

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 65-13903

Exam Date: 10/3/2011

1. Current Owner: CAROL LYNN MAC GREGOR
1109 WARM SPRINGS AVE
BOISE ID 83712
(208) 386-9494
2. Accompanied by: Carol Lynn MacGregor
Phone No: (208)386-9494
Address: 60 Raspberry Rd, Cascade, ID 83611 (physical address of POU)
Relationship to Permit Holder: self
Email: cmacgregorpd@gmail.com

3. **SOURCE**

UNNAMED STREAM

TRIBUTARY

MOORES CREEK

B. OVERLAP REVIEW

1. Other water rights with the same place of use: 65-13978 Domestic (new house, spring source); 65-3408 Irrigation (unnamed stream, common name Sandy Creek and House Creek) with both 65-3408 and 65-13903 overlapping 15.7 of the same acres; 65-3409 Domestic (old house, groundwater source); 65-13905 Domestic (old house, spring source).
2. Other water rights with the same point of diversion: None

C. DIVERSION AND DELIVERY SYSTEM1. **LOCATION OF POINT(S) OF DIVERSION:**

UNNAMED STREAM SE1/4NE1/4 Sec. 15, Twp 13N, Rge 03E, B.M. VALLEY County

Method of Determination: Garmin GPS Map 76S, and 2009 and 2011 ArcMap

2.

PLACE OF USE: IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	<u>NE</u>	<u>NW</u>	<u>SW</u>	<u>SE</u>	
13N	03E	14					17.0	4.4		1.0									22.4

Total Acres: 22.4

STOCKWATER same as IRRIGATION

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.

Well or Diversion

ID No.*	Motor Make	Hp	Motor Serial No.	Pump Make	Pump Serial No. or Discharge Size
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A0016947 22 inch X 24 inch concrete headgate with a 16 inch weir (all gravity flow system). In the bottom of the concrete headgate flow also discharges to a buried 2 inch PVC main.

**The ID Tag is located on the fence north of the headgate.

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

D. FLOW MEASUREMENTS

1. Measurements:

Physical measurement was collected from the faucet next to the shop, but this is not being used, due to the owner's husband fixing the broken line, and reduced flow to the faucet. Instead for this portion of the exam, a 2 inch pipe conversion will be used, since it was confirmed that the 2 inch pipe located at the bottom of the concrete head gate was capable of being full capacity.

System Capacity:

2 inch Pipe Conversion:

$$Q = 5 \times 3.1416 \times \left[\frac{(\text{diameter}/12)}{2} \right]^2 \times \text{velocity} = 0.11 \text{ cfs}$$

Weir: $Q = 3.247 L H^{1.48}$

16 inch X 1 inch flow weir (flow at the time of the field exam; owner stated this is low due to time of the year)

$$3.247 (1.35) (0.083)^{1.48} = 0.109 = 0.11 \text{ cfs}$$

16 inch X 2 inch high water mark on weir (recommended flow, due to more normal flow during irrigation season)

$$3.247 (1.35) (0.166)^{1.48} = 0.31 \text{ cfs}$$

$$\text{System Capacity} = 2 \text{ inch } (0.11 \text{ cfs}) + 16 \text{ inch X 2 inch high water mark on weir } (0.31 \text{ cfs}) = 0.42 \text{ cfs}$$

Stockwater: 150 head range cattle

Table 1 Diversion Rate Recommended for 101 – 200 head cattle = 0.05 cfs

Same water as irrigation water (dam up dirt ditches with tarps, risers w/faucets for hoses throughout the POU, and 1 ¼ inch buried PVC w/risers and faucets for filling stockwater tanks inside the corral area.

Irrigation:

$$22.4 \text{ acres} \times 0.02 \text{ cfs} = 0.448 = 0.45 \text{ cfs}$$

Recommend capacity of system: 0.42 cfs

RECOMMENDATION:

Stockwater: 0.05 cfs

Irrigation: 0.42 cfs

Total Diversion Rate: 0.042 (capacity of the system)

E. VOLUME CALCULATIONS1. Volume Calculations for Irrigation:

$$V_{I.R.} = (\text{Acres Irrigated}) \times (\text{Irrigation Requirement}) = 22.4 \times 3 = 67.2 \text{ af}$$

$$V_{D.R.} = [\text{Diversion Rate (cfs)}] \times (\text{Days in Irrigation season}) \times 1.9835 = 0.42 \times 199 \times 1.9835 = 165.8 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 67.2 \text{ af}$$

2. Volume Calculations for Other Uses:

Stockwater:

$$V_{ir} = (150 \text{ head} \times 12 \text{ gpd} \times 365 \text{ Days}) / 325,850 = 2.02 \text{ af}$$

$$V_{dr} = 0.05 \text{ cfs} \times 365 \text{ days} \times 1.9835 = 36.2 \text{ af}$$

$$V = 2.0 \text{ af}$$

RECOMMENDATION:

Irrigation 67.2 af

Stockwater 2.0 af

Total Annual Volume 69.2 af

F. NARRATIVE/REMARKS/COMMENTS

At the point of diversion there is a 22 inch by 24 inch concrete head gate, with a 2 inch screened pipe discharges to 2 inch buried PVC main that runs down the hill to 4 risers with faucets, where hoses can be attached and moved around with rainbirds. The 2 inch pipe then continues down to a faucet (unnamed stream source) next to frost-free hydrant (spring source on another water right) located next to the shop. The 2 inch main splits and reduces to (2) 1 1/4 inch buried PVC lines. One goes behind the corral, and the other through the yard with an open discharge to a flow-through system pond located directly north of the new house. The overflow from the pond discharges to a dirt ditch to the east that runs along the fence line (north and south) with other ditches running west to east. Plastic tarps are used to dam up the dirt ditches to flood irrigate. The 150 head stock drink from this same water. The 1 1/4 inch buried PVC pipe to the corral area used both for irrigation and for filling the stockwater tanks. At the concrete head gate, there is a 16 inch wide weir that allow the flow from the unnamed stream (local name is Janelle Creek) to continue down the hill and come onto the south boarder of the field south of the house, and continuing west to east. At the time of the field exam, flow in the stream was lower than it would normally be earlier in the irrigation season (confirmed by high water marks on the weir). Also, the owners husband was in the process of repairing some broken pipe at the time of the field exam, therefore the measurement from the faucet by the shop was not an accurate measurement. Acreage irrigated with risers and faucets, where hoses and rainbirds are attached, is also used for fire protection if needed.

The map that was submitted with the application for permit, had the correct POU location on it, but was shown incorrectly on the approved Permit. The POU will be corrected at the time of licensing, along with the correct POD location (GPS confirmed at the time of the field exam). An amendment will be required to correct these.

Have conditions of permit approval been met? ☒ Yes ☐ No The measuring device is the headgate with a 16 inch weir on the discharge end, which continues down the unnamed stream. A control valve, which is lockable is at the headgate where the 2 inch PVC discharges.

G. RECOMMENDATIONS1. **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	0.050 CFS	2.00 AF
IRRIGATION	04/15 to 10/31	0.420 CFS	67.20 AF
<u>Totals:</u>		0.420 CFS	69.20 AF

2. Recommended Amendments

☒_X_Change P.D. as reflected above ☐_Add P.D. as reflected above ☐_None

☒_X_Change P.U. as reflected above ☐_Add P.U. as reflected above ☐_Other

H. AUTHENTICATION

Field Examiner's Name

Gandy Hemenway

Date

1/5/2012

SWSW

SESW

11

SWSE

65-3409
Domestic
groundwater
old house

65-13905
Domestic
spring
old house

13903E

65-13978
Domestic
spring
old house

NWNE

65-13905
Irrigation
+ stockwater
unnamed
stream
(Gorelle
Creek)

14

SWNW

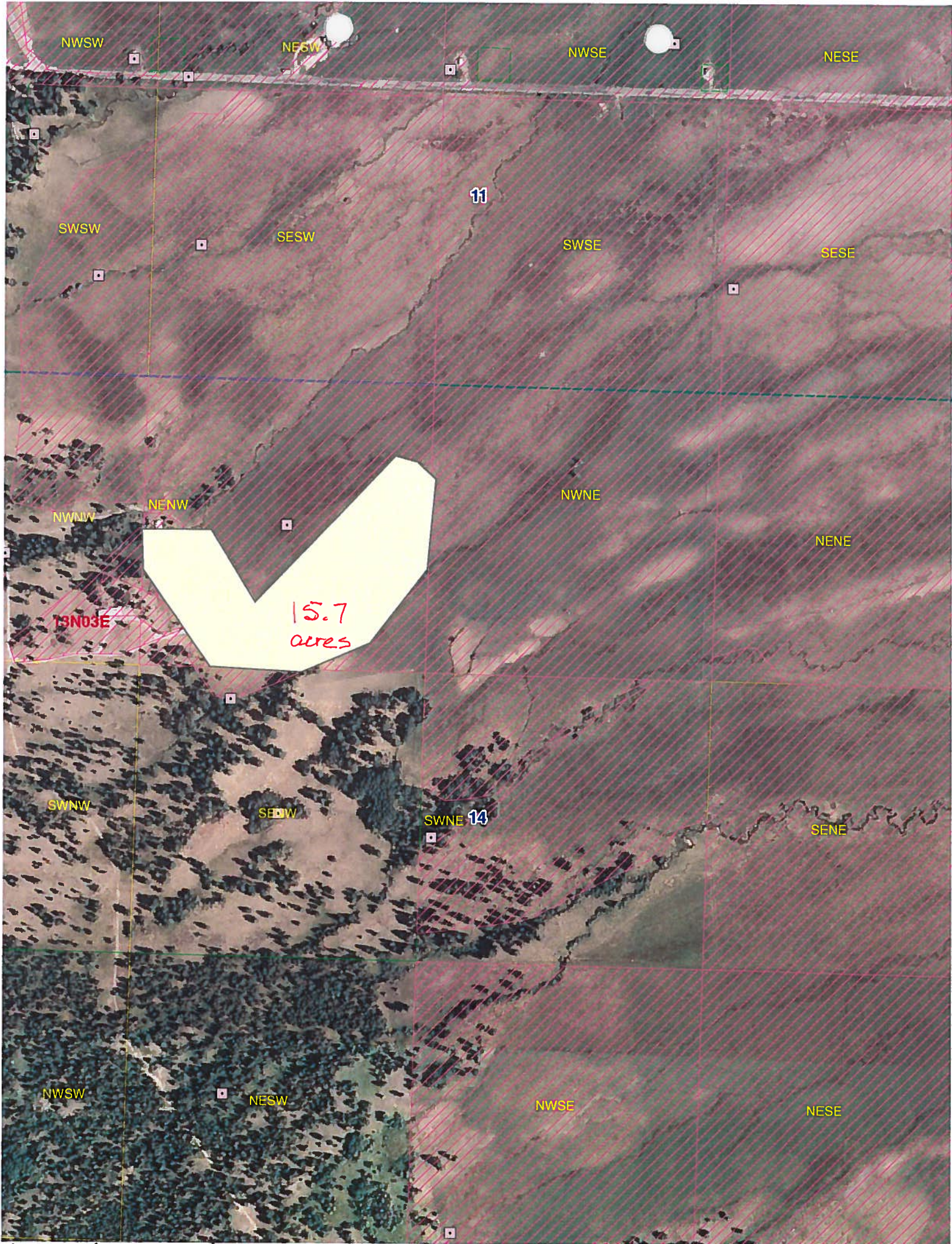
SESW

NWSW

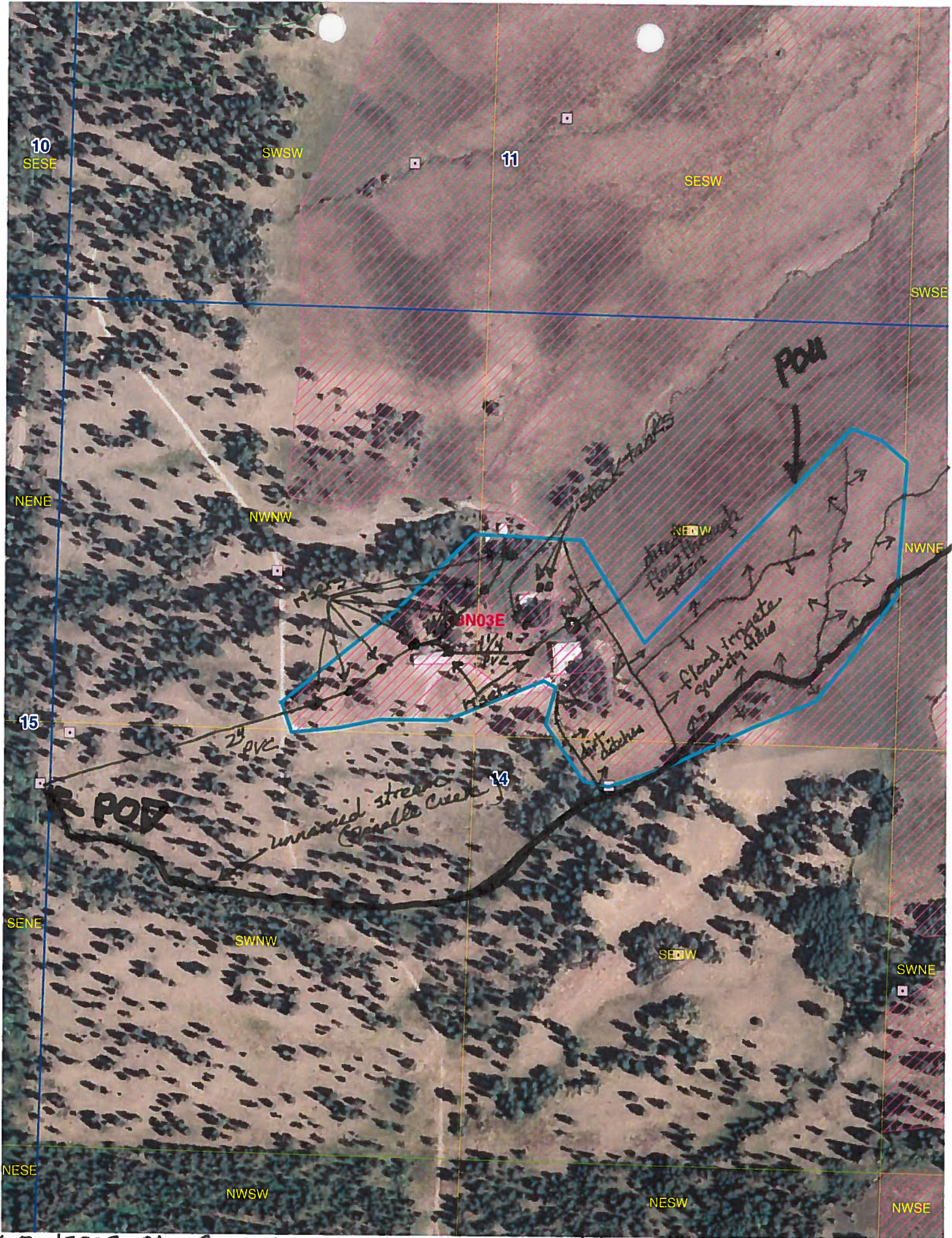
NESW

NWSE

65-3408
Irrigation
unnamed
stream
(Sand
Creek
and
House
Creek)



15-2409 15-1302 15-7 2409





POD
22"x24"
concrete
headgate
w/ flow
reduced
to be
able to
see
location
of 2"
line
intake
(screened)

locks
control
works



unnamed
stream
(common
name:
Ganella
Creek)

16"x1"
weir,
with
high-
water
mark
at 2"



704
 NWNW
 field
 w/ 2"
 buried
 line
 from
 POD.
 coming
 down
 the hill
 w/ 4
 risers
 w/ faucet
 to
 attach
 hoses &
 miss-
 rainbird
 (used
 for
 irrigation
 &
 fire
 protection)



2" main
 reduces
 to
 1 1/4"
 risers
 w/ faucet



Pou
field
south
of the
new
house,
that
goes
into
the
SE/W

10/03/2011



The
shop
with
the
riser-
jacket
from
the
unnamed
stream

10/03/2011

65-13903 MacGregor

S. Hernerway



Common
name
for
unnamed
stream
is
Janelle
Creek



150
head
stock

flow
through
in
pond
goes
to dirt
ditch
where
tanks
are used
to dam
up &
flood
irrigate

POU
orrals
with
stock
tanks



POU
The
area
surround
the
new
house



POU
area
surround
the
shop

65-13403 Mae Gregor

S. Hennrich



POLL
NENE
field

65-13903 MacGregor

S. Hemerway