click the link to "Precipitation Deficit."
6. Reference and copy (ctrl + C) the first subheading "Mean" values.
7. Click the "Paste Values from ET Idaho" button. The table will automatically enter a zero (0) for any negative precipitation deficit values.

Found at: <http://data.kimberly.uidaho.edu/ETIdaho/>

Precipitation Deficit

Station: Twin Falls 2 NNE (NWS -- 109294)

Month	mm/day ¹	Days per month	mm/Month
Jan	-0.75	31	0.00
Feb	0.03	28	0.84
March	0.97	31	30.07
April	2.37	30	71.10
May	2.84	31	88.04
June	3.37	30	101.10
July	3.97	31	123.07
August	3.45	31	106.95
September	2.56	30	76.80
October	1.25	31	38.75
November	-0.36	30	0.00
December	-1.09	31	0.00

PLEASE NOTE: The seasonal average for precipitation deficit should not be used for calculations because precipitation often exceeds evaporation during wetter months of the year. If the pond is kept full, excess precipitation during wetter months does not serve to refill the pond during drier months.

For example, see Sandpoint KSPT (NWS -- 108137), the annual precipitation deficit is -106 mm. However, April through September have positive precipitation deficit values. To properly estimate the annual volume of water necessary to refill a pond due to evaporation losses, the table will automatically enter a zero (0) for each month that the precipitation value is reported as a negative value.

As described above, precipitation offsets evaporation in winter months, so the net effect is that wintertime precipitation deficit is usually zero.

Total mm/year = 636.72

$$((636.72) \div (304.8)) \times (0.30) = 0.6 \text{ AFA}$$

Total Storage Calculations

FILE NUMBER	65-23597
REVIEWER	Alex Dalglish
DATE	9/2/2020

This spreadsheet has been designed by Idaho Department of Water Resources to estimate the total seepage, evaporation and fill capacity required for a pond.

User input
Calculated value
Formula Explanations

Surface Area (AC.)	0.3	"Surface Area" is automatically carried over from the "Seepage Loss" sheet.
Average Pond Depth (FT.)	6	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated. Note: If you know the maximum depth and not the average depth, the Field Examiner's Handbook suggests multiplying the maximum depth by 0.4 to get the average depth, or you can use any method that seems reasonable to attain average depth.
Pond Capacity (AF)	1.8	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth. If you know the capacity, divide the capacity by surface area and enter the average pond depth in the space above. Note: If pond capacity is determined using a method shown on the "Pond Capacity" sheet, the user may need to modify the value of "Pond Capacity" (cell B9) manually. Note that if the value is modified manually, the formula will be altered for future use.

Multiple Fill Volume Above Initial Fill to Fulfill From Storage Needs: "Multiple Fills" (AF)	0	The "Multiple Fill Volume Above Initial Fill" is the acre-feet of water required to meet a <i>from storage</i> component if the <i>from storage</i> component exceeds a one time fill. This section should not include the amount of water needed to fill the pond initially or the amount of water needed to maintain the pond level due to evaporation or seepage. For example: if a pond has a capacity of 5 acre feet and 2.5 acre feet of seepage and evaporation, but the pond is used for irrigation that requires 10 acre feet of from storage for the irrigation use, then you would insert 5 acre feet into this location (10 acre feet needed - 5 acre feet from the initial fill = 5 acre feet of additional storage needed). Note: You must have a "From Storage" component exceeding the initial fill on the permit to include a volume in this space.
Estimated Seepage Loss (AF)	0.0	The "Estimated Seepage Loss" is automatically carried over from the "Seepage Loss" sheet.
Estimated Evaporation Loss (AF)	0.6	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	2.4	The "Total Volume Required" is calculated by adding the Pond Capacity, Multiple Fills, Seepage Loss, and Evaporation Loss amounts to determine the total amount of storage required.

Flow Rate into Pond (CFS)	0.27	The "Flow Rate into Pond" depicts the actual flow, either measured or estimated, into the pond. For offstream facilities, this will be equivalent to "diversion to storage" rate.
Highest Daily Evaporation Rate From Evaporation Tab. (mm/Day)	3.97	This number is carried over from the "Evaporation Loss" sheet. It is the highest recorded number in the "Precipitation Deficit Table".
Required Daily Maintenance Volume (AF/Day)	0.00	"Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year to maintain pond volume. It is calculated by adding the highest daily evaporation loss to the average daily seepage loss in acre feet. The average daily seepage loss is calculated by dividing the "Estimated Seepage Loss" by 365 days. This is acceptable, since the seepage rate shouldn't vary throughout the season unless the pond completely freezes over during the winter months. The highest daily evaporation loss is calculated by dividing the Highest Daily Evaporation Rate by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet requirement.
Minimum Maintenance Flow (CFS)	0.00	The "Minimum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determined by dividing the "Maximum Required Daily Maintenance Volume" by 1.9835. This flow can be used to determine if the flow rate into the pond is adequate to maintain the pond level.
Days Required to Fill the Pond	3	The "Days Required to Fill the Pond" is calculated by dividing the "Pond Capacity" by the "Flow Rate" minus "Minimum Maintenance Flow" multiplied by 1.9835. This section will assist you in determining if the flow rate being diverted to the pond is adequate to fill the pond while maintaining the pond level. The length of time to fill the pond will help determine if the flow rate is adequate for the size of pond being proposed. If this number is approximately 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond.
Days Required to Fill the Pond at 13,000 Gallons per Day	50	Some water users may want to fill a pond under the 13,000 gallons per day domestic exemption. The "Days Required to Fill the Pond at 13,000 Gallons per Day" is calculated by converting the "Pond Capacity" and the "Required Daily Maintenance Volume" to gallons. The "Pond Capacity" is then divided by 13,000 gallons minus the "Required Daily Maintenance Volume" in gallons to determine the number of days to fill pond. If this number is approximately 6 months (180 days) or more, the reviewer should have a discussion with the applicant to make sure he/she understands that it will take a significant length of time to fill the pond. Negative values indicate that the supply of 13,000 gallons per day is not enough volume to overcome the required daily maintenance volume; the pond will never fill.



0003945905

**STATE OF IDAHO***Office of the secretary of state, Lawrence Denney***ANNUAL REPORT**

Idaho Secretary of State
PO Box 83720
Boise, ID 83720-0080
(208) 334-2301
Filing Fee: \$0.00

*For Office Use Only***-FILED-**

File #: 0003945905

Date Filed: 7/23/2020 10:43:36 AM

B0526-3733 07/23/2020 10:43 AM Received by ID Secretary of State Lawrence Denney

Entity Name and Mailing Address:

Entity Name: JOHN GALT ENTERPRISES, INC.
The file number of this entity on the records of the Idaho Secretary of State is: 0000370090
Address: 2667 SW 3 1/2 AVE
FRUITLAND, ID 83619-3701

Entity Details:

Entity Status: Active-Good Standing
This entity is organized under the laws of: IDAHO
If applicable, the old file number of this entity on the records of the Idaho Secretary of State was: C120553

The registered agent on record is:

Registered Agent: ROGER FAIRCHILD
Registered Agent
Physical Address
2667 SW 3 1/2 AVE
FRUITLAND, ID 83619
Mailing Address

Corporate Officers and Directors:

Name	Title	Business Address
 Roger L. Fairchild	President	2667 SW 3 1/2 AVENUE FRUITLAND, ID 83619 Apo (Us)

The annual report must be signed by an authorized signer of the entity.

Charles H Wood

Sign Here

07/23/2020

Date

Job Title: Bookkeeper