

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES

JASON KING, P.E.
STATE ENGINEER



ROSE VALLEY
HYDROGRAPHIC BASIN 13-199

GROUNDWATER PUMPAGE INVENTORY

WATER YEAR 2014

Field Investigated by: John Guillory, P.E. & Christi Cooper
Report Prepared by: Christi Cooper

TABLE OF CONTENTS

ABSTRACT..... 1

HYDROGRAPHIC BASIN SUMMARY 2

PURPOSE AND SCOPE..... 3

DESCRIPTION OF THE STUDY AREA 3

GROUNDWATER LEVELS..... 3

METHODS TO ESTIMATE PUMPAGE 3

PUMPAGE BY MANNER OF USE 4

 FIGURE 1. PHYSIOGRAPHIC MAP OF ROSE VALLEY, HYDROGRAPHIC BASIN 13-199... 5

APPENDIX A. ROSE VALLEY HISTORICAL PUMPAGE..... 6

APPENDIX B. ROSE VALLEY PUMPAGE FOR WATER YEAR 2014..... 8

**APPENDIX C. ROSE VALLEY GROUNDWATER PUMPAGE INVENTORY FOR
WATER YEAR 2014. 10**

**APPENDIX D. ROSE VALLEY GROUNDWATER PUMPAGE INVENTORY FIELD
NOTES FOR WATER YEAR 2014. 13**

ABSTRACT

This inventory represents the status and pumpage of all permitted, certificated and claims of vested right groundwater rights located within Rose Valley, Hydrographic Basin 13-199, for water year 2014 (October 1, 2013 through September 30, 2014). Also included is data associated with depth to groundwater.

The data presented are valid for the time period of this report, and may vary from previously published data as water rights within the basin are subject to administrative action, such as certification, cancellation, forfeiture, or withdrawal on a daily basis.

For water year 2014 the permitted, certificated and claims of vested right groundwater rights totaled **1,396 acre-feet**. Estimated pumpage for the water year was **740 acre-feet**. For water year 2014, appropriations for irrigation (the largest manner of use in the basin) totaled 1,396 acre-feet and pumpage was 733 acre-feet. The second largest manner of use was pumping by exempt domestic wells, at 7 acre-feet. Exempt domestic wells are defined by Nevada Revised Statutes 534.013 and do not require a permit issued by the State Engineer.

HYDROGRAPHIC BASIN SUMMARY

HYDROGRAPHIC BASIN NUMBER..... 199, REGION 13
HYDROGRAPHIC BASIN NAME ROSE VALLEY
COUNTIES..... LINCOLN
NEARBY COMMUNITIES..... URSINE, PIOCHE
DESIGNATED NO
DENIALS BASED UPON WATER AVAILABILITY NONE
GROUNDWATER LEVEL MEASUREMENTS NDWR
ESTIMATED PUMPAGE INVENTORY, ACRE-FEET IN 2014..... 740*

STATE ENGINEER'S ORDERS..... NONE

COMMITTED GROUNDWATER RESOURCE: 1,396 ACRE-FEET DATE: JANUARY 2015
IRRIGATION 1,396

NOTE: Committed groundwater resource data are accurate for January 2015. Manner of use category totals vary over time, as water rights (rights) are not necessarily static. Rights may be subject to change applications, certification, withdrawals, forfeiture and cancellations; each of these circumstances could impact the duty, diversion rate and acreage associated with a given right.

*Includes pumpage by exempt domestic wells, as defined by NRS 534.013. The domestic use estimate is based upon a count of the total domestic wells in the basin multiplied by 1 acre-foot per annum. The number of domestic wells in the basin, based on a query of the [Nevada Division of Water Resources Well Log Database](#), is estimated to be 7.

PURPOSE AND SCOPE

The purpose of this report is to inventory all of the groundwater resources allocated and described by the Office of the State Engineer, Nevada Division of Water Resources (NDWR), and to estimate the amount of groundwater pumped within the Rose Valley Hydrographic Basin (13-199), for the time period beginning October 1, 2013 and ending September 30, 2014 (hereafter referred to as water year 2014). This report estimates the amount of groundwater pumped under the permits and certificates issued by the State Engineer, claims of vested right, and the amount pumped by exempt domestic wells within the basin. Associated information, such as groundwater level measurements, is also presented.

DESCRIPTION OF THE STUDY AREA

Rose Valley is a very small basin located in central eastern Nevada, approximately 12 miles east of Pioche, Nevada. The basin is located within Lincoln County (see Figure 1), and is within the Colorado River Hydrographic Region. The adjacent Nevada hydrographic basins are as follows: Dry Valley (13-198) to the south and east; Patterson Valley (13-202) to the west; and Eagle Valley (13-200) to the north.

GROUNDWATER LEVELS

Depths to groundwater in Rose Valley are measured on a semi-annual basis by NDWR. The following are the names and links to the data for active sites in the basin:

[199 N01 E69 21AA 1](#)

[199 N01 E69 21AB 1](#)

[199 N01 E69 21AC 1](#)

Additional site and water level data are can be accessed at the NDWR website (<http://water.nv.gov/data/waterlevel/>). Groundwater level data have also been collected by the U.S. Geological Survey (USGS) and may be accessed through their website (<http://nevada.usgs.gov/>).

METHODS TO ESTIMATE PUMPAGE

This report estimates the amount of groundwater pumped under the permits and certificates issued by the Nevada State Engineer as well as claims of vested right and exempt domestic wells in the Rose Valley Hydrographic Basin. The following methods were used to arrive at the estimated use:

- Where totalizing meters were in place, meter readings were taken and compared with previous data (if available).
- Where meters were not in place and the use was irrigation, pumpage was estimated by multiplying the number of hours the well was operated during the past year (determined from an hour meter reading or asking the water user) by the certificated diversion rate.
- Where there were no flow meters or other reliable options for estimating pumpage and the use was irrigation, pumpage was estimated by dividing the Net Irrigation Water Requirement (NIWR) for the crop grown by the efficiency of the irrigation method used, then multiplying by the number of acres irrigated. Irrigation efficiencies associated with three types of irrigation methods are as follows: pivot at

85%; wheel line or other hand moved sprinklers at 75%; and flood at 60%. The pumpage amount estimated by this method was limited by the duty of the permit. For places where the groundwater rights are supplemental to surface water, groundwater use is estimated using the NIWR method above, but is adjusted based on available surface water for the year. Evapotranspiration and NIWR data by basin can be found on the NDWR website at http://water.nv.gov/mapping/et/et_general.cfm. This approach using the NIWR to estimate pumpage was not used in previous inventories, and pumpage estimates for 2014 may differ significantly from estimates of previous years.

- Where meters were not present, previous data were not available, and the manner of use was not irrigation, pumpage was estimated by applying the annual duty associated with the certificate (if the water right was perfected), permit or claim, if the use was as described in the certificate, permit or claim. If the use was not as described in the certificate, permit or claim, a value was estimated based upon the circumstances of use for the subject year.
- Exempt domestic wells may be drilled and utilized where water service from a purveyor is not available. These types of wells do not require a permit from the State Engineer if they do not pump more than 2 acre-feet per year as provided by Nevada Revised Statutes (NRS) [534.180](#). [NRS 534.013](#) defines this category of domestic use as follows: “*Domestic use or domestic purposes extends to culinary and household purposes directly related to a single family dwelling, including, without limitation, the watering of a family garden and lawn and the watering of livestock and any other domestic animals or household pets.*” The number of exempt domestic wells in the basin is determined by a query of the NDWR Well Log Database. The amount of water pumped by exempt domestic wells is estimated to be one acre-foot per well.

PUMPAGE BY MANNER OF USE

Note that all data herein are estimates and are subject to revision. The total estimated groundwater pumpage for water year 2014 was **740 acre-feet**. The annual duties of the certificates, permits and claims of vested right within the Rose Valley Hydrographic Basin totaled **1,396 acre-feet**. For water year 2014, the appropriated and actual pumped totals are categorized by manner of use:

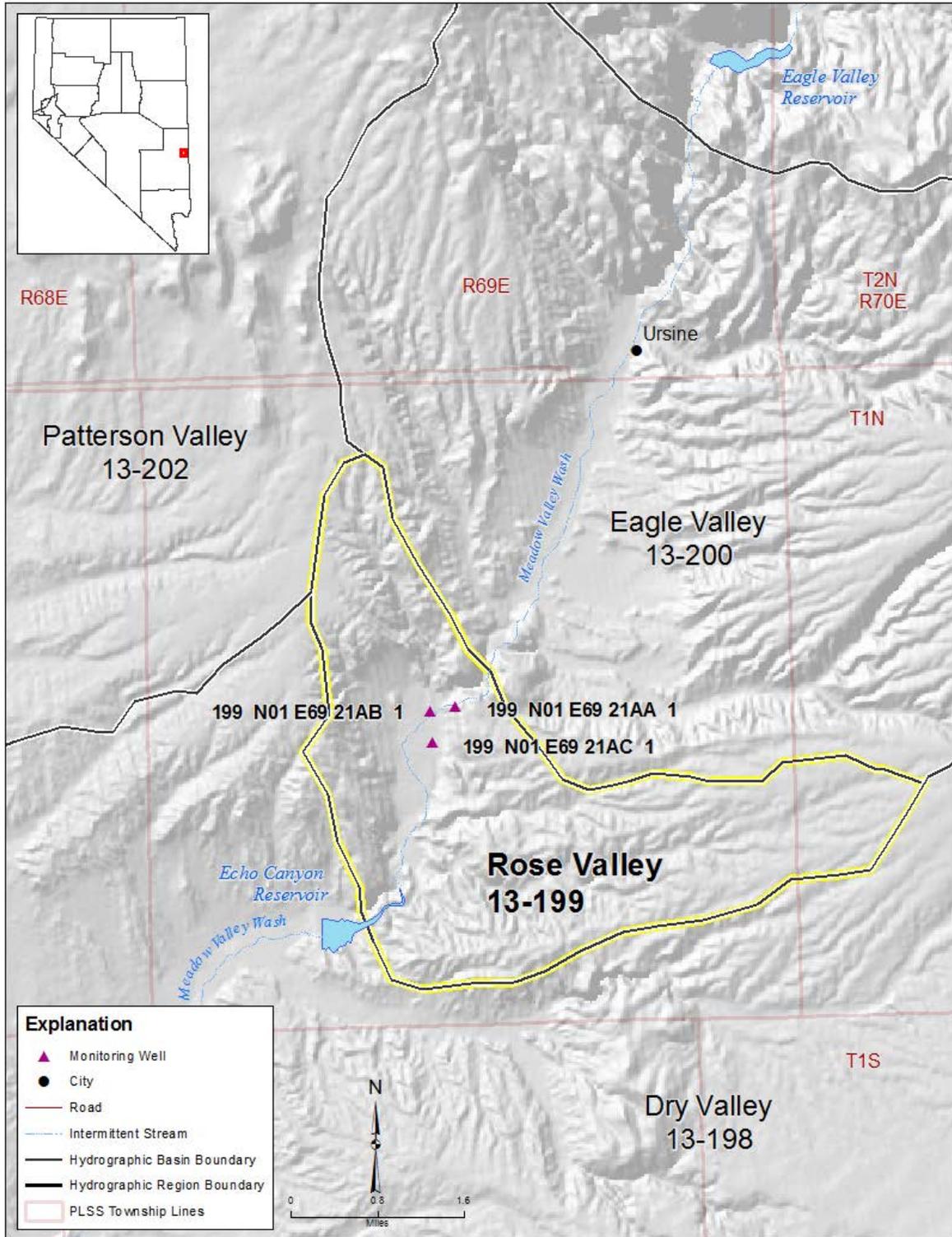
A. Irrigation (IRR)

Appropriations for irrigation purposes totaled 1,396 acre-feet, with estimated groundwater pumpage of 733 acre-feet.

B. Domestic (DOM)

Appropriations for domestic purposes totaled 0 acre-feet in the basin. However, records of the State Engineer indicate an estimated 7 exempt domestic wells existed in the basin during water year 2014. The amount of water pumped for domestic use as described under NRS 534.013 is estimated at 7 acre-feet.

FIGURE 1. PHYSIOGRAPHIC MAP OF ROSE VALLEY, HYDROGRAPHIC BASIN 13-199.

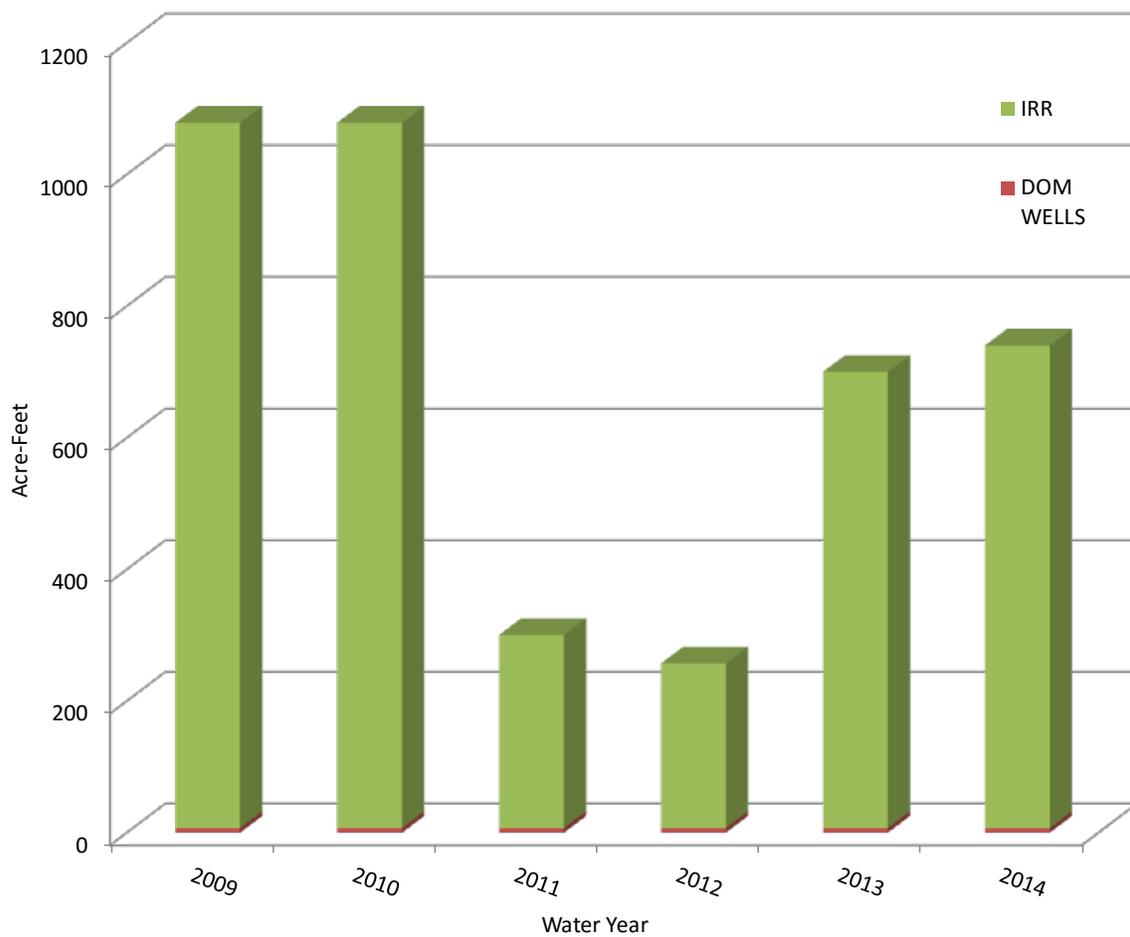


APPENDIX A. ROSE VALLEY HISTORICAL PUMPAGE.

HISTORICAL GROUNDWATER PUMPAGE BY MANNER OF USE

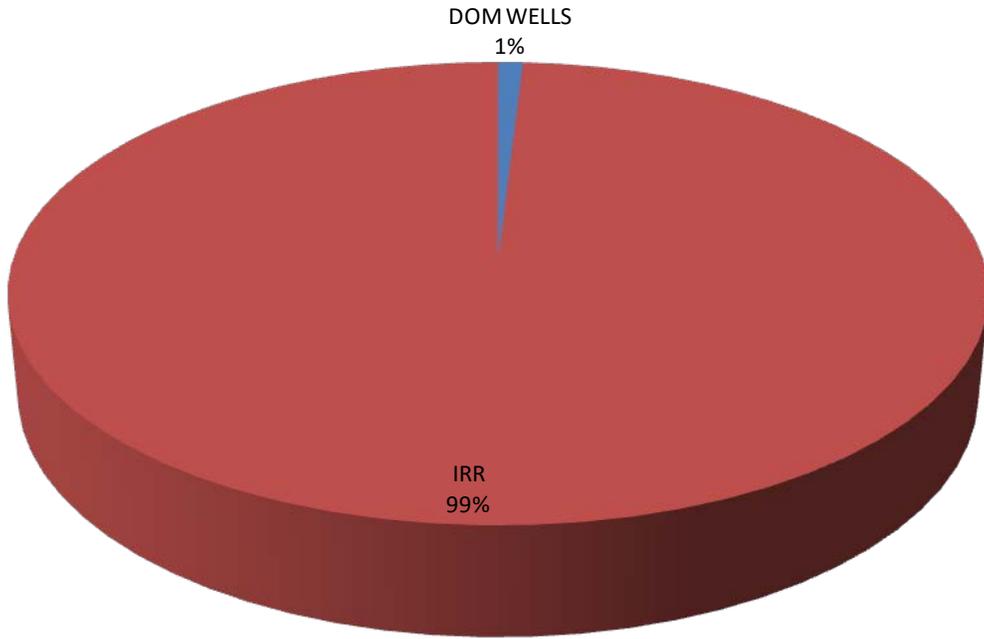
YEAR	DOM WELLS	IRR	TOTAL
2009	7	1072	1079
2010	7	1072	1079
2011	7	293	300
2012	7	250	257
2013	7	693	700
2014	7	733	740

All values are in acre-feet

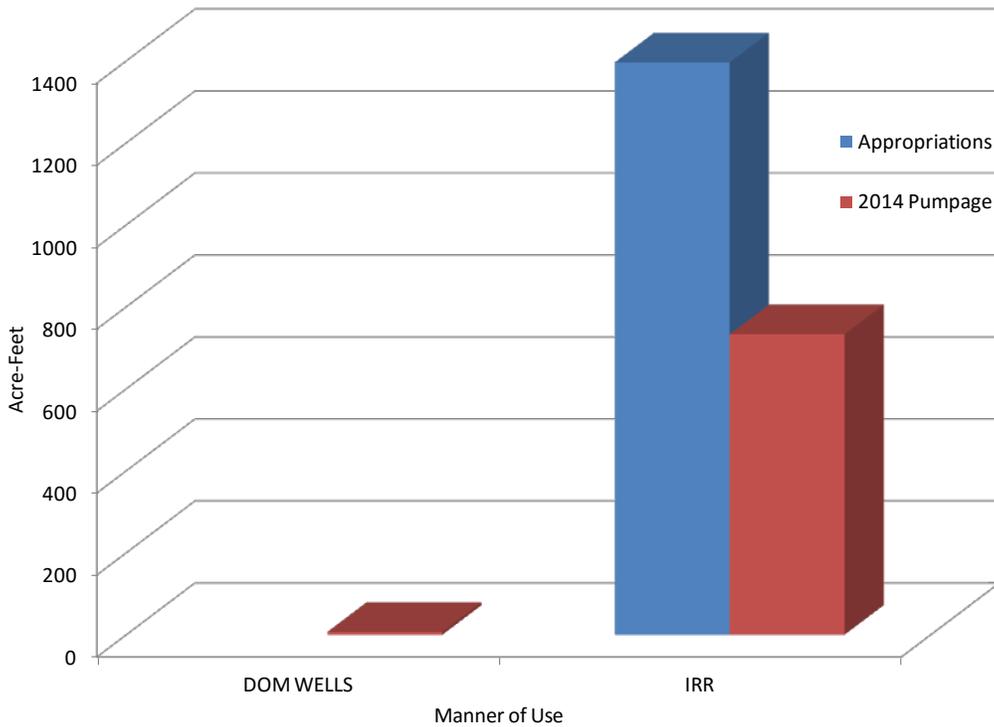


APPENDIX B. ROSE VALLEY PUMPAGE FOR WATER YEAR 2014.

PERCENTAGE OF GROUNDWATER PUMPAGE FOR WATER YEAR 2014 BY MANNER OF USE



GROUNDWATER PUMPAGE FOR WATER YEAR 2014 APPROPRIATIONS vs. ACTUAL PUMPAGE



**APPENDIX C. ROSE VALLEY GROUNDWATER PUMPAGE INVENTORY
FOR WATER YEAR 2014.**

EXPLANATION OF COLUMN HEADINGS FOR GROUNDWATER PUMPAGE INVENTORY

APP NUMBER	The file number of the Application or the Vested Claim of Right.																
STATUS	Indicates if the application is a Vested Claim of Right (VST), a Permit (Permit), or a Certificate (Cert).																
OWNER OF RECORD	The owner of the water right as recorded in the files of the State Engineer. A water right may have more than one owner of record.																
PLACE OF USE																	
QQ	The quarter quarter of the Section in which the point of diversion is located.																
Qtr	The quarter of the Section in which the point of diversion is located.																
Sec	The Section in which the point of diversion is located.																
T	The Township in which the point of diversion is located.																
R	The Range in which the point of diversion is located.																
ACRES OR DUTY	The number of acres that are permitted to be irrigated or the duty if the manner of use is anything other than irrigation.																
ACRES IRR OR USE	<p>The number of acres irrigated or the manner of use of the appropriated water. The types of manner of use may include:</p> <table border="0" style="width: 100%;"> <tr> <td>COM - Commercial</td> <td>CON - Construction</td> </tr> <tr> <td>DOM - Domestic</td> <td>ENV - Environmental</td> </tr> <tr> <td>IND - Industrial</td> <td>IRR - Irrigation</td> </tr> <tr> <td>MM - Mining & Milling</td> <td>MUN - Municipal</td> </tr> <tr> <td>OTH - Other</td> <td>PWR - Power</td> </tr> <tr> <td>QM - Quasi-Municipal</td> <td>REC - Recreation</td> </tr> <tr> <td>STK - Stockwater</td> <td>STO - Storage</td> </tr> <tr> <td>WLD - Wildlife</td> <td></td> </tr> </table>	COM - Commercial	CON - Construction	DOM - Domestic	ENV - Environmental	IND - Industrial	IRR - Irrigation	MM - Mining & Milling	MUN - Municipal	OTH - Other	PWR - Power	QM - Quasi-Municipal	REC - Recreation	STK - Stockwater	STO - Storage	WLD - Wildlife	
COM - Commercial	CON - Construction																
DOM - Domestic	ENV - Environmental																
IND - Industrial	IRR - Irrigation																
MM - Mining & Milling	MUN - Municipal																
OTH - Other	PWR - Power																
QM - Quasi-Municipal	REC - Recreation																
STK - Stockwater	STO - Storage																
WLD - Wildlife																	
USED (AF)	The amount of water used during the water year, in acre-feet, as determined by review of records and/or field investigation.																
REMARKS	Notes pertaining to field investigation and/or review of records.																

**GROUND WATER PUMPAGE INVENTORY
ROSE VALLEY, NO 199
2014**

NUMBER	STATUS	OWNER OF RECORD	PLACE OF USE				ACRES R OR DUTY	ACRES IRR OR USE	USED (A/F)	REMARKS	
			1/4	1/4	S	T					
11060	Cert	Nevada Ranches, LLC	NE	NE	21	1N	69	4.10	0.00	0.00	
20833	Cert	Nevada Ranches, LLC	NW	NE	21	1N	69	29.80	9.80		
20861	Cert		NE	NW				20.20	0.00		
			SW	NE				26.60	26.60		
			SE	NW				28.70	13.70		
			NW	SE				21.40	21.40		
			NE	SW				33.50	15.50		
			SW	SE				15.30	15.30		
			SE	SW				24.50	21.50		
			NE	NW	28			17.20	11.20		
		NW	NE				<u>6.30</u>	<u>6.30</u>			
		TOTAL					223.50	141.30	548.58	Alfalfa, NIWR = 3.3	
24199	Cert	Rosa, Jimmie	SE	NE	21	1N	69	1.50	0.00		
			SW	NE				3.14	3.14		
			NW	SE				18.60	17.60		
			NE	SE				3.90	3.90		
			SW	SE				17.00	17.00		
			NW	NE				<u>5.86</u>	<u>5.86</u>		
		TOTAL						50.00	47.50	184.41	Alfalfa, NIWR = 3.3
TOTAL									732.99	Permitted rights	

Verified with field notes Christi Cooper

**APPENDIX D. ROSE VALLEY GROUNDWATER PUMPAGE INVENTORY
FIELD NOTES FOR WATER YEAR 2014.**

2014

ROSE VALLEY

No. 199

Inventory Field Notes

compiled by
John Guillory, P.E. and Christi Cooper

State of Nevada
Division of Water Resources
Southern Nevada Branch Office

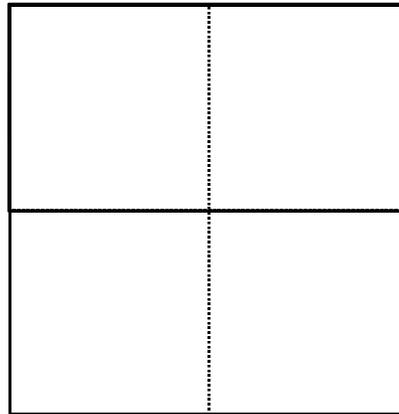
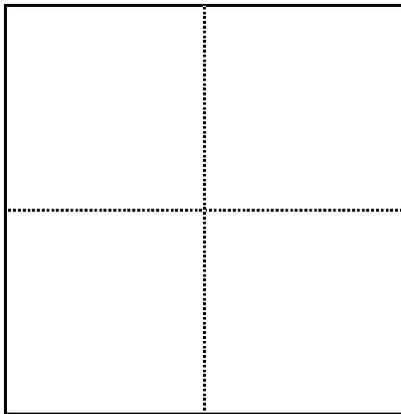
PUMPAGE INVENTORY FIELD REPORT

BASIN NO: 199 PERMIT NO: 11060, 20833, and 20861
 WELL: YES NO METER SER NO: _____
 PUMP: YES NO PUMP TYPE: Turbine
 MOTOR: YES NO MOTOR TYPE: _____
 METER: YES NO METER READ: _____
 PHOTO: YES NO ACRES IRR: See Page 2/2
 BENEFICIAL USE: YES NO PORTION ALL TYPE Irrigation

IF PARTIAL USE, SKETCH OF LAND IRRIGATED.

 1/4 1/4 SEC

 1/4 **SW** 1/4 SEC **16**



REMARKS: _____

SIGNATURE: Christi Cooper DATE: 10/14/2014

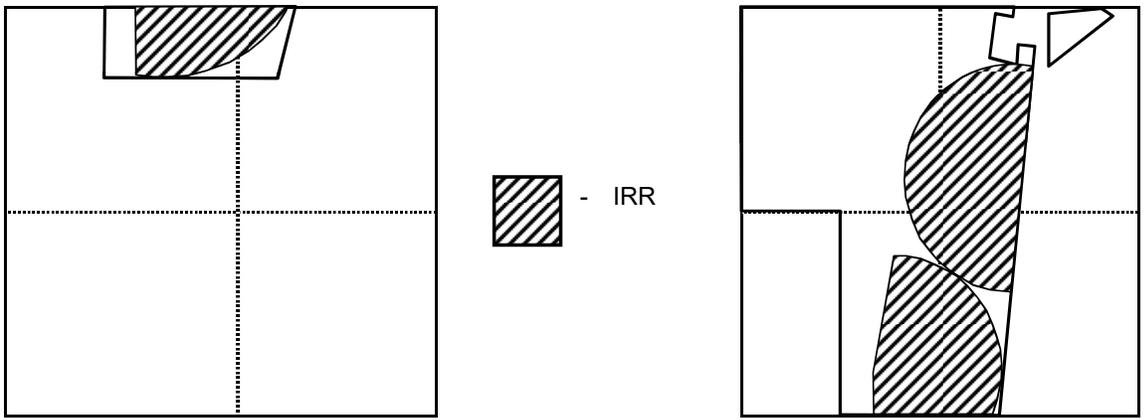
PUMPAGE INVENTORY FIELD REPORT

BASIN NO: 199 PERMIT NO: 11060, 20833, and 20861
 WELL: YES NO METER SER NO: _____
 PUMP: YES NO PUMP TYPE: Turbine
 MOTOR: YES NO MOTOR TYPE: _____
 METER: YES NO METER READ: _____
 PHOTO: YES NO ACRES IRR: 141.3
 BENEFICIAL USE: YES NO PORTION ALL TYPE Irrigation

IF PARTIAL USE, SKETCH OF LAND IRRIGATED.

 1/4 1/4 SEC **21**

 1/4 1/4 SEC **28**



REMARKS: 20833 POD no meter, pump pulled. Irrigating 2 pivots. Alfalfa.

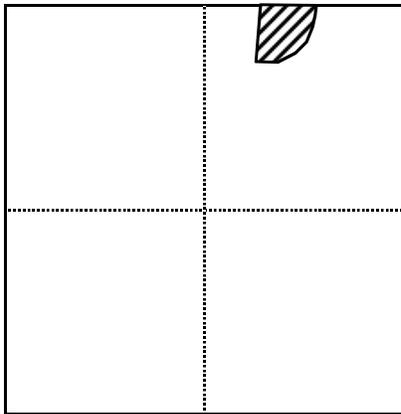
SIGNATURE: Christi Cooper DATE: 10/14/2014

PUMPAGE INVENTORY FIELD REPORT

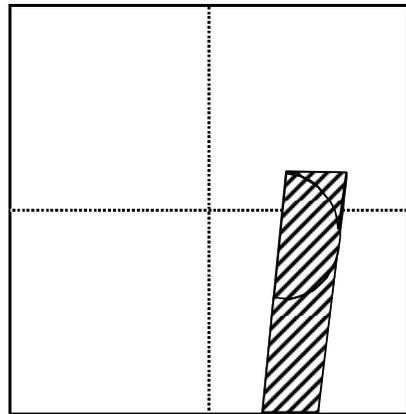
BASIN NO: 199 PERMIT NO: 24199
 WELL: YES NO METER SER NO: _____
 PUMP: YES NO PUMP TYPE: Turbine
 MOTOR: YES NO MOTOR TYPE: _____
 METER: YES NO METER READ: _____
 PHOTO: YES NO ACRES IRR: 47.5
 BENEFICIAL USE: YES NO PORTION ALL TYPE Irrigation

IF PARTIAL USE, SKETCH OF LAND IRRIGATED.

 1/4 1/4 SEC 21



 1/4 1/4 SEC 28



 - IRR

REMARKS: No meter. Alfalfa.

SIGNATURE: Christi Cooper DATE: 10/14/2014