

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 74-7243

Exam Date: 9/11/2012

1. Current Owner: JOSEPH L TONSMEIRE
PO BOX 871
SALMON ID 83467

2. Accompanied by: na

Phone No:

Address:

Relationship to Permit Holder:

3. **SOURCE**

DRY GULCH CREEK

TRIBUTARY

HAYDEN CREEK

B. OVERLAP REVIEW

1. Other water rights with the same place of use: None
2. Other water rights with the same point of diversion: none

C. DIVERSION AND DELIVERY SYSTEM**1. LOCATION OF POINT(S) OF DIVERSION:**

DRY GULCH CREEK NW1/4NW1/4 Sec. 13, Twp 17N, Rge 23E, B.M.

LEMHI County

Method of Determination: Location of the dam

2.

PLACE OF USE:**STOCKWATER STORAGE**

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
17N	23E	13						X											

Method of Determination:

3. ☒ 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

4. NA

Well or Diversion
ID No.*

Motor Make**Hp****Motor Serial No.****Pump Make**

Pump Serial No. or Discharge
Size

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

D. FLOW MEASUREMENTS see 1995 field report

1. NA

Measurement

Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
AA Meter	#090127					

2. Measurements: none taken

The permit authorizes 2.0 cfs

E. FLOW CALCULATIONS X Additional Computation Sheets Attached

Measured Method: Field examiner Don Simpkins measured 0.50 cfs at two points of diversion on September 19, 1995. The two ditches measured by Mr. Simpkins are no longer used. Only the stock water bubbler is used.

Manning's equation showed a rate of 0.06 cfs flowing from the pond to the guzzler. (see attachment)

Based upon a conversation with Frances Tonsmeire, they graze 125 cows on the land around the pond and the guzzler. According to application processing memo #3, *Annual Use of Water for Stock Water Purposes*, 125 head of range cattle warrants a rate of 0.05 cfs and a volume of 2.7 af/a for Stockwater use.

Recommend 0.05 cfs**F. VOLUME CALCULATIONS**

1. Volume Calculations for Irrigation: NA

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) =$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 =$$

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

2. Volume Calculations for Other Uses:

The permit must be amended to reflect the change in use from irrigation from storage to Stockwater from storage (and the accompanying storage beneficial use from irrigation to Stockwater). The result is significantly less water under the water right. As this is surface water there is no volume on the permit. The headgate requirement for this area is 3.5 af.; the consumptive use is 2.5 af.

If the permit had been developed for irrigation the consumptive use would have been:

$$103 \text{ acres} \times 2.5 \text{ (CU)} = 257.5 \text{ af}$$

The Dam Summary Inventory Sheet from March 8, 2006, gives the storage capacity of the reservoir are 8 AF (see attachment).

Seepage loss: 7.3 af

Evaporation loss: 1.7 af

Total volume required: 17.0 af

$$8 \text{ pond capacity} + 7.3 + 1.7 = 17 \text{ af}$$

Recommended volume for storage: 17 AF

Stockwater storage can be diverted from the pond to the bubbler. The maximum Stockwater volume is 2.7 af according to administrative memo #3. Therefore Stockwater and Stockwater storage are limited to 2.7 af. The 2.7 af for Stockwater is additive to the recreation storage, so the total volume is limited to 19.7 af (17 af recreation + 2.7 af Stockwater)

Recommend total annual volume: 19.7 AF**G. NARRATIVE/REMARKS/COMMENTS**Have conditions of permit approval been met? Yes N No

An on stream pond in the NWNW corner of Section 13 in T17N R23E provides stock water at both the pond location and a guzzler in the SWSW corner of Section 12. Water from Dry Gulch Creek flows northwest into the approximately 8 acre feet pond. Water flows from the pond, by pipe, approximately 500 feet from the dam to the guzzler. Overflow water runs from guzzler to the land just to the north west. Water from the pond flows down Dry Gulch Creek and into Hayden Creek.

The Department issued a permit to Joseph Tonsmeire on March 22, 1989. Under permit 74-7243 an on stream pond in Dry Gulch, T17N R23E Section 13 NWNW, collects water. The beneficial uses on the permit include irrigation, irrigation storage and irrigation from storage. According to the attached dam summary inventory sheet the 19 foot earth dam, completed in 1988, has a storage capacity of 8 acre feet. this matches the capacity of the pond found by the initial field examination and ArcMap.

In 1995 Don Simpkins conducted a field exam and found beneficial uses stock water and recreational storage. Please see field report dated 12/19/1996. Don measured 0.5 cfs at two separate points of diversion. When I visited the pond in mid September there was little water flowing into the pond. In Don's report he mentions the poor conditions of the ditches. During my visit I found remnants of channels that might have once been ditches. However, they were full of weeds and otherwise poorly maintained.

Aside from finding no irrigation during my visit in September, I found no evidence of irrigation on several years of Landsat and NAIP imagery.

The application for permit was protested. The protest resulted in a condition on the permit that required a measuring device. The Tonsmeires evidently never developed irrigation at the permitted place of use. Water master Rick Sager does not see a need for a measuring device as there is not enough water in a normal year to warrant one. According to Rick the water is used for stock water storage (see attached email dated November 1, 2013).

Recreation is included on this permit based upon the 1996 field exam. Don Simpkins found life jackets at the pond location.

This permit requires an amendment based on the change in beneficial use. In addition, based upon the recommendation of the watermaster, and the change in nature of use, the measuring device requirement should be removed. According to the Amended Permit processing Memo #3 IDWR should consult with the water master prior to issuing a measuring device in a water district.

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>	<u>ANNUAL VOLUME</u>
STOCKWATER	01/01 to 12/31	0.05 CFS	2.7 AF
STOCKWATER FROM STORAGE	01/01 to 12/31		2.7 AF
RECREATION STORAGE	01/01 to 12/31		17.0 AF
STOCKWATER STORAGE	01/01 to 12/31		2.7 AF

Totals: 0.050 CFS 19.70 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 Other

*Beneficial use Change from
Irrigation to Stockwater*

I. AUTHENTICATION

Field Examiner's Name Sandra Tril Date 8/2/2016

Reviewer _____ Date _____

State of Idaho
Department of Water Resources
Water Right License Amendment
74-7243

This map depicts the RECREATION, STOCKWATER, STOCKWATER FROM STORAGE, RECREATION STORAGE, and STOCKWATER STORAGE place of use boundary for this water right amendment and is attached to the document solely for illustrative purposes.

23E



- Point of Diversion
- Place Of Use Boundary



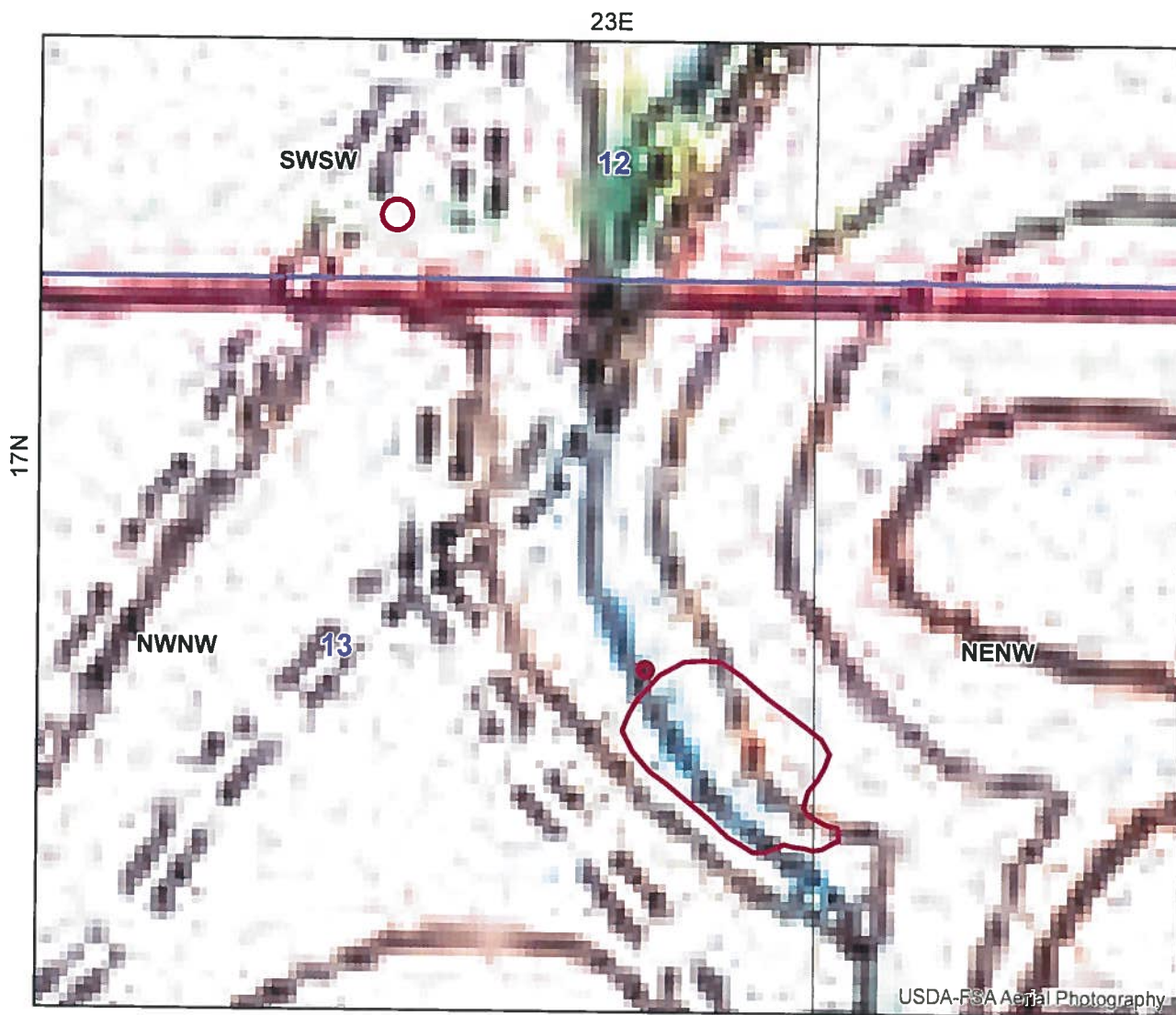
0 250 500 Feet

State of Idaho
Department of Water Resources

Water Right License Amendment

74-7243

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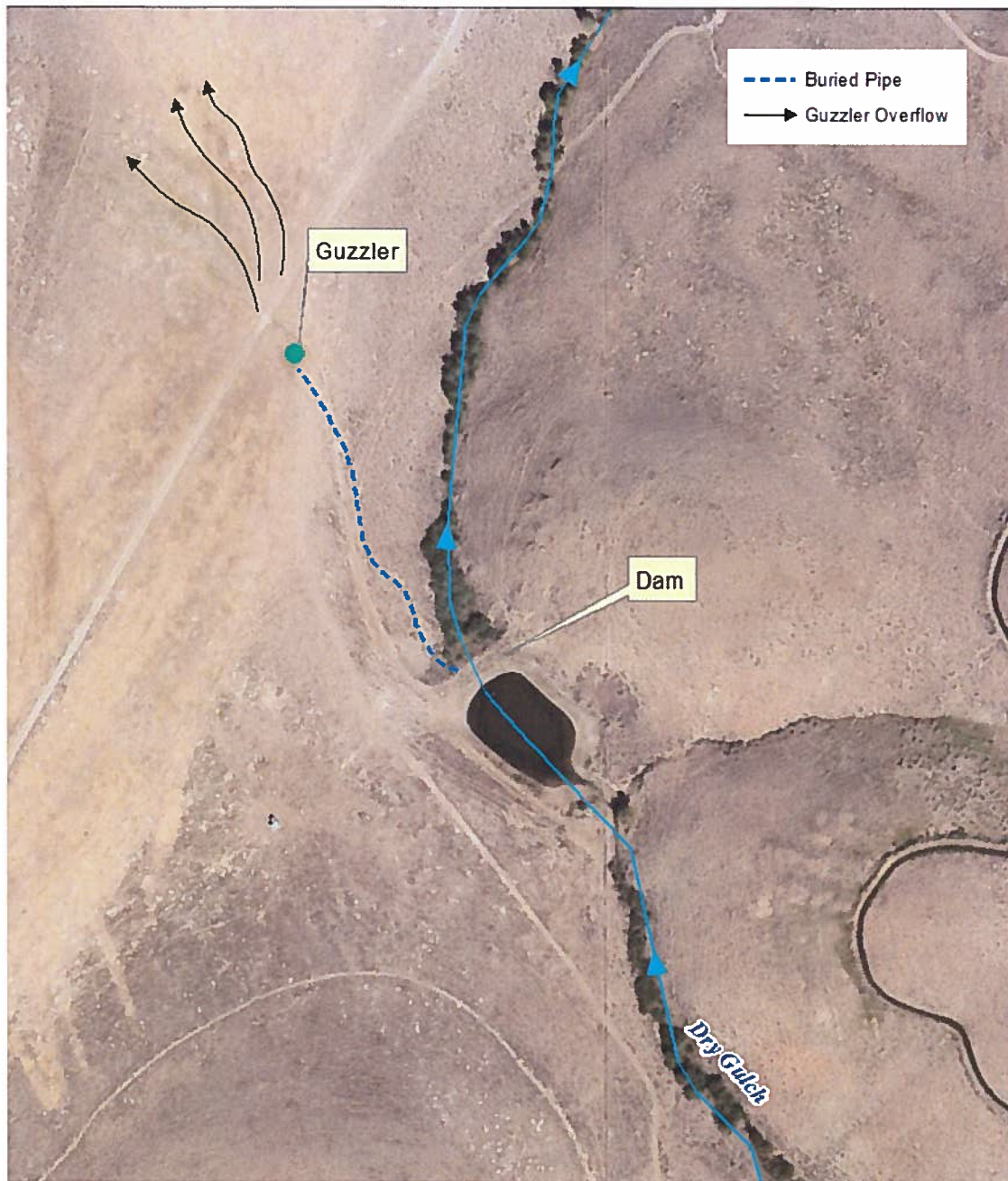


- Point of Diversion
- ▭ Place Of Use Boundary
- ▭ Townships
- ▭ PLS Sections
- ▭ Quarter Quarters



0 250 500 Feet

System for Water Right 74-7243



An on stream pond in the NWNW corner of Section 13 in T17N R23E provides stock water at both the pond location and a guzzler in the SWSW corner of Section 12. Water from Dry Gulch Creek flows northwest into the approximately 8 acre feet pond. Water flows by pipe from the pond, approximately 500 feet from the dam, to the guzzler. Overflow water runs from the guzzler to the land just to the north west. Water from the pond continues to flow down Dry Gulch Creek and into Hayden Creek.

SEEPAGE CALCULATIONS

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

FILE NUMBER	74-7243
REVIEWER	Sandra Thiel
DATE	6/8/2016

INPUTS

SQ FT. Calculator Pond Surface area in acres
1

POND SURFACE AREA (SQFT)	43560
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SUGGESTED SEEPAGE RATE (FT/DAY)	0.0200
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Use the table below to find the "SUGGESTED SEEPAGE RATES".

FORMULA: (Surface Area X Seepage Rate) / 7.48 = Gallons Per Day loss	Soil: GC
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CONVERT TO GPD	6517	GPD
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TOTAL SEEPAGE LOSS (AFA)	7.3	AFA
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SUGGESTED SEEPAGE RATES FOR DIFFERENT SOIL TYPES:
SM (silty sand, sand silt mixtures) = 0.20 ft per day
ML (inorganic silts - very fine sands, silty, or clayey fine sands) = 0.016 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
CH (high plasticity clays) = 0.0003 ft per day
LINED PONDS (liners can be chemical, fabric, or bentonite) = 0 ft per day

Evaporation Loss Calculation

FILE NUMBER	74-7243
REVIEWER	S. Thiel
DATE	6/8/2016

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

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

P = Precipitation
 ET= Evapotranspiration
 P_d = Precipitation deficit
 P_d =ET-P

ABOUT THIS SPREADSHEET

To ascertain the evaporation from a pond, you will need to go to the Kimberley Research Center website. The link is found below . This web site provides the Precipitation Deficit for the area where the pond is located. The Precipitation Deficit is the total amount of free pan 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, and the entire state is pretty much covered. You can find the nearest site using ArcMap. The shape file containing the sites can be found at X:\Spatial\Climate\ETIdahostations.shp .

Found at: <http://www.kimberly.uidaho.edu/ETIdaho/online.php>

Precipitation Deficit

Station: Salmon (NWS -- 108076)

Month	mm/day ¹	Days per month	mm/Month
Jan	0.00	31	0.00
Feb	0.08	28	2.24
March	1.01	31	31.31
April	1.87	30	56.10
May	2.03	31	62.93
June	2.77	30	83.10
July	3.50	31	108.50
August	3.20	31	99.20
September	1.69	30	50.70
October	0.78	31	24.18
November	0.00	30	0.00
December	0.00	31	0.00

PLEASE NOTE: We cannot use the season average, because there are several areas in Northern Idaho with a negative Precipitation Deficit. Therefore, we must enter each monthly deficit, and enter in a zero (0) for each negative month. The reason for this is that precipitation can only offset evaporation to the extent of the evaporation.

Please enter the daily average Precipitation Deficit as shown in the example below.

¹Negative monthly mean values should be entered in the above table as "0".

Total mm/year = 518.26

P_d= Convert to (mm/yr) ÷ (convert Surface area of pond, in acres.

518.26 304.8 1
 (conversion factor)
 P_d = 1.7 AFA

TOTAL STORAGE

FILE NUMBER	74-7243
REVIEWER	Sandra Thiel
DATE	6/8/2016

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

Surface Area (in Acres)	1	"Surface Area" depicts the actual surface area of the pond measured, determined by ArcMap, or estimated.
Average Pond Depth (in feet)	8	"Average Pond Depth" depicts the actual depth of the pond either measured or estimated.
Pond Capacity (in acre feet)	8	Pond Capacity is calculated by multiplying the Pond Surface Area by the Average Pond Depth.

Volume Needed Above Initial Fill to Fufill From Storage Needs- "Multiple Fills" (in acre feet)	0	The "Volume Needed 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). PLEASE NOTE: You must have a "From Storage" componet exceeding the intial fill on the permit to include a volume in this space.
Estimated Seepage Loss (in acre feet)	7.3	The "Estimated Seepage Loss" is automatically is automatically carried over from the Seepage Loss Sheet
Estimated Evaporation Loss (in acre feet)	1.7	The "Estimated Evaporation Loss" is automatically is automatically carried over from the Evaporation Loss Sheet
Total Volume Required (in acre feet)	17.0	"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 (in cfs)	0.05	The "Flow Rate" Into the Pond depicts the actual flow either measured or estimated into the pond.
Highest Daily Evaporation Rate From Evaporation Tab. (in mm/day)	2.73	To determine the "Highest Daily Evaporation Rate" go the the Evaporation Loss Sheet and enter in the highest number recorded in the Precipitation Deficit table.
Maximum Required Daily Maintenance Volume (in acre feet per day)	0.03	"Maximum Required Daily Maintenance Volume" is the maximum volume of water needed on any given day during the year, and is caluated 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 multiplying 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 (in cfs)	0.01	The "Mininum Maintenance Flow" is the minimum amount of flow required to maintain the level of the pond. This number is determine by dividing the "Daily Required 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	114	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.

DAM SUMMARY INVENTORY SHEET

TONSMEIRE

74 - 7243

Printed: Mar 08, 2006

Updated: Mar 08, 2006

STATUS D
BASIN 74
DAM_NUMBER 7243
FEDERAL ID NUMBER
DAM NAME TONSMEIRE
COUNTY LEMHI
STREAM TR-HAYDEN CREEK
REGION E
PURPOSE I
RISK CATEGORY 3
SIZE CATEGORY 3
Q Q SECTION NWNW
SECTION 13
TOWNSHIP 17N
RANGE 23E
LATITUDE DEC 44.8102
LONGITUDE DEC -113.6759
DAM TYPE EARTH
STORAGE CAPACITY 8 AcFT
HEIGHT 19 Ft
DRAINAGE AREA 1.3 SqMi
RESERVOIR AREA 1 Ac
YEAR COMPLETED 1988
CREST ELEVATION 5920 Msl
CREST LENGTH 150 Ft
SPILLWAY TYPE ERCHAN
SPILLWAY DEPTH 4 Ft
SPILLWAY CAPACITY 23 Cfs
SPILLWAY CONDITION
SPILLWAY GATE COND
OUTLET TYPE STEEL
OUTLET SIZE 12 In
OUTLET CAPACITY 12 Cfs

OUTLET CONDITION
OUTLET GATE CONDITION
LAST OUTLET EXAM
OUTLET INSP INTERVAL
IDF Q50
IDF MAGNITUDE 52 Cfs
RELEASE CAPACITY 35 Cfs
OVERALL COND FR
MAINTENANCE
INSPECTION DATE 8/3/2005 Mo/Yr
CERT ISSUE DATE Mo/dd/yr
STORAGE AUTH DATE Mo/dd/yr
STORAGE EXP DATE Mo/dd/yr
SURVEY DATE Mo/dd/yr
CALL UP DATE Mo/dd/yr
INSP INTERVAL 5 Yr
PHASE 1 INSP DATE
OPERATION PLAN N
STATIC STABILITY
SEISMIC STABILITY N
RESTRICTED
BOND NA
JOINT INSPECTION
QUAD NUMBER S79
QUAD NAME HAYDEN CREEK
DAM OWNER JOSEPH AND FRANCES TONSMEIRE
ADDRESS-1
ADDRESS-2 P O BOX 72
CITY LEMHI
STATE ID
ZIP CODE 83465
ZIP SUFFIX 0072
PHONE 7563959
AREA COD 208

GEN_REMARK DRAINAGE AREA = 830 AC. RESERVOIR AREA = 0.75 AC.

TEC_REMARK SPILLWAY & RELEASE CAP ARE WITH 2.0' FB. DAM ALSO HAS 12" DROP INLET SPILLWAY INTO OUTLET PIPE. CREST OF DROP INLET IS SLIGHTLY HIGHER THAN ERCHAN.

RESTRICT

ALT_CONT

BOND_SUM

Calculator - Read Me

Step 1 - Calculate No. of Days

Is It a Leap Year?

☐ YES

☒ NO

Enter Starting Date:

March



15



March - 15

Enter Ending Date:

November



15



November - 15

Total Number of Days (Starting and Ending Dates Inclusive)

246

Step 2 - Input Flow Rate Value

Select Units

Cubic Feet per Second



Input Flow Rate

0.05

CFS

Step 3 - Select Units of Output Volume

Select Units

Ac-Ft



Output Volume

24.4 Ac-Ft

Manning's Equation Calculator for Flow Rate in a Circular Conduit Flowing Full

S = 0.0978 ft/ft
n = 0.009 manning's coefficient
d = 1.5 pipe diameter (inches)
D = 0.13 pipe diameter (feet)
r = 0.06 pipe radius (feet)
A = 0.01 area (ft²)
WP = 0.39 wetted perimeter (ft)
R = 0.03 hydraulic radius (ft)

Q = 0.06 flow rate (CFS)

Channel Slope

Slope Options

☐ Manual Entry ☒ Slope Calculator

Slope Calculator

Rise = 58 feet

Run = 593 feet

Slope, S = 0.0978 ft/ft

Pipe Material, (n):

plastic (pvc, abs)

Pipe Diameter (inches)

I3:DJ28,2) inches

MEMORANDUM

TO: Water Right Files 74-7243
FROM: Sandra Thiel
DATE: May 26, 2015
SUBJECT: Change in beneficial use and measuring device condition

The Department issued a permit to Joseph Tonsmeire on March 22, 1989. Under 74-7243, the water in Dry gulch would collect in a pond located in T17N R23E Section 13 NWNW. The beneficial uses included Irrigation, irrigation storage and irrigation from storage. According to the attached dam summary inventory sheet the 19 foot earth dam, completed in 1988, has a storage capacity of 8 acre feet.

In 1996 Don Simpkins conducted a field exam and found that there did not appear to be any beneficial use of water except stock water and recreational storage. Please see field report dated 12/19/1996. Don measured 0.5 cfs at two separate points of diversion. When I visited the pond in mid September there was little water flowing into the pond. In Don's report he mentions the poor conditions of the ditches. During my visit I found remnants of channels that might have once been ditches. However, they were full of weeds and otherwise poorly maintained.

The point of diversion given on the permit is approximately a $\frac{3}{4}$ mile upstream from the pond. A ditch and headgate were supposed to provide water to Dry Gulch Creek. However both Don and I found the ditches almost unusable. The license point of diversion will be the dam.

Aside from finding no irrigation during my visit in September, I found no evidence of irrigation on several years of Landsat and NAIP imagery. The permit included a condition that required a measuring device and lockable controlling works. At the time the permit was issued there was no water master for basin 74. A water district was formed in May of 1987. The current water master, Rick Sager, did not find a need for a measuring device or headgate for the water right. According to Rick there is not enough water in Dry Gulch during a normal year to warrant them. The beneficial uses on the permit included irrigation, irrigation storage and irrigation from storage. Based on the licensing exams and Rick's recommendation the license will not include irrigation (see attached email).

Thiel, Sandra

From: Rick Sager [rick375@centurytel.net]
Sent: Friday, November 01, 2013 1:47 PM
To: Thiel, Sandra
Subject: Re: permit 74-7243

Sandra

Sorry it took so long to get back to you concerning water right 74-7243.

I met with Fran Tonsmieres forman to go over the use of Dry Gulch. After discussing the issues with him and yourself I see no need for a measuring device or a headgate for water right 74-7243. As per normal year there is not enough water in Dry Gulch to warrant it. As watermaster of Water District 74 it would be my recommendation not to require these, as the water is used for storage for stockwater.

I hope this helps if I can do anything else please call me.

Rick Sager

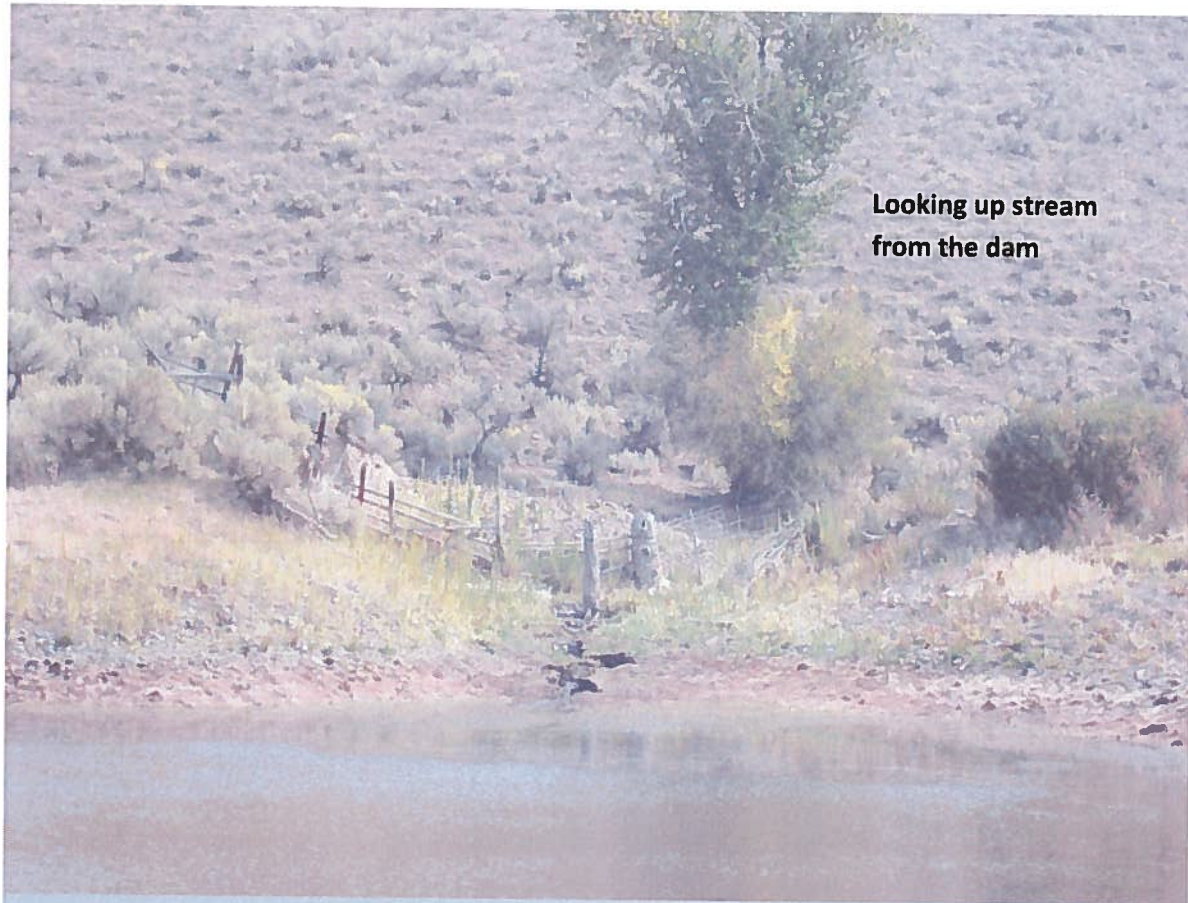
PHOTOGRAPHER AND DATE OF PHOTOS: Sandy Thiel, September 14, 2012 FILE NUMBER: 74-7243



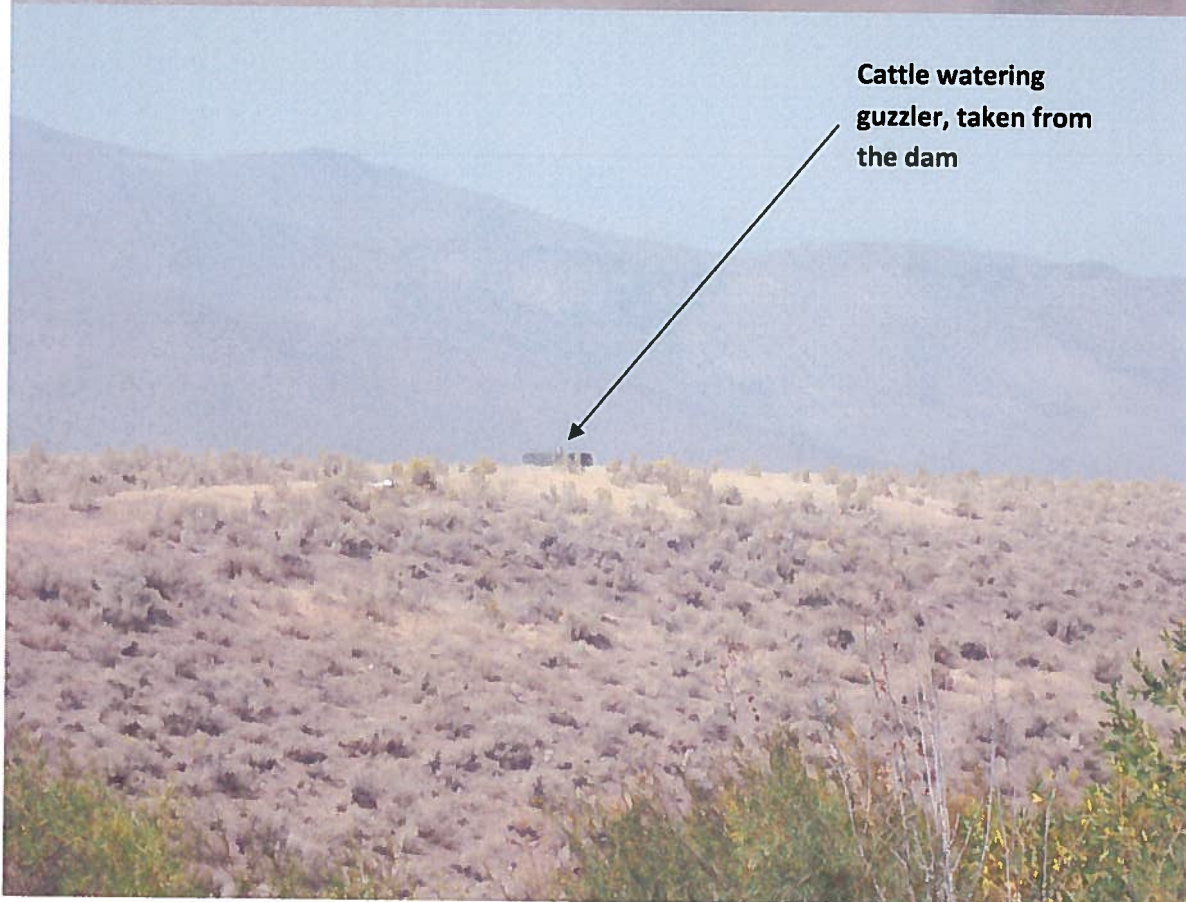
Looking upstream from the upper edge of the pond



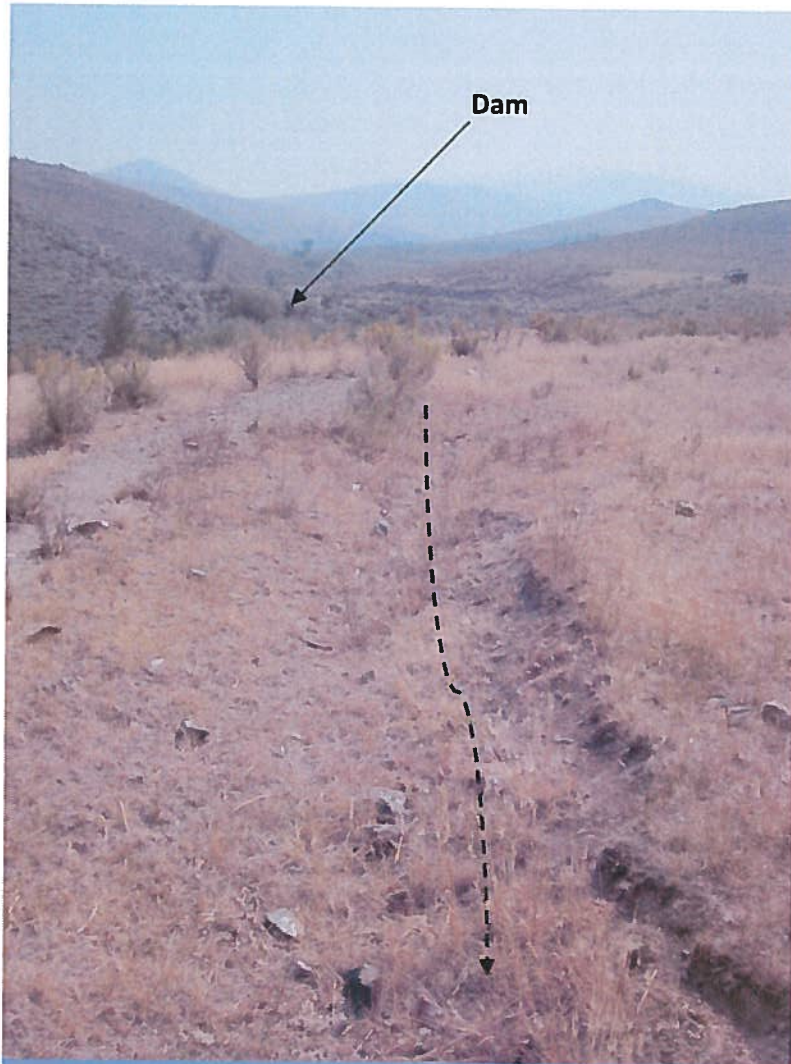
Looking down stream toward pond and dam



Looking up stream
from the dam

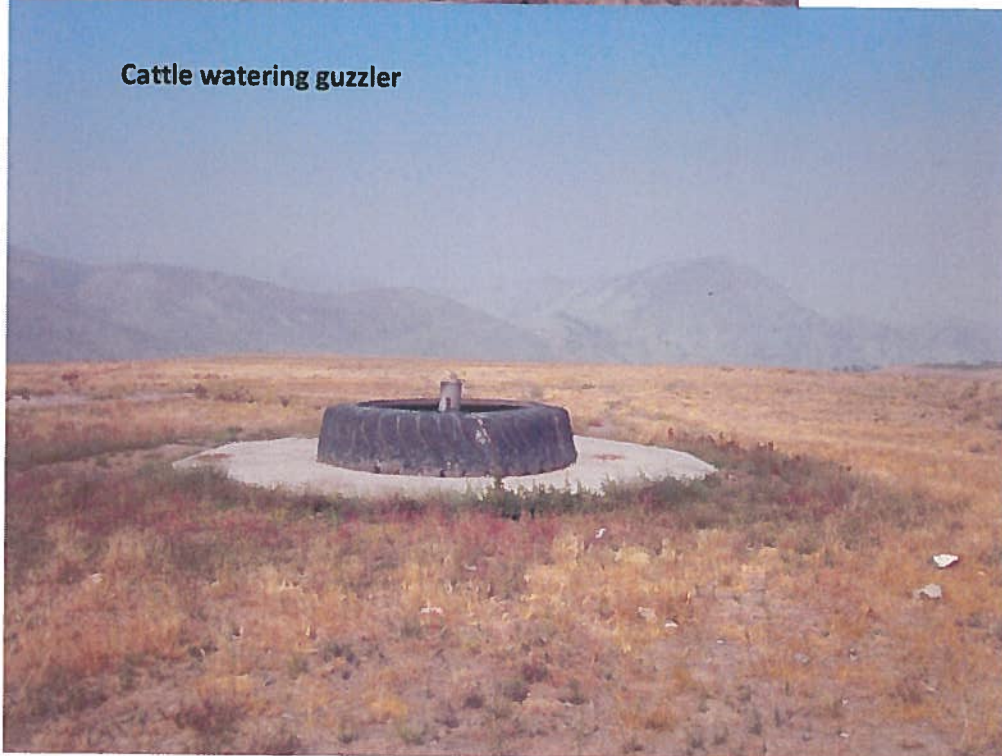


Cattle watering
guzzler, taken from
the dam



Looking upstream from
the cattle watering
guzzler

A buried pipe carries
water from the pond
to the guzzler



Cattle watering guzzler



**Channel downstream
from guzzler**