

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 87-10054

Exam Date: 10/3/2012

- Current Owner: DICKIE LEE PATTON
5199 Robinson Park Rd.
Moscow, ID 83843 (10/11/2012 Latah Assessor's Office confirmed as both physical and mailing address)
- Accompanied by: Not accompanied by anyone; S. Hemenway, field agent only one on the premises at the time of the field examination.

3. SOURCE

UNNAMED STREAM

TRIBUTARY

SOUTH FORK PALOUSE RIVER

B. OVERLAP REVIEW

- Other water rights with the same place of use: None (87-10038 Lapsed)
- Other water rights with the same point of diversion: None (87-10038 Lapsed)

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

UNNAMED STREAM NE1/4SE1/4 Sec. 1, Twp 39N, Rge 05W, B.M. LATAH County

Method of Determination: GPS Garmin map 76S, and ArcMap (Bing Maps Aerial Imagery)

2.

PLACE OF USE: RECREATION STORAGE, WILDLIFE STORAGE, and FIRE PROTECTION 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	
39N	05W	1													X				

Method of Determination: GPS Garmin map 76S, and ArcMap (Bing Maps Aerial Imagery)

- ☒ 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.

Well or Diversion

ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
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POD consists of the spillway/overflow from the 9 ft dam that was constructed in the contour of the valley. The only time there is overflow is during the winter and spring months while there is run-off and snow melt, which makes up the unnamed stream. The system is entirely gravity flow.

D. FLOW MEASUREMENTS

This permit was not for rate, but rather only annual volume for recreation/wildlife/fire protection storage. For this reason, no physical measurement was taken, plus there was no live flow at the intake or overflow that could have been measured (the unnamed stream only flows during the winter and spring time when there is run-off or snow-melt).

E. VOLUME CALCULATIONS**1. Volume Calculations for Storage:**

Acreage calculated on ArcMap for the pond = 0.2 acres X 7 ft average depth = 1.4 af

Precipitation Loss Calculation (see attached ET Idaho 2012 Evapotranspiration sheet and Precip. Loss Calculation Sheet): 0.8 AF

Total: 1.4 af + 0.8 af = 2.2 af

RECOMMEND:

Recreation Storage 2.2 af

Wildlife Storage 2.2 af

Fire Protection Storage 2.2 af

Total Annual Volume: 2.2 af

F. NARRATIVE/REMARKS/COMMENTS

At the time of the field examination, there was no incoming flow from the unnamed stream into the storage pond, and no overflow. Mr. Patton stated that the only time there is any flow is during the winter months and spring. He stated that source of the water is from run-off and snow melt, and there is no spring in the pond that helps maintain the level of the water. According to a 3/19/2008 letter from Dave Cadwallader, IDFG, there is a spring at the head of the reservoir that must seep into the pond to assist with maintaining the level of the pond (no live flow was witnessed at the time of the field exam). The pond was incorporated into the existing land contours, and is not lined, but instead is dug over a clay layer beneath. The pond is 12 ft deep at the dam's edge then slopes back to the surrounding banks to a 2 ft level (average depth 7 ft). There is no supplemental water for the pond (the domestic well is used for internal/external use only). The dam is 9 ft high, and 75 ft across. Wildlife use is for numerous deer and birds, fish, and geese. Recreation use for swimming and fishing. Fire protection use is to fight or repel an existing fire, and can be used by the forest service (presently Mr. Patton does not have a pump, but is in the process of purchasing another one). There is no fish propagation taking place, since Mr. Patton stated that there are only about a half dozen fish in the pond (a few bass, 1 catfish, and a few perch). He never intended to propagate fish for commercial purposes, but rather he has a few fish for his grandchildren to practice fishing when they come to visit. Flow from the unnamed stream comes into the pond from the south end, and in the event there was ever a really high flow, there is an overflow/spillway on the northeast side that allows the flow to continue down the ditch.

Have conditions of permit approval been met? ☒ Yes ☐ No

G. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>ANNUAL VOLUME</u>
RECREATION STORAGE	01/01 to 12/31	2.20 AF
WILDLIFE STORAGE	01/01 to 12/31	2.20 AF
FIRE PROTECTION STORAGE	01/01 to 12/31	2.20 AF
<u>Totals:</u>		2.20 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 ☐ Other

H. AUTHENTICATION

Field Examiner's Name

Sandy Hemenway

Date

10/16/2012

* Use the Precipitation Deficit for 'P' value

ET_{Idaho} 2012 -- Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho

Please send suggestions for improving this site to robison@kimberly.uidaho.edu Copyright 2012, University of Idaho.

Moscow - Univ of Idaho (NWS -- 106152)

Statistics based on thirty year normal spans 1978 to 2010 years

For a different land cover or crop click on the above link.

You can highlight this table and copy via the clipboard to a Microsoft Excel or OpenOffice spreadsheet to plot or otherwise work with this data.

Alfalfa Reference Evapotranspiration ETr															
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Growing Season ^a	Non Growing Season ^b	Annual
Mean ^j	mm/day												mm		
Monthly ^c	0.38	0.96	2.22	3.77	5.00	6.10	7.40	6.75	4.50	2.43	0.76	0.31	0	1240	1240
15-Day Moving Average ^d	0.37	0.92	2.24	3.77	5.06	6.09	7.46	6.73	4.42	2.41	0.73	0.31			
7-Day Moving Average ^e	0.38	0.94	2.22	3.77	5.04	6.10	7.45	6.76	4.46	2.43	0.74	0.31			
3-Day Moving Average ^f	0.38	0.95	2.22	3.77	5.01	6.10	7.41	6.76	4.50	2.43	0.75	0.31			
Standard Deviation ^k	mm/day												mm		
Monthly ^c	0.09	0.21	0.53	0.39	0.71	0.53	1.00	0.66	0.56	0.44	0.15	0.09	0	66	66
15-Day Moving Average ^d	0.11	0.24	0.48	0.56	0.71	0.69	0.85	0.73	0.73	0.49	0.22	0.10			
7-Day Moving Average ^e	0.15	0.34	0.61	0.81	0.99	1.02	1.01	0.97	0.92	0.70	0.30	0.15			
3-Day Moving Average ^f	0.22	0.43	0.77	1.06	1.28	1.32	1.26	1.21	1.14	0.85	0.37	0.22			
20% Exceedance ^l	mm/day												mm		
Monthly ^c	0.43	1.14	2.58	4.07	5.41	6.61	7.95	7.18	4.92	2.64	0.91	0.36	0	1304	1304
15-Day Moving Average ^d	0.55	1.35	3.00	4.74	6.41	7.30	8.78	7.79	5.64	3.29	1.20	0.46			
7-Day Moving Average ^e	0.69	1.71	3.64	5.44	7.16	7.88	9.12	8.41	6.25	3.87	1.52	0.63			
3-Day Moving Average ^f	0.98	1.90	4.24	6.13	7.87	8.74	9.62	8.99	6.77	4.42	1.82	0.92			
80% Exceedance ^m	mm/day												mm		

Monthly ^c	0.33	0.77	1.94	3.42	4.45	5.53	6.74	6.23	3.87	2.14	0.59	0.26	0	1179	1179
15-Day Moving Average ^d	0.22	0.60	1.55	2.91	3.86	4.91	6.06	5.41	3.31	1.51	0.43	0.16			
7-Day Moving Average ^e	0.10	0.44	1.25	2.46	3.36	4.12	5.33	4.86	2.68	1.29	0.33	0.01			
3-Day Moving Average ^f	0.01	0.26	0.99	1.95	2.63	3.14	4.39	3.61	2.25	1.07	0.20	0.13			
Ave Highest ET_r	mm/day												--		
15-Day Moving Average ^g	0.49	1.15	2.66	4.34	5.70	6.73	8.02	7.38	5.02	2.97	0.99	0.40			
7-Day Moving Average ^h	0.62	1.39	3.07	4.98	6.42	7.41	8.51	8.00	5.66	3.46	1.19	0.54			
3-Day Moving Average ⁱ	0.84	1.63	3.69	5.73	7.15	8.13	9.10	8.63	6.32	3.86	1.46	0.76			
Ave Lowest ET_r	mm/day												--		
15-Day Moving Average ^g	0.27	0.76	1.85	3.20	4.42	5.44	6.83	6.07	3.88	1.92	0.54	0.22			
7-Day Moving Average ^h	0.17	0.57	1.50	2.73	3.73	4.66	6.25	5.47	3.38	1.57	0.43	0.11			
3-Day Moving Average ⁱ	0.03	0.42	1.20	2.24	2.96	3.80	5.31	4.58	2.74	1.26	0.29	0.04			
Special normal distribution parameters for monthly, seasonal, and annual intervals															
Skew ^m	0.03	1.31	0.18	0.36	0.09	0.12	0.11	-0.16	0.32	0.13	0.06	0.12	0.00	-0.40	-0.40
Kurtosis ^o	0.73	4.79	0.80	3.37	0.69	2.24	0.78	0.68	2.45	0.71	2.44	0.82	0.00	2.60	2.60

^a Growing Season: This is usually the time from green up or planting in the spring to a killing frost or harvest in the fall. It is not applicable for entries without a growing season and will be blank.

^b Nongrowing Season: This is usually the time from a killing frost or harvest in the fall to the of green up in the spring. It is not applicable for entries without a growing season.

^c Mean of the average daily value for month

^d Mean of the fourteen 15-day period averages contained in the month

^e Mean of the twenty three 7-day period averages contained in the month

^f Mean of the twenty seven 3-day period averages contained in the month

^g Mean of the highest/lowest 15-day period average in month

^h Mean of the highest/lowest 7-day period average in month

ⁱ Mean of the highest/lowest 3-day period average in month

^j This value represents the *mean value* for the parameter for the month over the 'normal' period of record. Generally, the 'normal' period is the last thirty years with data.

^k This value represents the *standard deviation* for the parameter for the month over the 'normal' period.

^l This value represents the *value* for the parameter that has a 20% chance of being exceeded that month during any particular year. Conversely, there is an 80% chance that the parameter value will be less than the *value* shown.

^m This value represents the *value* for the parameter that has a 80% chance of being exceeded that month during any particular year. Conversely, there is an 20% chance that the parameter value will be less than the *value* shown.

ⁿ This value represents the *skewness (asymmetry) of the distribution of the parameter values* for the month (year) over the 'normal' period. A value near zero indicates that the distribution approximates a normal (Gaussian) and symmetrical distribution. A negative skew indicates that the parameter distribution has relatively few low values compared to high values. A positive skew indicates that the distribution has relatively few high values compared to the number of low values. A skew value near 1 indicates that the underlying distribution approximates a lognormal distribution.

^o This value represents the *kurtosis* of the parameter value distribution for the month (year) over the 'normal' period. Kurtosis is a measurement of the height to width ratio of the probability distribution, or the *peakedness (slenderness)*. A normal (Gaussian) distribution has a kurtosis of 3. A high kurtosis distribution has a sharper peak and longer tails, while a low kurtosis distribution has a more rounded peak and shorter tails.

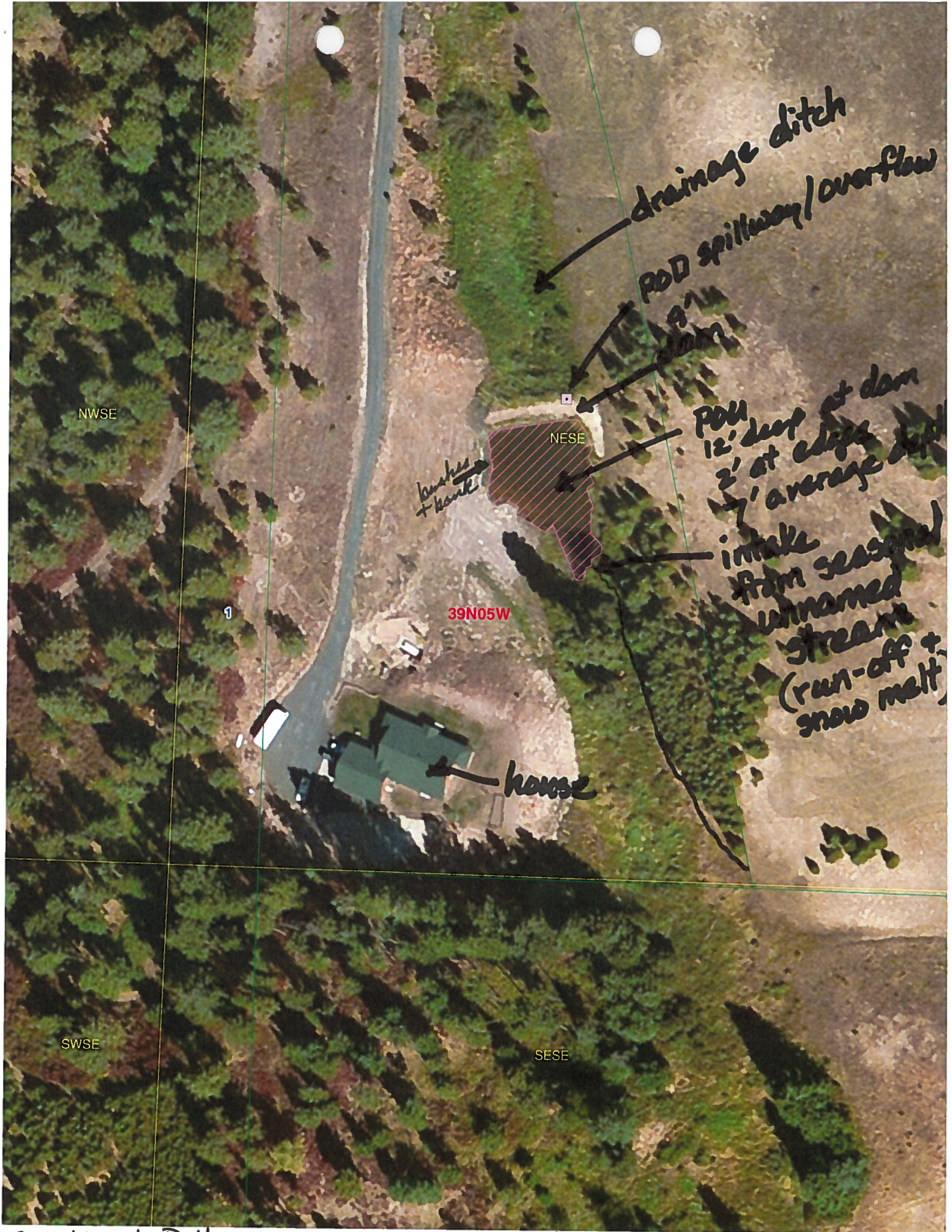
This work and report were prepared by the University of Idaho Research and Extension Center at Kimberly, Idaho under contract with the Idaho Department of Water Resources. Work was supported by funding from IDWR and the Idaho Agricultural Experiment Station and Idaho Engineering Experiment Station. The authors gratefully acknowledge the long-term evapotranspiration data collection and long-standing advice provided by Dr. James L. Wright, USDA-ARS Kimberly (ret.), the more than two decades of high quality agricultural weather data collection by the U.S. Bureau of Reclamation AgriMet system, and the very long-standing, routine data collection by the hundreds of cooperative weather station volunteers across the state who, for more than one-hundred years, have faithfully observed daily air temperature and precipitation.

The citation for the evapotranspiration data used from this site should be: Allen, Richard G. and Clarence W. Robison, 2012. *Evapotranspiration and Consumptive Irrigation Water Requirements for Idaho: Supplement updating the Time Series through December 2008*, Research Technical Completion Report, Kimberly Research and Extension Center, University of Idaho, Moscow, ID.

Questions regarding the data should be addressed to [Clarence W. Robison](#) or [Richard G. Allen](#), University of Idaho, Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, ID 83341. Telephone (208)-423-6610

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drainage ditch
POD spillway/overflow

POD
12' deep at dam
2' at edges
7' average depth

intake
from seasonal
unnamed
stream
(run-off +
snow melt)

NESE

bushes
+ bank

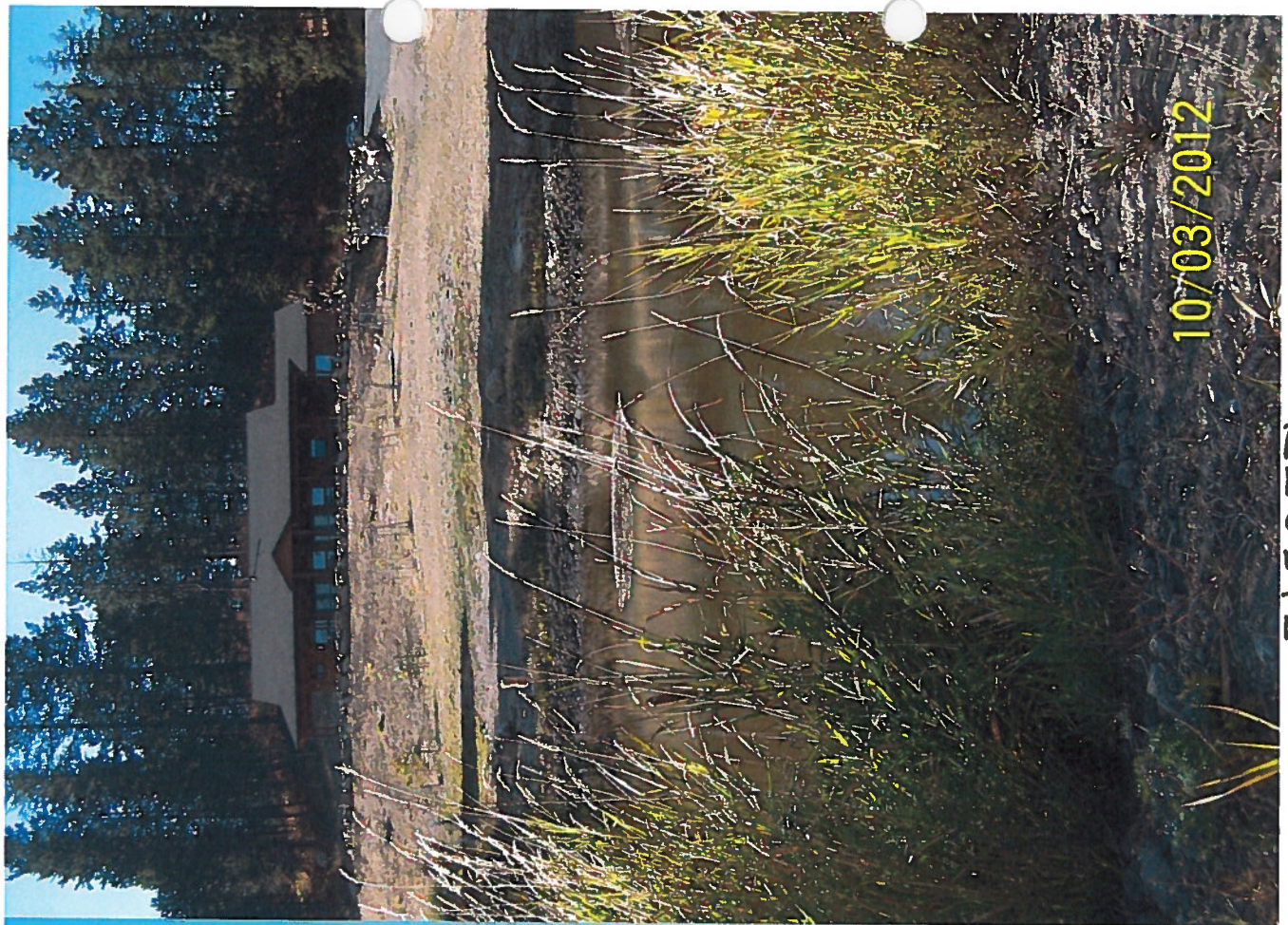
39N05W

house

NWSE

SWSE

SESE



10/03/2012

pond
location
in
reference
to
house

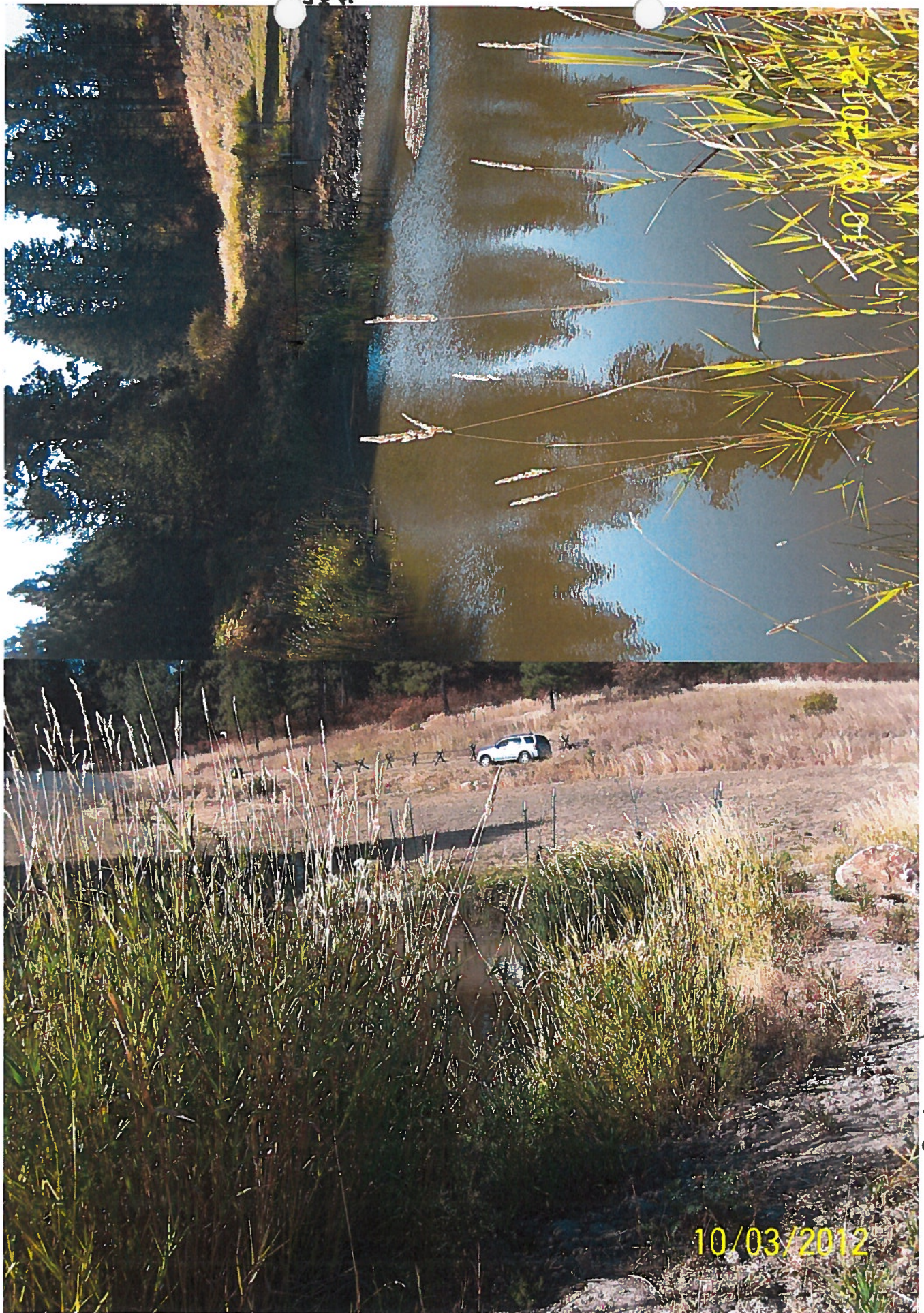


POD
overflow
spillway

runoff
stream
enters
pond
here

POLL
pond
12' deep
at dam
end, 2'
at edge
7' across
depth

10/03/2012



cut -
road
stream

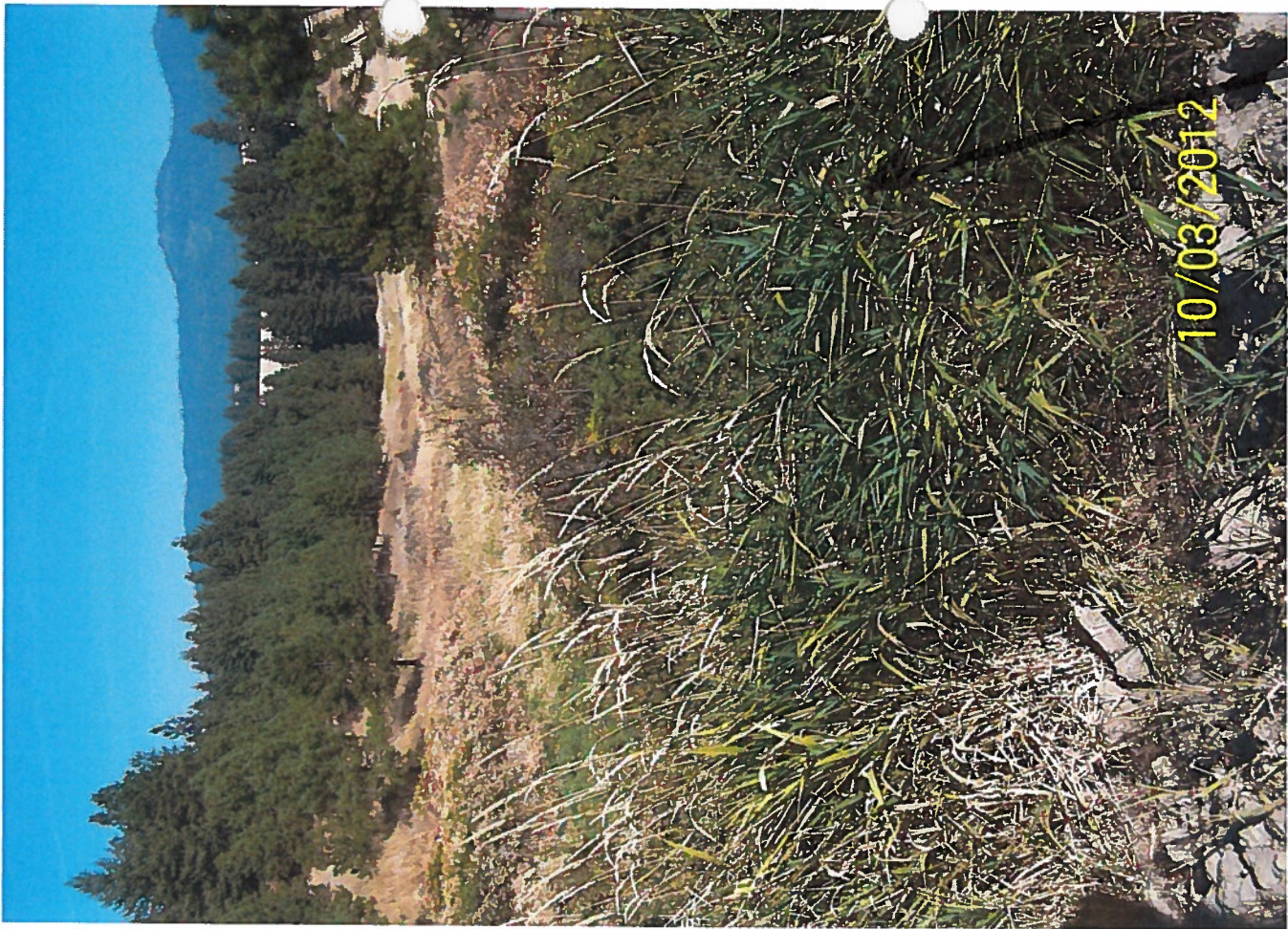
10/03/2012

9'
height
dam,
75'
across

10/03/2012

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S. Hemerway



POC
overflow
spillway
if there
is any
overflow
it
continue
down th
ditch

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5 Human...