STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WATER RESOURCES

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STATE ENGINEER

LAKE VALLEY
HYDROGRAPHIC BASIN 10-183

CROP INVENTORY

CALENDAR YEAR 2015

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ABSTRACT

This inventory represents the status and usage of all permitted, certificated, and claims of vested right groundwater rights for irrigation purposes located within Lake Valley, Hydrographic Basin 10-183, for the year 2015. **Only those groundwater rights associated with irrigation purposes are represented in this report**. For a listing and summary of all other manners of use within the basin please refer to the Nevada Division of Water Resources Hydrographic Basin Summary.

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

For the year 2015, the permitted and certificated groundwater rights for irrigation purposes totaled **4,897 acres** with a total duty of 16,699 acre-feet within Lake Valley. An estimated **4,568 acres** were irrigated and 13,751 acre-feet were pumped during 2015.

HYDROGRAPHIC BASIN SUMMARY

HYDROGRAPHIC BASIN NUMBER	183, REGION 10
HYDROGRAPHIC BASIN NAME	LAKE VALLEY
COUNTIES	LINCOLN AND WHITE PINE
MAJOR COMMUNITIES	CALIENTE AND PIOCHE
DESIGNATED BASIN	DESIGNATED
DENIALS BASED UPON WATER AVAILABILITY	2474, IRR DEN, 6/8/1971 2535, IRR DEN, 4/17/1980 2716, IRR DEN, 9/10/1981 5922, MUN AND DOM DEN, 1/9/2009
ESTIMATED IRRIGATION PUMPAGE 2015 (ACRE-FEET)	13,751 *

STATE ENGINEER'S ORDERS

NO. 726-DESIGNATION	JUNE 11, 1979

COMMITTED GROUNDWATER RESOURCE FOR IRRIGATION PURPOSES: 16,699 ACRE-FEET
DATE: DECEMBER 2015

NOTE: Committed groundwater resource data are accurate for December 2015. 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. Be advised this report acknowledges that other manner of uses may be present in the basin; however, only those groundwater rights associated with irrigation purposes are represented in this report.

* Acreage represented in this report may have surface water rights appurtenant. This report acknowledges those acres with surface water rights but is not intended to quantify, nor present any definitive use of those surface water rights. The data represent only the pumping of groundwater and the acreage to which it is applied.

PURPOSE AND SCOPE

The purpose of this report is to inventory all of the groundwater resources allocated to irrigation and described by the Office of the State Engineer, Nevada Division of Water Resources (NDWR), and to estimate the amount of groundwater pumped for irrigation purposes within the Lake Valley Hydrographic Basin (10-183), for the year 2015.

DESCRIPTION OF THE STUDY AREA

The Lake Valley Hydrographic Basin is located in eastern Nevada (Figure 1). Lake Valley occupies approximately 600 square miles in Lincoln and White Pine Counties. The adjacent hydrographic basins are Steptoe Valley (10-179) to the north, Cave Valley (10-180) and Dry Lake Valley (10-181) to the west, Patterson Valley (13-202) to the south, Spring Valley (13-201) to the southeast, Hamlin Valley (11-196) to the east and Spring Valley (10-184) to the northeast.

Lake Valley is bounded by the Schell Creek Range on the west, the Fairview Range to the southwest, the Wilson Creek Mountains to the southeast and the Fortification Range to the east. Lake Valley is approximately 15 miles wide by 40 miles long with basin elevations ranging from approximately 5,920 feet above mean sea level on the valley floor to approximately 10,990 feet at the peak of Mount Grafton. Irrigation is primarily located in the southern portion of the basin (Figure 2).

GROUNDWATER LEVELS

Depths to groundwater in Lake Valley are measured by NDWR on a semi-annual basis. Sites at which water level measurements are made and links to their data include:

183 N05 E66 03AAAA1	183 N05 E66 03DD	183 N05 E66 04DA 1
183 N05 E66 10DD 1	183 N05 E66 14BDAC1	183 N06 E65 01BCA 1
183 N06 E65 13CBBB1	183 N06 E66 10BD 1	183 N06 E66 19 1
183 N06 E66 22DC 1	183 N06 E66 27AC 1	183 N06 E66 27CAA 1
183 N06 E66 27DDDD1	183 N06 E66 30AB 1	183 N06 E66 33BA 01
183 N06 E66 33BABA1	183 N06 E66 34DA 1	183 N06 E66 35C 1
183 N06 E67 18CA 1	183 N07 E65 11CCBA1	183 N07 E65 14DD 1
183 N07 E65 17DAA 1	183 N07 E66 06CB 1	183 N07 E66 16DC 1
183 N07 E66 33DBCA1	183 N07 E66 36CACD1	183 N08 E65 02AC 1
183 N08 E65 02D 1	183 N08 E65 10CCCD1	183 N08 E65 12DB 1
183 N08 E65 26DB 1	183 N08 E66 10BCAC1	183 N08 E66 27BDDB2
183 N09 E65 01CDAA1	183 N09 E65 13CC 1	183 N09 E65 26AA 1
183 N09 E66 23BC 1	183 N09 E66 27DC 1	183 N09 E66 31DA 01
183 N10 E66 09AB 1	183 N10 E66 31AB 1	183 N10 E66 31BB 1
183 N10 E66 34BB 1		

Groundwater level data have also been collected by the U.S. Geological Survey (USGS) and can be accessed through their website (http://nevada.usgs.gov).

METHODS TO ESTIMATE IRRIGATED ACREAGE

This report estimates the number of acres irrigated by the groundwater pumped under permits, certificates, and claims of vested right issued by the State Engineer. Table 1 and Figure 3 present the current and historic irrigated acreage and pumpage; Appendix A presents estimates detailed by certificate, permit, or vested claim number. The following methods were used to arrive at the estimated acreage:

- Field inspection of the place of use was conducted to estimate the number of acres under cultivation.
- In cases where field inspection of the place of use was not practical, aerial and/or satellite imagery were analyzed to determine acreages.

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 in the Lake 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 lands were irrigated by both surface water and groundwater, the surface water supply for the irrigation season was considered in estimating groundwater pumpage.
- Beginning in 2013, meter readings were used to determine pumpage. Prior to 2013, pumpage was estimated to be equal to the full duty of the water right.

TABLES

Table 1. Lake Valley historical irrigated acreage and pumpage data.

Year	2010	2011	2012	2013	2014	2015
Acres Irrigated	4,868	4,709	4,747	4,607	4,559	4,568
Acre-Feet Pumped*	19,712	18,836	19,000	14,050	14,584	13,751

FIGURES

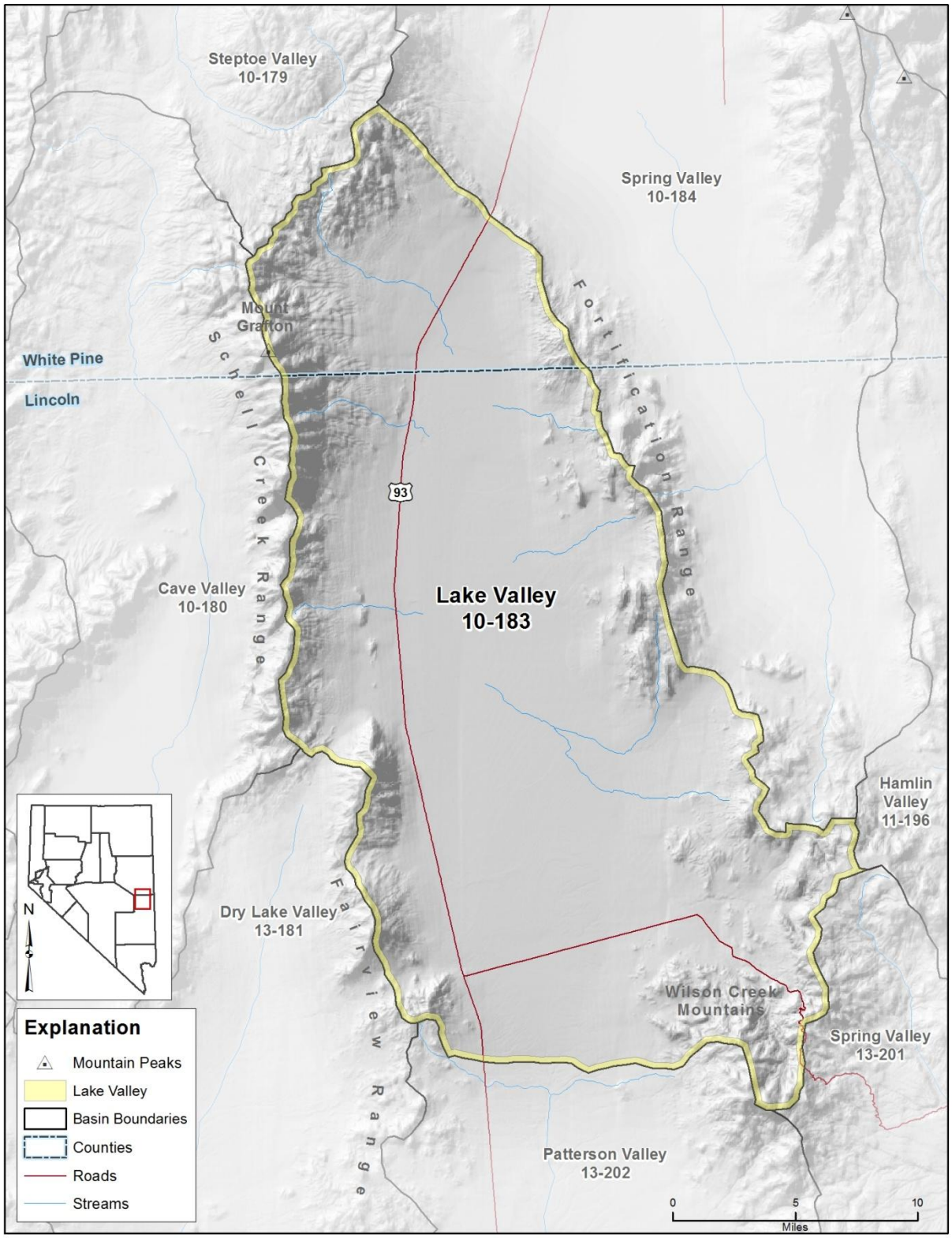

Figure 1. Physiographic map of Lake Valley (Hydrographic Basin 10-183).

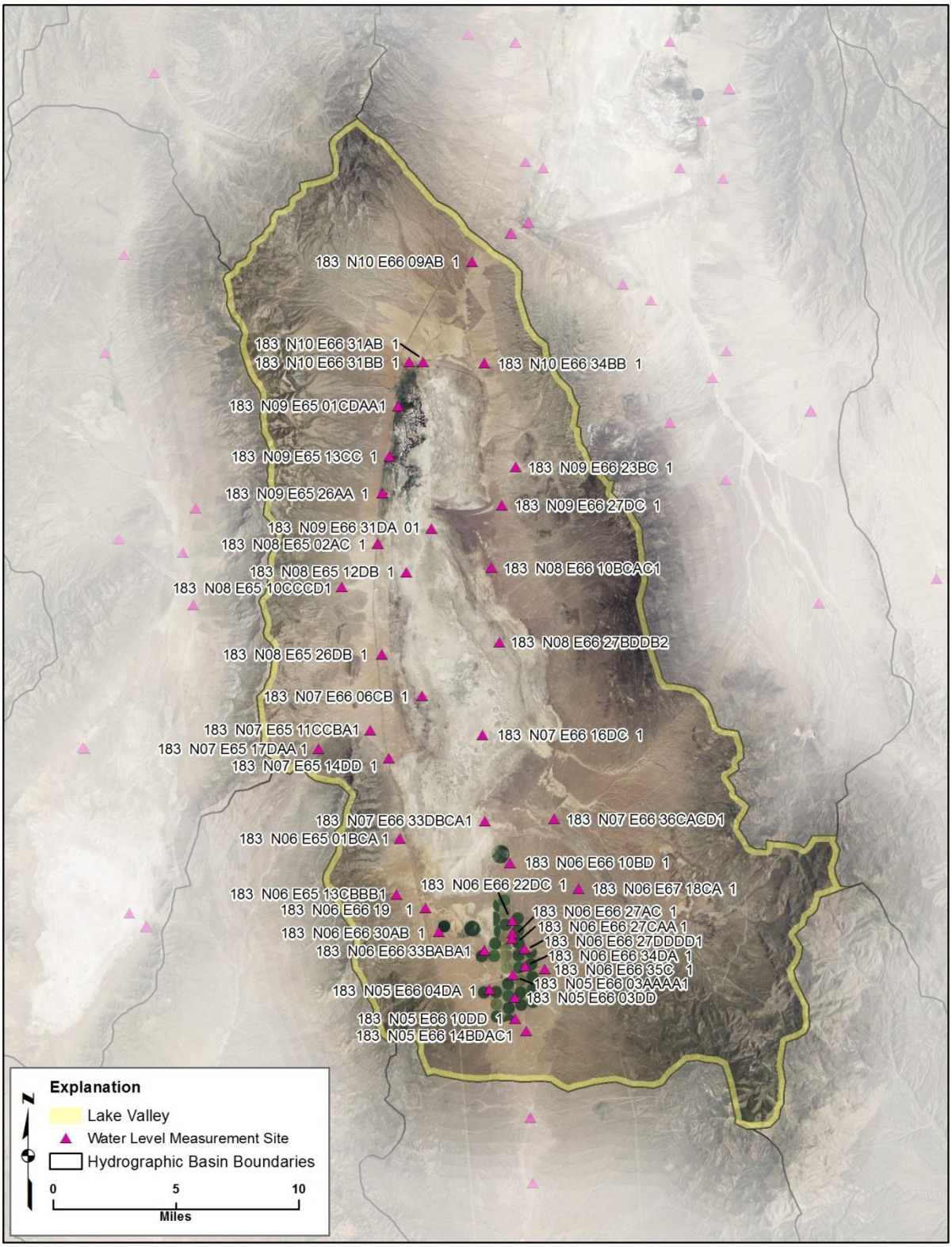

Figure 2. Map showing Lake Valley irrigated acreage and water level monitoring sites.

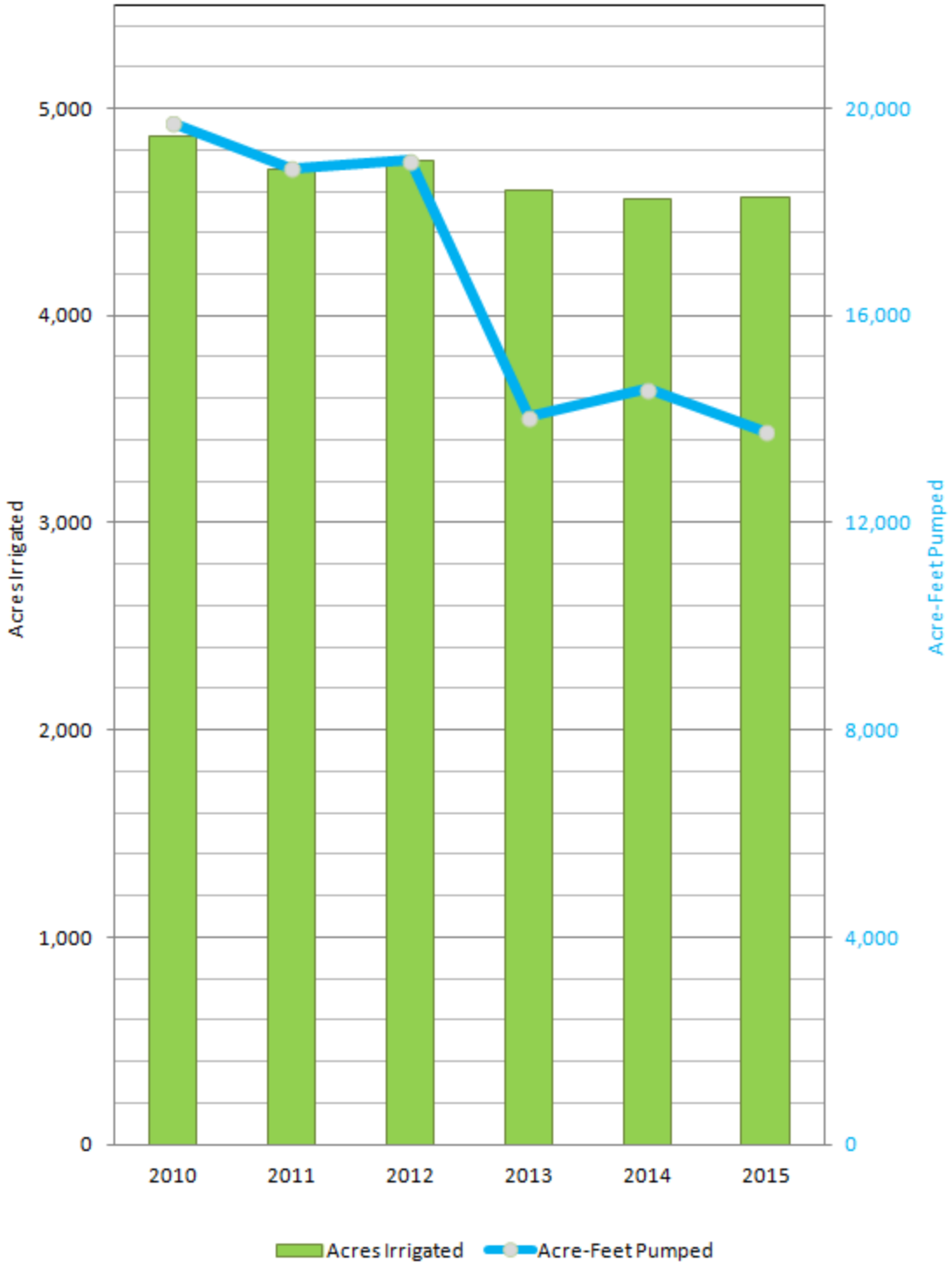

Figure 3. Graph showing Lake Valley historical irrigated acreage and pumpage.

APPENDIX A. 2015 LAKE VALLEY CROP INVENTORY.

EXPLANATION OF COLUMN HEADINGS

App No	The file number of the Application to Appropriate/Change Water or the Claim of Vested Right.
Status	Indicates the status of an application: Permit (PER), Certificated (CER), or a Claim of Vested Right (VST).
QQ	The quarter-quarter of the Section in which the point of diversion is located.
Q	The quarter of the Section in which the point of diversion is located.
Sec	The Section in which the point of diversion is located.
Twn	The Township in which the point of diversion is located.
Rng	The Range in which the point of diversion is located.
Sup	Indicates whether the groundwater right is part of a group of groundwater rights used to irrigate all or a portion of the same acreage (supplemental). A "Y" in this column signifies the groundwater right is supplemental to other groundwater rights.
Supplemental Application Number	The application number(s) of the water right(s) that are supplemental to one another.
Permitted Acres	The number of acres defined by the permit or certificate that is eligible to be irrigated.
Supplementally Adjusted Permitted Acres	The supplementally adjusted, total number of acres that is eligible to be irrigated under a supplemental group of water rights.
Permitted Duty Acre-Feet	The amount of water that may be pumped in a given year, or season, as defined by the permit, certificate, or claim of vested right. If there is a supplemental group, the total combined duty is listed as a supplementally adjusted duty.
Supplementally Adjusted Duty Acre-Feet	The supplementally adjusted, total combined duty that may be pumped in a given year, or season, for a supplemental group of water rights, expressed in acre-feet. The supplementally adjusted, total combined duty is listed at the end of a supplemental group in **bold**.
Owner of Record	The owner of the water right as recorded in the records of the State Engineer. A water right may have more than one owner of record. Only the first, alphabetically, is listed in this table.
Crop Type	Indicates whether or not a crop was in production during the water year. If a crop was in production, the common name description of the plants under cultivation if given (e.g. alfalfa).

NIWR (ft)	Net Irrigation Water Requirement, defined to be equal to the annual crop evapotranspiration less the effective precipitation entering the root zone that is available for evaporation or transpiration.
Irrigation Method	The method by which the water is applied to the crop and ground (e.g. pivot).
Irrigation Efficiency	The estimated efficiency of the desired irrigation method used.
Irrigated Acreage	The estimate of the number of acres irrigated associated with a particular water right.
Acreage Estimation Method	The method by which the number of acres irrigated was determined. F – Field inspection. I – Aerial or satellite imagery.
Acre-Feet Pumped	The estimate of the amount of water pumped under a particular water right, expressed in acre-feet. One acre-foot equals 325,851 gallons.
Pumpage Estimation	The method used to estimate the amount of water pumped. M – Totalizing meter readings. N – NIWR Method.
Remarks	Additional information. Numbers in this column correspond to footnotes at the end of the table.

2015 LAKE VALLEY CROP INVENTORY

App No	Status	QQ	Q	Sec	Twn	Rng	Sup	Supplemental Application Number	Permitted Acres	Supplementally Adjusted Permitted Acres	Permitted Duty Acre-Feet	Supplementally Adjusted Duty Acre-Feet	Owner of Record	Crop Type	Crop NIWR (ft)	Irrigation Method	Irrigation Efficiency (%)	Irrigated Acres	Acreage Estimation Method	Acre-Feet Pumped	Pumpage Estimation Method	Remarks
15771	CER	SW	SE	1	09N	65E			140.95	140.95	563.81	563.80	NEVADA RANCHES, LLC	No Crop		No Crop	N/A	0.00	F-I	0.00		
59109	CER	NE	SW	03	05N	66E	Y	60014 63334	125.75	125.75	319.00	503.04	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	120.00	F-I	385.11	M	AFA
60014	CER	NE	SW	03	05N	66E	Y	59109 63334	125.75	--	161.04	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
63334	CER	NE	SW	03	05N	66E	Y	59109 60014	125.75	--	23.00	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
									Total	**125.75**	**Acres**	**503.04**	**Acre-Feet**				**Total**	**120.00**	**Acres**	**385.11**	**Acre-Feet**	
59115	CER	NW	SE	02	05N	66E	Y	63116 63339	116.00	126.26	325.79	505.04	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	126.00	F-I	399.38	M	AFA
63116	CER	NW	SE	02	05N	66E	Y	59115 63339	82.77	--	154.21	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
63339	CER	NW	SE	02	05N	66E	Y	59115 63116	82.77	--	25.04	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
									Total	**126.26**	**Acres**	**505.04**	**Acre-Feet**				**Total**	**126.00**	**Acres**	**399.38**	**Acre-Feet**	
59123	CER	NE	NE	33	06N	66E	Y	60016 63338	126.05	126.05	226.40	504.20	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	123.00	F-I	184.25	M	AFA
60016	CER	NE	NE	33	06N	66E	Y	59123 63338	126.05	--	253.60	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
63338	CER	NE	NE	33	06N	66E	Y	60016 59123	126.05	--	24.20	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
									Total	**126.05**	**Acres**	**504.20**	**Acre-Feet**				**Total**	**123.00**	**Acres**	**184.25**	**Acre-Feet**	
63114	CER	NW	NE	11	05N	66E	Y	63118 79130	126.16	126.16	203.91	504.64	NEVADA RANCHES, LLC	Alfalfa	3	pivot	85%	126.00	F-I	395.66	M	AFA
63118	CER	NW	NE	11	05N	66E	Y	63114 79130	126.16	--	101.96	--	NEVADA RANCHES, LLC	Alfalfa	3	pivot	85%	--		--		
79130	PER	NW	NE	11	05N	66E		63114 63118	126.16	--	198.77	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
									Total	**126.16**	**Acres**	**504.64**	**Acre-Feet**				**Total**	**126.00**	**Acres**	**395.66**	**Acre-Feet**	
72278	PER	SE	NW	10	06N	66E	Y	72279	285.30	285.30	605.50	1,262.30	NEVADA RANCHES, LLC	Grass Hay	2.7	Pivot	85%	280.00	F-I	750.21	M	AFA
72279	PER	SE	NW	10	06N	66E	Y	72278	285.30	--	656.80	--	NEVADA RANCHES, LLC	Grass Hay	2.7	Pivot	85%	--		--		
									Total	**285.30**	**Acres**	**1,262.30**	**Acre-Feet**				**Total**	**280.00**	**Acres**	**750.21**	**Acre-Feet**	
74090	PER	SW	SE	28	06N	66E	Y	74091 74555	117.62	117.62	231.44	470.48	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	123.00	F-I	461.90	M	AFA
74091	PER	SW	SW	28	06N	66E	Y	77090 74555	117.62	--	93.44	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
74555	PER	SW	SE	28	06N	66E	Y	74090 74091	117.62	--	145.60	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	--		--		
									Total	**117.62**	**Acres**	**470.48**	**Acre-Feet**				**Total**	**123.00**	**Acres**	**461.90**	**Acre-Feet**	
75468	PER	NW	SW	22	06N	66E	Y	75469 75526	235.38	235.38	219.69	941.52	NEVADA RANCHES, LLC	Grass Hay	2.7	Pivot	85%	63.00	F-I	937.16	M	AFA
75469	PER	NW	SW	22	06N	66E	Y	75468 75526	235.38	--	401.83	--	NEVADA RANCHES, LLC	Grass Hay	2.7	Pivot	85%	86.00	F-I	--		
75526	PER	NW	SW	22	06N	66E	Y	75468 75469	235.38	--	320.00	--	NEVADA RANCHES, LLC	Grass Hay	2.7	Pivot	85%	67.00	F-I	--		
									Total	**235.38**	**Acres**	**941.52**	**Acre-Feet**				**Total**	**216.00**	**Acres**	**937.16**	**Acre-Feet**	
79104	PER	NW	NE	30	06N	66E			126.00	126.00	504.00	11,300.00	NEVADA RANCHES, LLC	Potatoes	2.4	Pivot	85%	119.00	F-I	471.23	M	AFA
79105	PER	NW	NW	29	06N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Grass Hay	2.7	Pivot	85%	122.00	F-I	189.40	M	AFA
79106	PER	SE	NW	29	06N	66E			200.00	200.00	800.00	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	200.00	F-I	694.27	M	AFA
79107	PER	SE	SE	03	05N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Alfalfa	3	pivot	85%	120.00	F-I	213.11	M	AFA
79108	PER	NW	SW	02	05N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	115.00	F-I	451.42	M	AFA
79109	PER	SE	NW	02	05N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Potatoes	2.4	Pivot	85%	126.00	F-I	151.76	M	AFA
79110	PER	SE	NE	03	05N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	121.00	F-I	452.00	M	AFA
79111	PER	NE	SE	34	06N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	122.00	F-I	184.68	M	AFA
79112	PER	SE	SW	34	06N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Potatoes	2.4	Pivot	85%	117.00	F-I	198.56	M	AFA
79113	PER	NE	NW	34	06N	66E			189.00	189.00	756.00	--	NEVADA RANCHES, LLC	Potatoes	2.4	Pivot	85%	178.00	F-I	390.43	M	AFA
79114	PER	SE	SE	27	06N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	124.00	F-I	321.05	M	AFA
79115	PER	SE	NW	22	06N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Potatoes	2.4	Pivot	85%	126.00	F-I	361.32	M	AFA
79116	PER	NE	NW	22	06N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Grass Hay	2.7	Pivot	85%	124.00	F-I	250.49	M	AFA
79117	PER	SE	NE	10	05N	66E			126.35	126.35	505.40	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	123.00	F-I	354.46	M	AFA
79118	PER	NE	NW	10	05N	66E	Y		125.17	125.17	500.68	--	NEVADA RANCHES, LLC	Potatoes	2.4	Pivot	85%	120.00	F-I	271.67	M	AFA
79119	PER	NW	NW	11	05N	66E			125.80	125.81	503.24	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	123.00	F-I	399.01	M	AFA
79120	PER		LT06	02	05N	66E			127.08	127.08	508.32	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	120.00	F-I	453.12	M	AFA
79121	PER	NE	SE	04	05N	66E			125.98	125.98	503.92	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	126.00	F-I	394.69	M	AFA
79122	PER	NW	SW	35	06N	66E			126.22	126.22	504.88	--	NEVADA RANCHES, LLC	Alfalfa	3	pivot	85%	121.00	F-I	414.87	M	AFA
79123	PER	NW	NW	35	06N	66E			84.92	84.92	339.68	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	78.75	F-I	319.17	M	AFA
79124	CER	SW	NE	34	06N	66E			125.36	125.36	501.44	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	120.00	F-I	459.91	M	AFA
79125	PER	NE	NW	33	06N	66E			125.86	125.86	503.44	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	120.00	F-I	446.18	M	AFA
79126	PER	NE	SW	27	06N	66E			125.32	125.32	501.27	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	118.00	F-I	259.17	M	AFA
79127	PER	SW	SE	22	06N	66E			125.84	125.84	503.36	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	123.00	F-I	391.78	M	AFA
79128	PER	SW	NE	27	06N	66E			125.04	125.04	500.16	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	123.00	F-I	487.61	M	AFA
79129	PER	SE	SE	10	05N	66E			76.03	76.03	304.12	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	73.00	F-I	310.52	M	AFA
79131	PER	NE	SW	10	05N	66E			125.84	125.84	503.09	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	125.00	F-I	450.79	M	AFA
79637	PER	SE	NW	27	06N	66E			126.00	126.00	504.00	--	NEVADA RANCHES, LLC	Alfalfa	3	Pivot	85%	126.00	F-I	494.89	M	AFA
									Total	**3,571.82**	**Acres**	**11,300.00**	**Acre-Feet**				**Total**	**3,453.75**	**Acres**	**10,237.53**	**Acre-Feet**	
82291	PER	NE	SE	36	10N	65E			41.99	41.99	143.84	143.84	NEVADA RANCHES, LLC	No Crop		well not pumped	N/A	0.00	F-I	0.00		
									TOTAL:	**4,897.28**	**Acres**	**16,698.86**	**Acre-Feet**				**Total:**	**4,567.75**	**Acres**	**13,751.20**	**Acre-Feet**	