State of Idaho
Department of Water Resources

Water Right License

Water Right No. 63-33996

Priority: October 08, 2014

Maximum Diversion Rate: 0.09 CFS
Maximum Diversion Volume: 15.3 AF

It is hereby certified that:

MICHAEL E WOOD 1417 N KCID RD CALDWELL ID 83605 AND/OR
JENNIFER K WOOD 1417 N KCID RD CALDWELL ID 83605

has complied with the terms and conditions of the permit, issued pursuant to Application for Permit dated October 08, 2014, and has submitted Proof of Beneficial Use on February 27, 2020. An examination confirms water is diverted from:

Source : UNNAMED DRAIN **Tributary:** MASON SLOUGH

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
IRRIGATION	03/01 to 11/15	0.09 CFS	13.5 AF
AESTHETIC STORAGE	01/01 to 12/31		1.8 AF

Location of Point(s) of Diversion

UNNAMED DRAIN NE¼ SE¼, Sec. 13, Twp 04N, Rge 03W, B.M. CANYON County
UNNAMED DRAIN NE¼ SE¼, Sec. 13, Twp 04N, Rge 03W, B.M. CANYON County

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	
04N	03W	13													3.0				3.0

Total Acres: 3.0

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	
04N	03W	13													X				

Conditions of Approval

1. This right when combined with all other rights shall provide no more than 0.03 cfs per acre nor more than 4.5 afa per acre at the field headgate for irrigation of the place of use.
2. The pond established by the storage of water under this right shall not exceed a total capacity of 1.0 acre-feet or a total surface area of 0.3 acres.
3. Right 63-33996 authorizes the diversion of 1.8 acre-feet for 1 on-stream pond, comprised of 1.0 acre-feet to be used for the carryover storage of the pond, 0.8 acre-feet for the replacement of losses due to evaporation.
4. A lockable device subject to the approval of the Department shall be maintained on the diverting works in a manner that will provide the watermaster suitable control of the diversion.

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JUL 28 2023

State of Idaho
Department of Water Resources

Water Right License

Water Right No. 63-33996

5. Use of water under this right may be regulated by a watermaster with responsibility for the distribution of water among appropriators within a water district. At the time of this approval, this water right is within State Water District No. 63.
6. When notified by the Department, the right holder shall provide a means acceptable to the Department to measure the amount of water entering the pond and the amount of water released from the pond.
7. When notified by the Department, the right holder shall install and maintain a measuring device of a type acceptable to the Department as part of the irrigation diverting works.
8. When ordered by the Director, the right holder shall provide mitigation acceptable to the Director to offset depletion of lower Snake River flows needed for migrating anadromous fish. The amount of water required for mitigation, which is to be released into the Snake River or a tributary for this purpose, will be determined by the Director based upon the reduction in flow caused by the use of water pursuant to this right. Any order of the Director issued in accordance with this paragraph shall be in conformance with applicable rules allowing the right holder due process as the need for mitigation and the amount of mitigation are determined.

This license is issued pursuant to the provisions of Idaho Code § 42-219. The water right confirmed by this license is subject to all prior water rights and shall be used in accordance with Idaho law and applicable rules of the Department of Water Resources.

Signed this 12th day of July, 2023.

SCOTT STORMS
Water Rights Supervisor

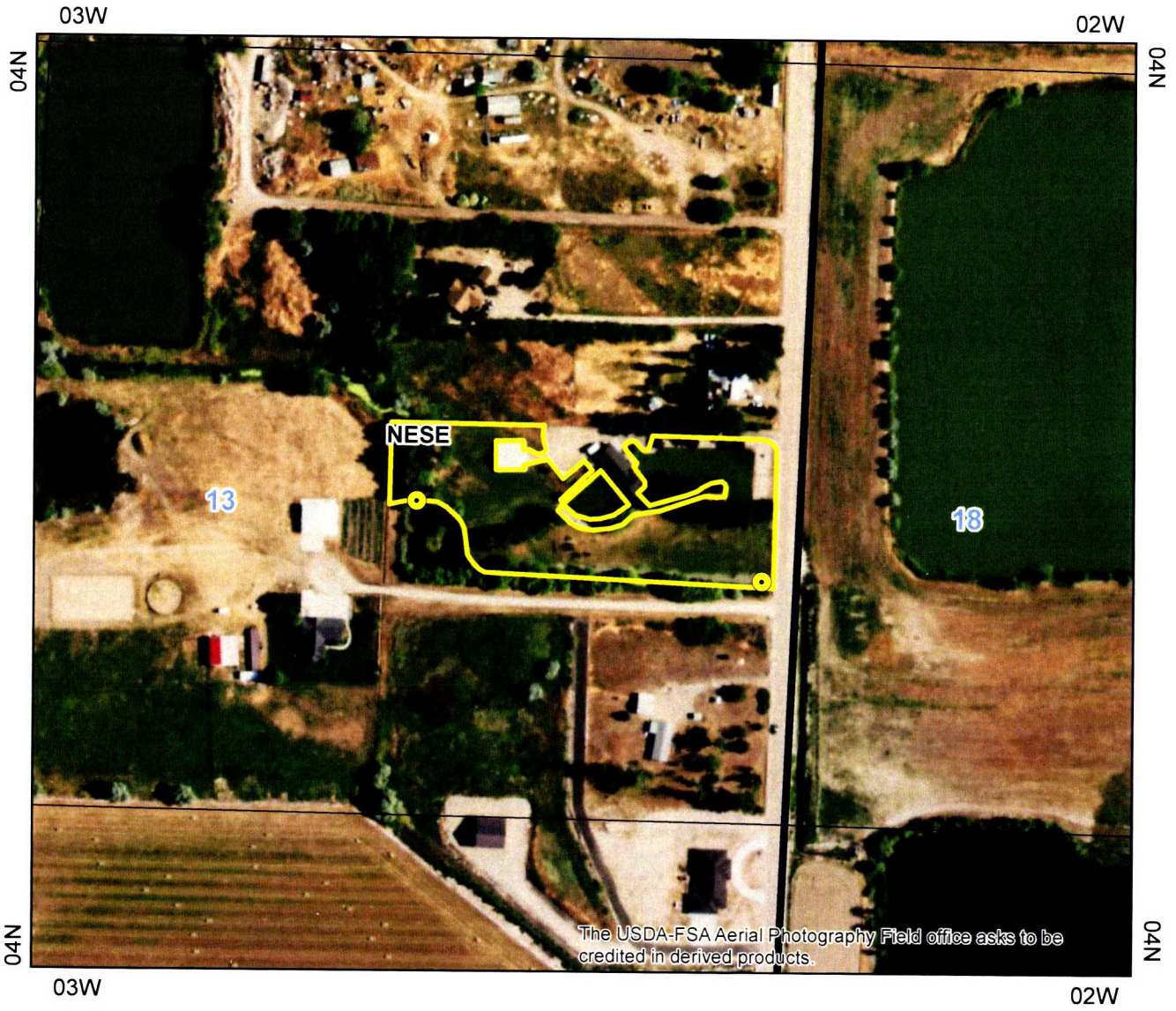
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State of Idaho
Department of Water Resources

Attachment to Water Right License

63-33996

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



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

0 0.035 0.07 0.14 Miles

N

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JUL 28 2023

State of Idaho
Department of Water Resources

Attachment to Water Right License

63-33996

This map depicts the AESTHETIC STORAGE place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



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

0 0.035 0.07 0.14 Miles

N

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JUL 28 2023

IDAHO DEPARTMENT OF
WATER RESOURCES

Western Region • 2735 W Airport Way • Boise, ID 83705-5082
Phone: 208-334-2190 • Fax: 208-334-2348 • Email: westerninfo@idwr.idaho.gov • Web: idwr.idaho.gov

Governor Brad Little **Director Gary Spackman**

July 14, 2023

JENNIFER K WOOD AND MICHAEL E WOOD
1417 N KCID RD
CALDWELL ID 83605-1840

RE: License No. 63-33996

ISSUANCE OF LICENSE

Dear Water Right Holder(s):

The Department of Water Resources ("Department") has issued the enclosed Water Right License confirming that a water right has been established in accordance with your permit. Please be sure to thoroughly review all the conditions of approval listed on your license. The conditions may include ongoing requirements, such as maintenance of a measuring device or implementation of mitigation, as well as information about how your water use may be administered, such as regulation by a watermaster in a water district.

The license is a PRELIMINARY ORDER issued by the Department pursuant to Rule 730 of the Department's Rules of Procedure (IDAPA 37.01.01.730). It can and will become a final order without further action by the Department unless a party petitions for reconsideration, files exceptions, or requests a hearing as described in the enclosed information sheet.

Also, please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Water right forms are available from any office of the Department or on the Department's website at idwr.idaho.gov

If you have any questions concerning the enclosed information, please contact me at (208) 605-4624.

Sincerely,

Lynne Evans
for Scott Storms
Water Rights Supervisor

Enclosure(s)

SCANNED
JUL 28 2023

CERTIFICATE OF SERVICE

I hereby certify that on July 14, 2023, I served a true and correct copy of Water Right License No. 63-33996 by U.S. Mail, postage prepaid, to the following:

MICHAEL E WOOD (Current Owner)
1417 N KCID RD
CALDWELL ID 83605-1840

JENNIFER K WOOD (Current Owner)
1417 N KCID RD
CALDWELL ID 83605-1840

LORI GRAVES
HDR INC (Representative)
412 E PARKCENTER BLVD STE 100
BOISE ID 83706-6659

MIKE MEYERS (Watermaster)
WATER DISTRICT #63
PO BOX 767
STAR ID 83669-4500

Lynne Evans
Administrative Assistant I

SCANNED
JUL 28 2023

EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was **not** held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "**Preliminary Order**" issued by the department pursuant to section 67-5243, Idaho Code. **It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:**

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. **Note: the petition must be received by the department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

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JUL 28 2023

CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

> Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:
>
> (a) The petition for reconsideration is disposed of; or
> (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

i. A hearing was held,
ii. The final agency action was taken,
iii. The party seeking review of the order resides, or
iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

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JUL 28 2023

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 63-33996
Exam Date: 08/06/2020

1. Current Owner:
   MICHAEL E WOOD 1417 N KCID RD CALDWELL ID 83605 AND/OR
   JENNIFER K WOOD 1417 N KCID RD CALDWELL ID 83605

2. Accompanied by: Michael Wood
   Phone No: (208) 859-5848
   Address: 1417 N Kcid Rd, Caldwell, ID 83605
   Relationship to permit Holder: same

3. **SOURCE:** UNNAMED DRAIN **Tributary** MASON SLOUGH

Method of Determination: Permit application, IDWR records, and field examination

B. OVERLAP REVIEW

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

Water Right No.	Source	Purpose of Use	Basis
63-179C	Boise River	Irrigation	Decreed
63-33392	Fifteen Mile Creek	Irrigation	Decreed
63-32580	Mason Creek	Irrigation	Decreed

Comments: Mason Creek Ditch Company service area overlaps but does not deliver to the property

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

Water Right No.	Source	Purpose of Use	Basis

Comments: No water right overlap

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
UNNAMED DRAIN NE¼ SE¼, Sec. 13, Twp 04N, Rge 03W, B.M. CANYON County
UNNAMED DRAIN NE¼ SE¼, Sec. 13, Twp 04N, Rge 03W, B.M. CANYON County

Method of Determination: Aerial Imagery, ArcMap Tools, and observation during field exam.

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	
04N	03W	13													3.0				3.0

Total Acres: 3.0

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	
04N	03W	13													X				

Method of Determination: Aerial Imagery, ArcMap Tools, and observation during field exam.

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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

4.

Well or Diversion ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
63-33996 Drain	**Flotec C48L2EC1181**	**1.5**		**Flotec FP5172-08**	**1.25"**
63-33996 Pond	**Honda GX 160**	**4.8**		**Gorman Rupp IPT 2P5XHR**	**2"**

D. FLOW MEASUREMENTS

1.

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

2. Measurements:

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

Measured Method: Sprinkler Nozzle Calculation

K-Rain K2 popup sprinklers equipped with red 2.5 gpm nozzles were divided into 9 zones with 4 sprinklers and operated one zone at a time.

(4 sprinklers x 2.5 gpm = 10 gpm or 0.02 cfs).

The portable Sprinkler Cart system calculations are based on the table below.

1250K Sprinkler Cart Performance Chart			
Nozzle Size	**PSI**	**GPM**	**Jet Length feet**
10 mm (0.354")	22	20	56
	29	23	59
	44	28	67
	58	33	72

The Big Sprinkler had a nozzle size of 10mm and a jet length of approximately 70 feet. Therefore, I based my calculations on the assumption of 58 psi and 33 gpm with a 72 foot jet length.

Given a 5.5 hp Flotec FP5172-08 pump running at 33 gpm X 0.002228 = 0.07 cfs.

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation:

$V_{I.R}$ = (Acres Irrigated) x (Irrigation Requirement) = (3 acres) x (4.5 af) = 13.5 af

$V_{D.R}$ = [Diversion Rate (cfs)] x (Days in Irrigation season) x 1.9835 = (0.09 cfs) x (260 days) x 1.9835 = 46.4 af

V = Smaller of $V_{I.R}$ and $V_{D.R}$ = 13.5 af

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2. Volume Calculations for Other Uses:

Using the Pond Loss Calculation Spreadsheet (attached) and ArcMap the following theoretical calculation was determined:

Surface area (GIS): 0.3 acres
Maximum pond depth: 8 feet
Average pond depth (estimation): (8 x 0.4) = 3.2 feet
Pond Capacity (Spreadsheet): 1.0 af
Evaporative Losses: 0.8 af
Total Volume: 1.8 af

G. NARRATIVE/REMARKS/COMMENTS

Michael and Jennifer Wood are the owners of water permit 63-33996 for irrigation and aesthetic storage use near Caldwell, ID in Canyon County. The proof of beneficial use was submitted on February 27, 2020 with an examination fee of $50.00. An exam was conducted on August 6, 2020 by water resource agent Allen Bradbury. Mason Creek Ditch Company service area overlaps the place of use, however, according to the original application backfile, the company does not assess the property. Permit holder and property owner, Michael Wood, accompanied the agent on the field exam. Current Canyon County tax parcel data lists Michael E. and Jennifer K. Wood as the current owners of the property pertinent to the place of use (POU) and points of diversion (POD). No ownership change is required.

The system consists of a 1.5 hp Flotec pump and motor located in a pump house with an intake from unnamed drain ditch which enters the southeast corner of the property. This pump supplies and underground sprinkler system for areas in the northeast section of the property and other areas around the residence. The underground system is composed of K-Rain K2 popups with red 2.5 gpm nozzles. There are 9 zones with 4 sprinklers per zone. The unnamed drain ditch flows into an on-stream pond in the southwestern corner of the property. The remaining area is irrigated by a portable 4.8 hp Honda GX 160 motor with a 5.5 hp IPT 2P5XHR pump. A 2-inch hose attaches to a screened intake that is submerged near the outlet of the pond at a depth of about 2 feet. This system feeds a Big Sprinkler 1250K with a 10mm nozzle. The incoming flow from the unnamed drain varies greatly throughout the irrigation season, tapering throughout the summer into fall. The pond is aerated and stocked with bluegill and bass.

The POU was determined using aerial photography and ArcGIS measurement tools. The proposed place of use was 3.0 acres. The permit authorized an acre limit of 3.0 acres within a total of 4.2 acres. Based on the acreage measured with ArcGis and observation during the field exam the acreage remains at 3.0 acres after subtracting building footprints, roadways, and the pond. Therefore, I am recommending a 3.0 acre place of use. Since the POU does not rotate acres and the irrigation system is fixed, I am removing the PPU description.

The original application and permit proposed a diversion rate of 0.09 cfs. The system was not running during the field examination, therefore flow rates are based upon the manufactures specifications for the irrigation system components. The northeast and south side of the property was divided into 9 zones with 4 sprinklers in each zone. Mr. Woods normally operated one zone at a time. Each zone was compose of K-Rain K2 popup sprinklers equipped with red 2.5 gpm nozzles, therefore 4 sprinklers/zone x 2.5 gpm/head = 10 gpm or 0.02 cfs.

The west side of the property was irrigated with a Big Sprinkler. The nozzle size was measured with a drill bit at 10mm (3/8"). The sprinkler jet length of approximately 70 feet was measured by pacing off the distance. Therefore, I based my calculations on the assumption of 58 psi and 33 gpm with a 72 foot jet length (from manufacturers table). Given a 5.5 hp Flotec FP5172-08 pump running at 33 gpm X 0.002228 = 0.07 cfs. Adding the diversion rate of both systems yield a rate of 0.02 + 0.07 = 0.09 cfs. Therefore, I am recommending a license rate of 0.09 cfs for the irrigation use.

According to Mr. Wood the pond has a maximum depth of about 8 feet. The surface area of the pond, as measured with ArcGIS measurement tools, is approximately 0.3 acres, with a calculated capacity of (0.3 ac x (8 ft x 0.4)) =1.0 ac-ft. Using data obtained from ETI Idaho for shallow ponds in the Caldwell area annual evaporation is expected to be 0.8 acft. IDWR's pond loss calculation sheet calculates a total volume for aesthetic storage of 1.8 acft including evaporative loss. The pond appears to gain some water from ground water. Observation during the field exam revealed the slow velocity of water into the pond at the headgate (as evidenced by movement of duckweed). However, the outflow velocity of water was much faster as seen in figures 9 and 10 of attached photos. Therefore, there is no volume added for seepage. However, the original permit is only for aesthetic storage and does not have an irrigation storage component and is also a condition on the permit.

Flow from the unnamed drain varies greatly throughout the irrigation season. The pond is used for aesthetic storage but not irrigation storage. As observed at the field exam, water for the Big Sprinkler is pumped from the pond, however as observed during the field exam water continued to flow from the pond while the Big Sprinkler was running, photo 10. Therefore, the pump is not pumping stored water but accessing the natural flow from the unnamed drain plus groundwater gains into the pond. Wells in this area are generally less than 100 feet deep with static water levels of 0 to 6 feet. Therefore, the water right could be authorized to divert direct flows when available in the ditch. I am recommending a license volume of 1.8 acft for aesthetic storage use.

Conditions 26A were removed as per department licensing standards. Condition 01H remains and is in compliance since both irrigation systems are capable of being locked. Conditions 220 and 259 are modified.

SCANNED

JUL 28 2023

Have conditions of permit approval been met? _X_ Yes ____ No

H. RECOMMENDATIONS

1. Recommended Amounts

Beneficial Use	Period of Use	Rate of Diversion	Annual Volume
IRRIGATION	03/01 to 11/15	0.09 CFS	13.5 AF
AESTHETIC STORAGE	01/01 to 12/31		1.8 AF
	Totals:	0.09 CFS	15.3 AF

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

Allen Bradbury - Water Resource Agent, Senior

Field Examiner's Name Allen Bradbury Date 7/10/23

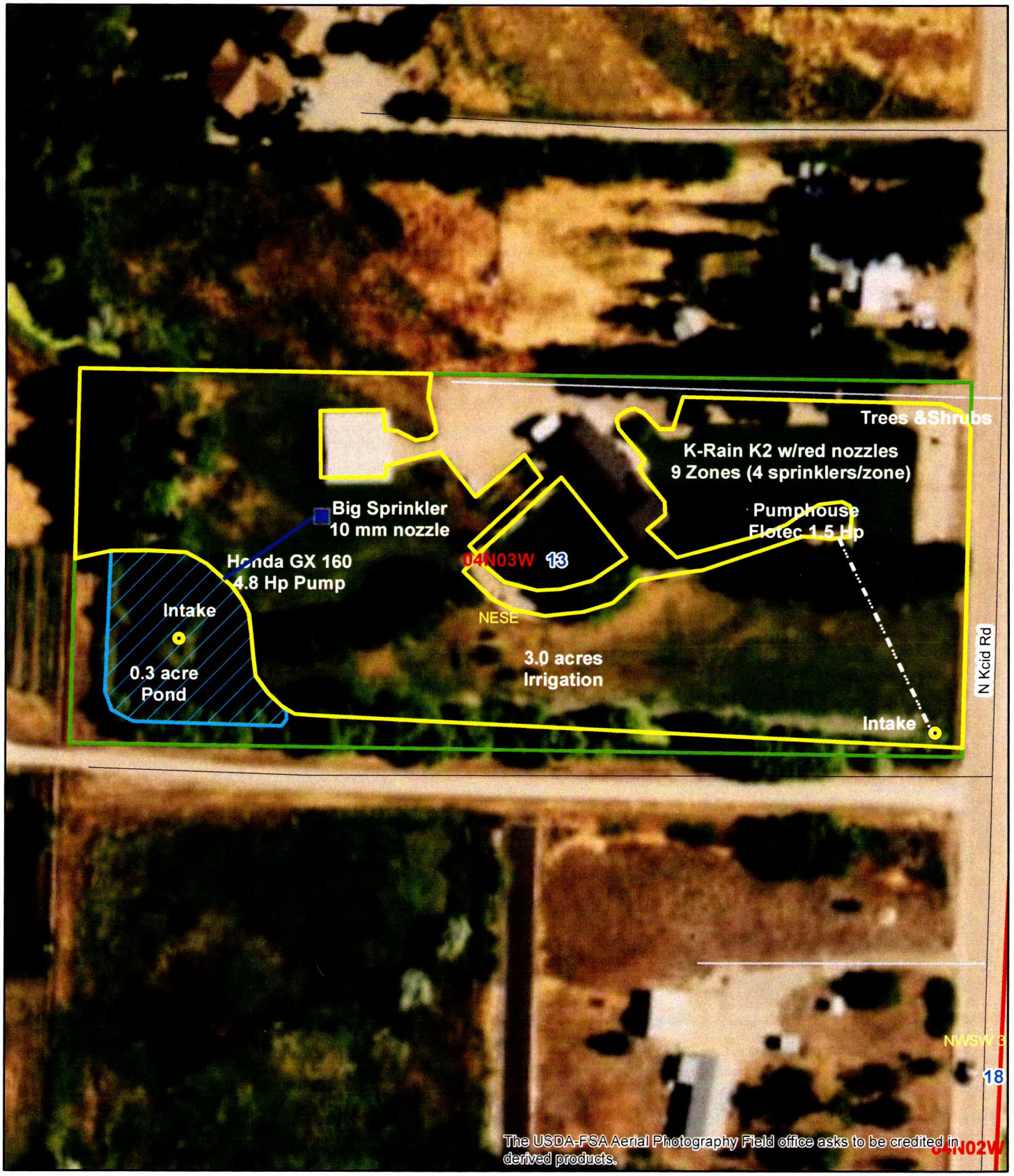
Reviewer _____ Date 7/12/23

SCANNED

JUL 28 2023

63-33996 WOOD

Beneficial Use Field Report System Diagram. Aesthetic Storage and Irrigation



Point of Diversion

AESTHETIC STORAGE

Place of Use

IRRIGATION

0 0.015 0.03 Miles

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JUL 28 2023

Total Storage Calculations

FILE NUMBER	63-33996
REVIEWER	AB
DATE	2/23/2021

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.)	3.35	"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)	1.0	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 *from storage* component if the *from storage* 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)	0.8	The "Estimated Evaporation Loss" is automatically carried over from the "Evaporation Loss" sheet.
Total Volume Required (AF)	1.8	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.

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JUL 2 8 2023

Flow Rate into Pond (CFS)	**0.40**	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)	**4.81**	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)	**0.002**	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	**1**	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	**29**	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.

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JUL 28 2023

K2 Gear Drive Sprinkler

The K-Rain K2 Smart Set Professional Pop-Up Gear Drive Rotor Sprinkler Head helps you water medium to large areas and shrubs. Pre-installed with a 2.5 GPM single-steam nozzle. The sprinkler features a dial-in spray pattern that can be adjusted from 40 to 360°.

- Waters medium to large areas and shrubs
- Easy dial-in spray pattern can be adjusted from 40 to 360°
- Tamper resistant clutch with auto reset maintains spray pattern
- 5 in. pop-up height for spraying over turf
- Pre-installed with a 2.5 GPM single-stream nozzle
- Can be set while sprinklers are off or while running
- Radius can be adjusted with the breakup screw
- Reversing mechanism for years of reliable operation
- 3/4 in. female inlet



RED STD NOZZLE RACK PRO PLUS

- Item No. P51399
- Replacement Nozzle Rack for ProPlus and SuperPro Gear Driven Rotors.

SCANNED
JUL 2 8 2023

Specifications

Color Family	Blacks
Features	Adjustable,Rotating
Head Material	Plastic
Inlet Type	Female
Irrigation System Component	Sprinkler
Material	Plastic
Maximum Coverage Area (sq ft.)	9503
Maximum Gallons Per Minute	3.5
Maximum Rotation (Degrees)	360
Maximum Spray Distance (ft.)	55
Minimum Spray Distance (ft.)	20
Mounting	In-Ground Install
Nozzle Material	Plastic
Package Quantity	1
Pressure Rating	30 psi
Returnable	180-Day
Riser	Riser Not Required
Sprinkler Angle Maximum (Degrees)	25
Sprinkler Angle Minimum (Degrees)	5
Sprinkler Head Material	Plastic
Sprinkler Head Spray Pattern	Adjustable
Sprinkler Head Type	Gear Drive
Sprinkler Location	Below ground
Sprinkler Type	Pop-Up,Rotary
Thread Type	Female

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Flotec 5172

PERFORMANCE

MODEL/UPC	HP	GPM	DISTANCE OF PUMP ABOVE WATER	DISCHARGE PRESSURE (PSI)								
				10	15	20	25	30	35	40	45	50
FP5182 022315100725	2	69	5'	69	64	59	53	47	40	34	24	14
			10'	67	62	56	50	45	38	30	18	7
			15'	65	60	54	48	42	35	27	13	-
			20'	62	57	52	46	40	32	23	10	-
FP5172 022315100718	1-1/2	67	5'	67	66	61	55	48	39	33	18	-
			10'	61	58	56	52	45	37	27	14	-
			15'	56	55	54	51	44	34	20	8	-
			20'	46	45	44	43	37	28	11	-	-
FP5162 022315100701	1	55	5'	55	51	45	38	31	23	17	-	-
			10'	49	46	42	35	28	19	13	-	-
			15'	48	45	39	32	24	16	8	-	-
			20'	45	44	37	29	20	11	-	-	-

* Performance shown in gallons per minute

IPT 2P5XHR

1250K Sprinkler Cart Performance Chart

Nozzle Size	PSI	GPM	Jet Length/Feet (One Direction)	Wetted Circle (Diameter/Feet)
7 mm (0.28")	22	10	46	92
	29	11	50	100
	44	14	56	112
	58	16	61	122
8 mm (0.315")	22	13	51	102
	29	15	56	112
	44	18	62	124
	58	21	67	134
9 mm (0.354")	22	16	54	108
	29	19	57	114
	44	23	64	128
	58	26	69	138
10 mm (0.394")	22	20	56	112
	29	23	59	118
	44	28	67	134
	58	33	72	144
12 mm (0.472")	22	29	56	112
	29	34	62	124
	44	41	68	136
	58	47	77	154

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04N03W13 63-33996 Overlap Analysis

Process	Basin Sequence	Owner	Source	POD POU	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	63-33996	SPF WATER ENGINEERING LLC; WOOD, JENNIFER K; WOOD, MICHAEL E	UNNAMED DRAIN	POU	AESTHETIC STORAGE													X				
Water Permit	63-33996	SPF WATER ENGINEERING LLC; WOOD, JENNIFER K; WOOD, MICHAEL E	UNNAMED DRAIN	POU	IRRIGATION													4.2				4.2
Water Right	63-5239	FRANKLIN DITCH CO	BACK SLOUGH	POU	IRRIGATION		X	X		X	X	X	X	X	X		X		X	X		
Water Right	63-166B	FRANKLIN DITCH CO; RINGERT CLARK CHTD	BOISE RIVER	POU	IRRIGATION		X	X		X	X	X	X	X	X		X		X	X		
Water Right	63-167B	FRANKLIN DITCH CO; RINGERT CLARK CHTD	BOISE RIVER	POU	IRRIGATION		X	X		X	X	X	X	X	X		X		X	X		
Water Right	63-179C	BARKER, ALBERT P; MASON CREEK DITCH CO	BOISE RIVER	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-33392	BARKER, ALBERT P; MASON CREEK DITCH CO	FIFTEEN MILE CREEK	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-32580	MASON CREEK DITCH CO	MASON CREEK	POU	IRRIGATION	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Right	63-5271	BARKER, ALBERT P; BICANDI, DOROTHY; BICANDI, RICHARD	MASON CREEK	POU	IRRIGATION											37.5						37.5
Water Applicatic	63-34652	IDAHO WATER ENGINEERING, CAT CREEK ENERGY LLC, RACINE OLSON PLLP (At	BOISE RIVER	POU	IRRIGATION FROM STORAGE											0.1	0.2			0.2		0.5
Water Permit	63-32228	CITY OF CALDWELL; HYDRO LOGIC INC	GROUND WATER	POU	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Permit	63-32367	CITY OF CALDWELL; HYDRO LOGIC INC	GROUND WATER	POU	MUNICIPAL	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Water Permit	63-32388	CITY OF MIDDLETON	GROUND WATER	POU	MUNICIPAL	X			X									X			X	
Water Right	63-29055	RICHARDSON, WILLIAM L	SPRING	POU	STOCKWATER									X								
Water Right	63-21633	HANNY, FRED; HANNY, JOHN L; HANNY, MARGARET	GROUND WATER	POU	STOCKWATER																X	
Water Right	63-25775	MC EVOY, DOROTHE; MC EVOY, JOHN	GROUND WATER	POU	STOCKWATER													X				
Water Right	63-25998	PAYNE, OLYVE M; WOOD, JENNIFER K; WOOD, MICHAEL E	GROUND WATER	POU	STOCKWATER													X				
Water Right	63-28359	JENSEN, TERRENCE W	GROUND WATER	POU	STOCKWATER	X																
Water Right	63-29051	RICHARDSON, WILLIAM L	GROUND WATER	POU	STOCKWATER												X					
Water Right	63-29052	RICHARDSON, WILLIAM L	GROUND WATER	POU	STOCKWATER							X										
Water Right	63-29057	RICHARDSON, WILLIAM L	GROUND WATER	POU	STOCKWATER										X							
Water Right	63-20116	HUTER, DIANN MARIE; HUTER, JEFF M	GROUND WATER	POU	DOMESTIC	X																
Water Right	63-21633	HANNY, FRED; HANNY, JOHN L; HANNY, MARGARET	GROUND WATER	POU	DOMESTIC																X	
Water Right	63-25775	MC EVOY, DOROTHE; MC EVOY, JOHN	GROUND WATER	POU	DOMESTIC													X				
Water Right	63-25998	PAYNE, OLYVE M; WOOD, JENNIFER K; WOOD, MICHAEL E	GROUND WATER	POU	DOMESTIC													X				
Water Right	63-28359	JENSEN, TERRENCE W	GROUND WATER	POU	DOMESTIC	X																
Water Right	63-29057	RICHARDSON, WILLIAM L	GROUND WATER	POU	DOMESTIC										X							
Water Right	63-30158	RICHARDSON, WILLIAM L	GROUND WATER	POU	DOMESTIC									X								

Process	Basin Sequence	Owner	Source	POD POU	Use	NENE	NWNE	SWNE	SENE	NENW	NWNW	SWNW	SENW	NESW	NWSW	SWSW	SESW	NESE	NWSE	SWSE	SESE	Total Acres
Water Permit	63-33996	SPF WATER ENGINEERING LLC; WOOD, JENNIFER K; WOOD, MICHAEL E	UNNAMED DRAIN	POD														X				
Water Right	63-29055	RICHARDSON, WILLIAM L	SPRING	POD										X								
Water Right	63-25998	PAYNE, OLYVE M; WOOD, JENNIFER K; WOOD, MICHAEL E	GROUND WATER	POD														X				
Water Right	63-20116	HUTER, DIANN MARIE; HUTER, JEFF M	GROUND WATER	POD		X																
Water Right	63-21633	HANNY, FRED; HANNY, JOHN L; HANNY, MARGARET	GROUND WATER	POD																	X	
Water Right	63-25775	MC EVOY, DOROTHE; MC EVOY, JOHN	GROUND WATER	POD														X				
Water Right	63-28359	JENSEN, TERRENCE W	GROUND WATER	POD		X																
Water Right	63-29051	RICHARDSON, WILLIAM L	GROUND WATER	POD													X					
Water Right	63-29052	RICHARDSON, WILLIAM L	GROUND WATER	POD								X										
Water Right	63-29057	RICHARDSON, WILLIAM L	GROUND WATER	POD											X							
Water Right	63-30158	RICHARDSON, WILLIAM L	GROUND WATER	POD										X								

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Wildlife/Recreation Pond Calculations

WR #: 63-33996 Wood

Max. Depth: 8 feet

Soil Type: MuA—Moulton fine sandy loam, saline, 0 to 1 % slopes Group B

Volume Calculation					
Seepage					
Area (acres)	**Rate (ft/day)**	**Start Date**	**End Date**	**Days**	**Volume (AF)**
0.3	0.007	1-Jan	31-Dec	365	0.8
Total					**0.8** **AFA**

Evaporation						
Station:	Caldwell (NWS -- USC00101380)					
Month	**mm/day[1]**	**Start Date**	**End Date**	**Days**	**mm/Month**	**Volume (AF)**
Jan	-0.84	1-Jan	31-Jan	31	*0.00*	0.00
Feb	0.12	1-Feb	29-Feb	28	*3.36*	0.00
Mar	1.17	1-Mar	31-Mar	31	*36.27*	0.04
Apr	2.54	1-Apr	30-Apr	30	*76.20*	0.08
May	3.69	1-May	31-May	31	*114.39*	0.11
Jun	4.21	1-Jun	30-Jun	30	*126.30*	0.12
Jul	4.81	1-Jul	31-Jul	31	*149.11*	0.15
Aug	4.05	1-Aug	31-Aug	31	*125.55*	0.12
Sep	2.86	1-Sep	30-Sep	30	*85.80*	0.08
Oct	1.73	1-Oct	31-Oct	31	*53.63*	0.05
Nov	-0.08	1-Nov	30-Nov	30	*0.00*	0.00
Dec	-0.75	1-Dec	31-Dec	31	*0.00*	0.00
				365		
			Total mm/year =		770.61	**0.8** **AFA**

Seepage plus evaporation losses:	1.5 **AFA**

Evaporation loss is calculated by dividing the Evaporation Rate (mm/day) by the 304.8 conversion factor and multiplying this number by the pond surface area to attain a combined daily acre feet.

[(mm/yr) ÷ (convert to feet)] X (Surface area of pond, in acres) = Evaporation Loss in Acre Feet

(*770.61* ÷ *304.8*) X 0.30 = 0.8 **AFA**

Storage Volume		
Area (Acres)	**Average Depth (ft)**	**Volume (AF)**
0.3	3.2	**1.0**
	Total Volume	**2.5**

Soil Type: https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Evaporation: http://data.kimberly.uidaho.edu/ETIdaho/

MEMO 76 Seepage Loss Standards for Ponds and Reservoirs

0.2 SM (silty sand, sand silt mixtures) = 0.2 ft per day

0.007 SC (clayey sands, sand clay mixtures) = 0.007 ft per day

0.02 ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.02 ft per day

0.003 CL (low to medium plasticity clays)= 0.003 ft per day

0.0003 CH (high plasticity clays)= 0.0003 ft per day.

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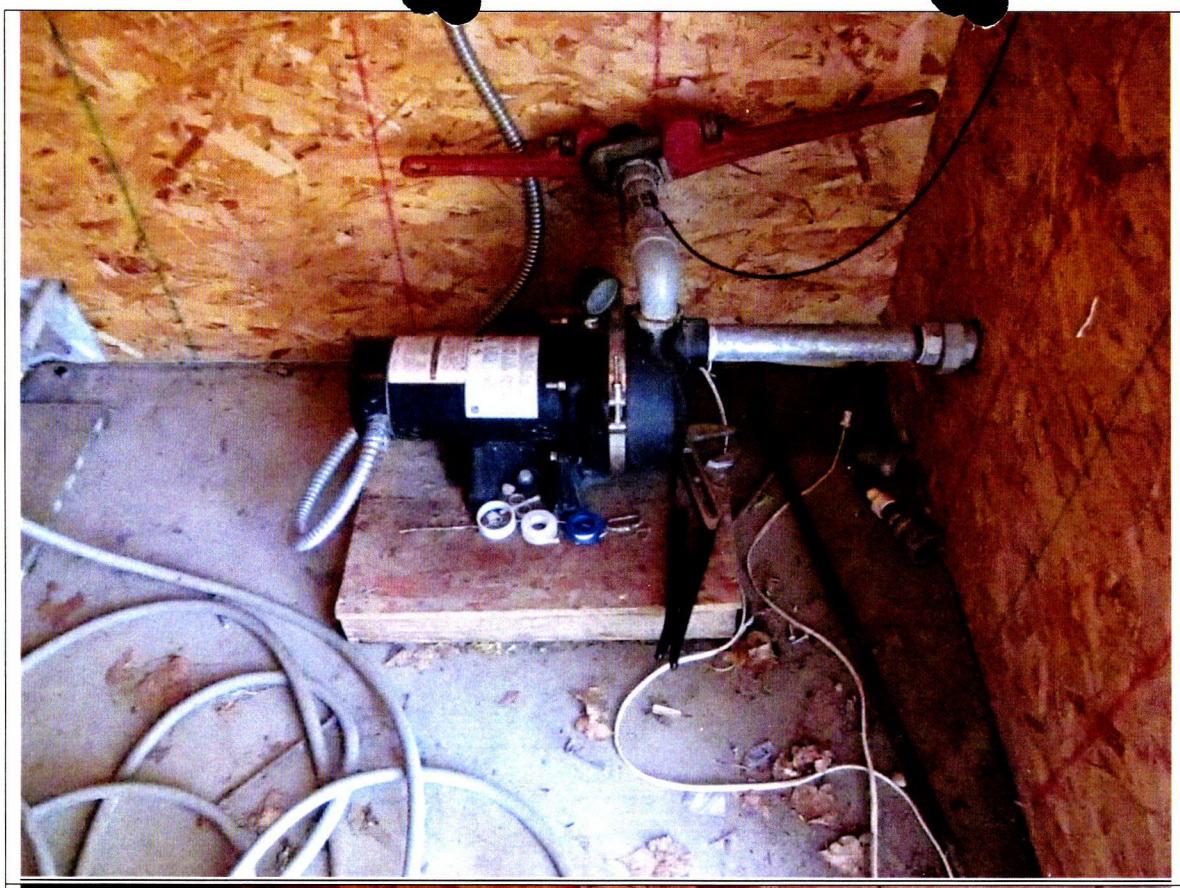


Figure 1. Flotec 1.5 Hp pump, 2450 rpm with 1.25" line from drain ditch.

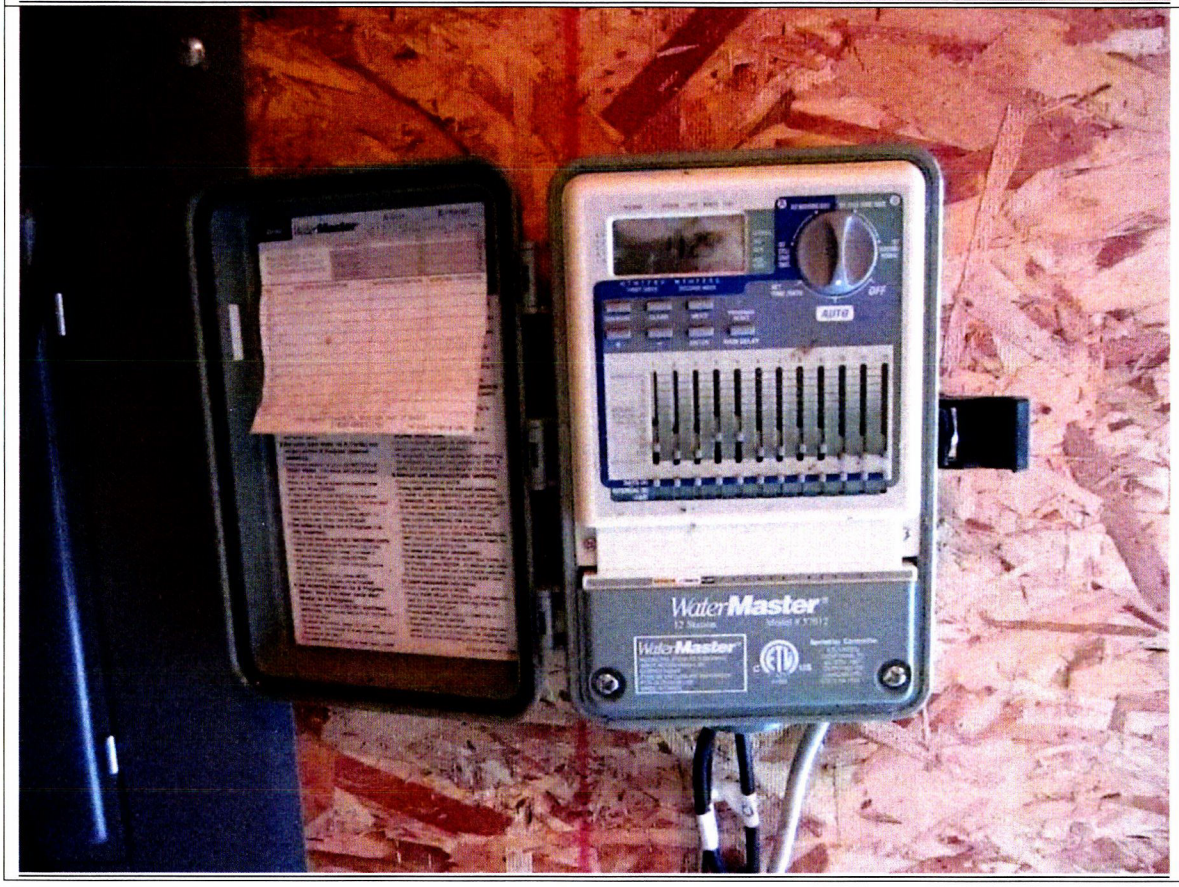


Figure 2. Zone control in pump house.

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Figure 3. K-Rain K2 popup sprinklers with red nozzles.



Figure 4. Intake for pumphouse from drain ditch.

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Figure 5. Drain ditch entering property from southeast corner.



Figure 6. Irrigated area in south half of parcel.

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Figure 7. View of 0.2 acre pond with 0.03 acre island.



Figure 8. Shoreline of pond, looking towards trash pump and pond outlet.

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Figure 9. Small rectangular weir at in pond inlet.

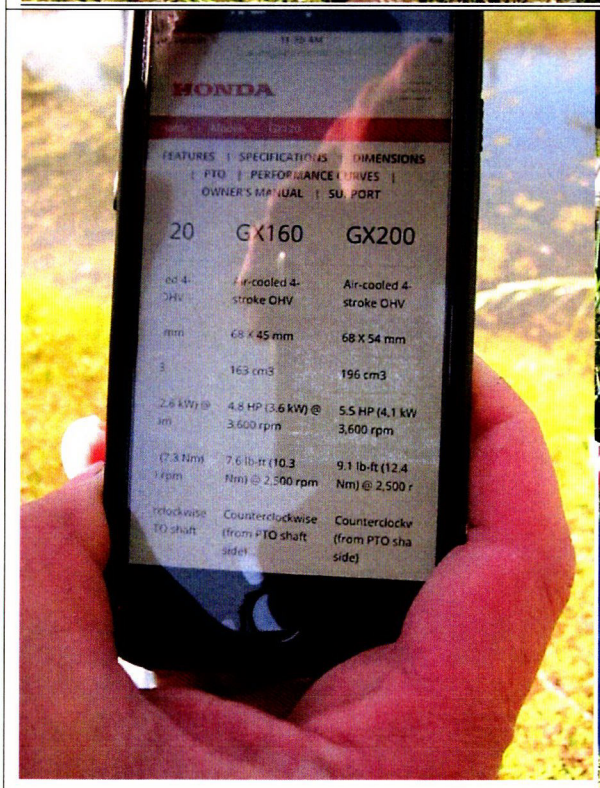


Figure 10. Concrete block outlet works at pond outflow.

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Figure 11. Honda GX 160 trash pump, 4.8 Hp with 2" intake and outflow.





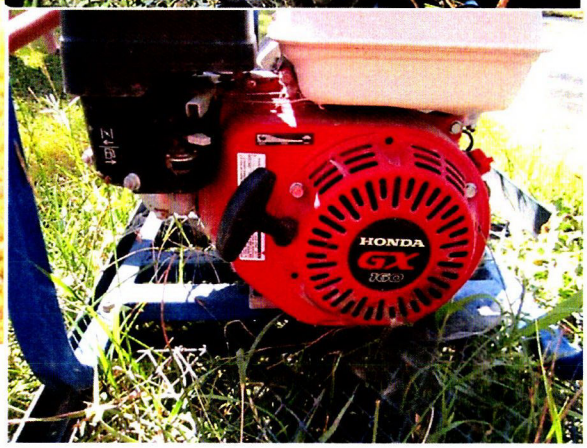


Figure 12. Pump, motor and specifications.

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Figure 13. Big Sprinkler 1250k with 3/8" (10mm) nozzle with average throw of 65 feet.



Figure 14. Lawn area irrigated by Big Sprinkler.

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