

[illegible]

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

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

No tags were placed on the checks. Each Check is constructed of a culvert going under the road to the next section of the unnamed drain, with means of placing a board on the lower level to raise the level of the unnamed drain.

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

D. FLOW MEASUREMENTS

1. Measurements:

Table 1. Recommended Diversion Rates for Stockwater: 401 – 500 head cattle = 0.12 cfs

To assist in determining the Initial flow being discharged into the unnamed drain, the 2 side-by-side weirs were utilized that are located east of POD#1 check:

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

① 75" wide, by 4" deep
 $Q = 3.247 (6.25) (.33)^{1.48} = 3.99 \text{ cfs}$

② 37 1/2" wide, by 8" deep
 $Q = 3.247 (3.16) (.66)^{1.48} = 5.5 \text{ cfs}$

Total initial Diversion rate = $3.99 + 5.5 = 9.49 \text{ cfs}$

POD #2 Check:
 $D = 36" \downarrow \uparrow 4" F \downarrow 1" L$ $F = 4" \quad D = 36" \quad F/D = 4/36 = 11\% \quad L = 1$
 $GPM = (.949) D^2 L = (.949) (36)^2 (1) = 2.73 \text{ cfs}$

POD #3 Check (low flow, due to drain being extremely iced up):

$$D = 36" \downarrow \uparrow 34" F \downarrow 1/2" L \quad F = 34" \quad D = 36" \quad F/D = 34/36 = 94\% \quad L = 1/2$$

$$GPM = (.019) (36)^2 (1/2) = 0.03 \text{ cfs}$$

RECOMMEND: 0.12 cfs due to the irrigation water from Washoe Irrigation not being discharged down the drains at the time of the field exam, and evidence that there is sufficient water to supply the rate of 0.12 cfs.

E. VOLUME CALCULATIONS

1. Volume Calculations for Stockwater:

$$V_{I.R.} = (500 \text{ head} \times 12 \text{ gpd} \times 365 \text{ days}) / 325,850 = 6.7 \text{ af}$$

$$V_{D.R.} = 0.12 \text{ cfs} \times 1.9835 \times 365 \text{ days} = 86.9 \text{ af}$$

$$V = \text{Smaller of } V_{I.R.} \text{ and } V_{D.R.} = 6.7 \text{ af}$$

Recommend 6.7 af

F. NARRATIVE/REMARKS/COMMENTS

During the field exam, a physical measurement was taken from the two weirs where flow is initially discharged into the drain (east of the POD#1 check). This was to determine flow being discharged into the unnamed drain that is not being discharged during irrigation season by Washoe Irrigation.

The weirs measured as follows (see field exam Flow Measurements for complete calculations):

37 1/2 inch wide by 8 inch deep = 5.5 cfs,

75 inch wide by 4 inch deep = 3.99 cfs, total 9.49 cfs being discharged to the unnamed drain.

Another measurement was taken at POD #2 check 2.73 cfs, and POD #3 check 0.03 cfs (reduced flow due to icing over of the ditch, and minimal flow; high water marks on the culvert indicates historically higher flow), with this flow continuing down the drain to the Snake River. The entire system is gravity flow. Check structures in the unnamed drain were constructed to moderately check up flow. This will not raise the level in the unnamed drain to be considered pond storage. Water is not diverted out of each section of the unnamed drain nor stored in each section of the unnamed drain, but the check structures offer a way out of the dilemma by providing a diversion works and instream flow. (See Steve Lester's 5/23/2005 comment/analysis). Use is for 500 head range cattle.

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

G. 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	0.120 CFS	6.70 AF
	<u>Totals:</u>	0.120 CFS	6.70 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

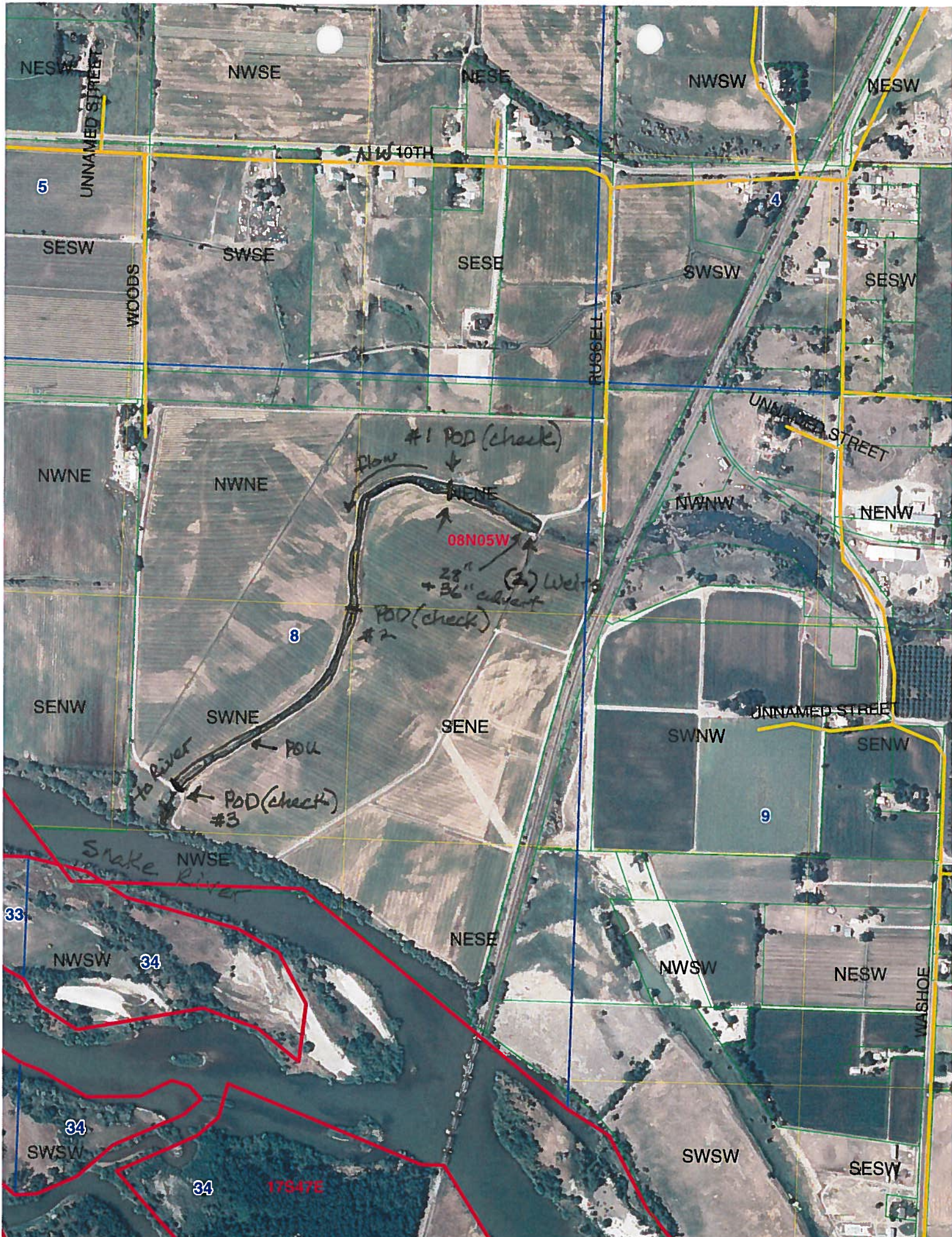
H. AUTHENTICATION

Field Examiner's Name

Sandy Hemmenway

Date

1/12/2012





Initial
Discharge
of flow
to the
drain
ditch
75' wide
by 4'
deep at
3 1/2' wide
by 8"

01/04/2012



500
head
cattle

Union
drain

POD#
check
structure

01/04/2012

65-22948 Colwell

S. Hemmerway



POD
#2
check

01/04/2012



flow
continues
to the
Snake
River

POD
#3
check

01/04/2012

LS-22948 Colwell

S. Hemerway