

STATE OF NEVADA
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WATER RESOURCES

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STATE ENGINEER



ANTELOPE VALLEY (HYDROGRAPHIC AREA 9-106)

GROUNDWATER PUMPAGE INVENTORY

WATER-YEAR 2008

By: Brandy Martinelli, NDWR

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PURPOSE AND SCOPE

This report is an effort by the Nevada Division of Water Resources to better understand the hydrology of Antelope Valley, hydrographic area 9-106. This is a part of the continuing effort to document groundwater usage in the valley.

The purpose of this report is to detail and inventory the groundwater resources as allocated and described by the Office of the State Engineer, Nevada Division of Water Resources and estimate the amount of groundwater pumped within the Nevada portion of the Antelope Valley Hydrographic Basin for the water year 2008, beginning October 1, 2007, and ending September 30, 2008 (hereafter referred to as the 2008 water year).

DESCRIPTION OF THE STUDY AREA

Antelope Valley is located in west central Nevada and east central California. This report deals exclusively with the Nevada portion of this valley. The Nevada portion of this basin occupies approximately 115 square miles in Douglas County, and a small portion of Lyon County. The adjacent hydrographic areas are Smith Valley (9-107) to the east and Carson Valley (8-105) to the northwest (see Figure 1); the exterior boundary of the Antelope Valley hydrographic basin 106 is as described by Designation Order 714 issued by the Nevada State Engineer dated May 25, 1978.

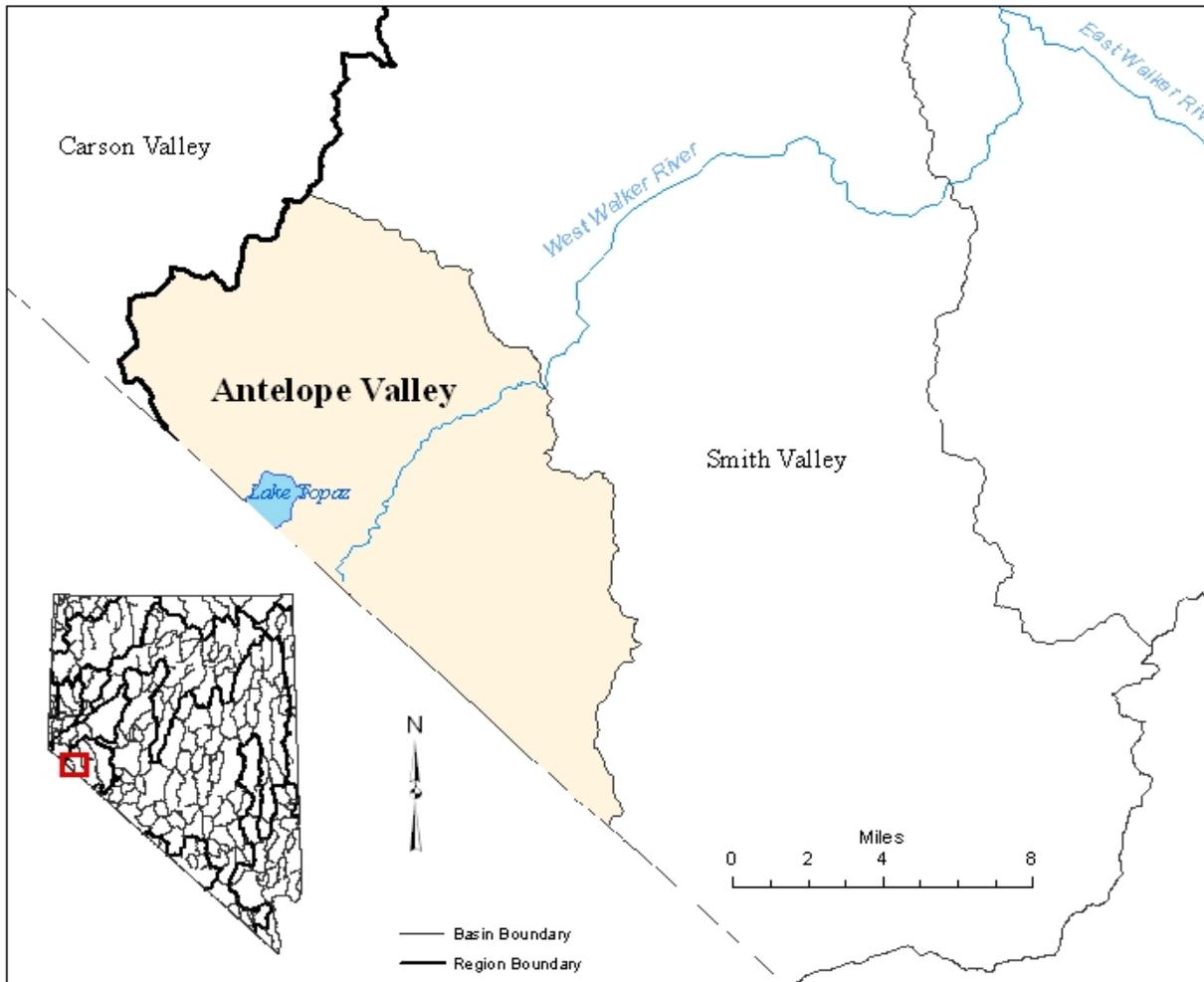
Antelope Valley is bounded on the north by the Pinenut Range that rises to elevations greater than 9,000 feet, and on the east by the Sweetwater Mountains, rising to elevations greater than 10,000 feet (all elevations in this text are above mean sea level). Antelope Valley as a whole is bound by the Sierra Nevada to the west. Although the range does not lie directly within the Nevada part of Antelope Valley, the Sierra Nevada exerts a strong climatic control throughout the entire Antelope Valley. Surface water drainage from this mountain system also dominates the annual streamflow of the West Walker River.

HYDROLOGY

The dominant hydrologic features of Antelope Valley are the West Walker River and Topaz Lake. Topaz Lake is a man-made reservoir located on the California-Nevada border. The lake was formed by diverting waters from the West Walker River into a nearby basin that had previously contained a smaller, natural lake. The initial construction took place in 1922, resulting in a reservoir with a capacity of 45,000 acre-feet. In 1937 a new levee raised the capacity to its current 59,440 acre-feet, with an average area of 1,790 acres (Glancy 1971 pg.14). The maximum content of the reservoir during the 2008 water year was 27,800 acre-feet on June 23, 2008 and the minimum content of the reservoir was 5,770 acre-feet on December 16, 2007 (USGS, Water-Data Report WDR-US-2008). The average annual rainfall at Topaz Lake is 8.8 inches (WRCC, Western U.S. Climate Historical Summaries).

The U.S. Geological Survey (USGS) operates a streamflow gaging station near the location at which the West Walker River enters Antelope Valley, (USGS site #10296500 West Walker River near Coleville CA). This gage is located in the NE ¼ NE ¼ section 28, Township 08 North, Range 23 East. The period of record is Oct. 1902-July 1908; March 1909- September

Figure 1.
Location Map of Antelope Valley Groundwater Basin 9-106



1910; June 1915 – March 1938; May 1957 to the current year. The annual run-off at this station for calendar year 2007 was 98,150 acre-feet, and in water year 2008 was 131,500 acre-feet. The average run-off from 1903 - 2008 is 202,900 acre-feet annually. (USGS, Water-Data Report WDR-US-2008)

The USGS also operates a streamflow gaging station near the location at which the West Walker River exits Antelope Valley, (USGS site #10297500 West Walker River at Hoye Bridge, near Wellington NV). The gage is located in the NE ¼ SE ¼ section 17, Township 10 North, Range 23 East. The period of record is May to August 1910, July 1920 to September 1923, March 1924 to August 1925, October 1925 to September 1932, October 1957 to current year. The average annual run-off at this station for calendar year 2007 was 85,680 acre-feet, and in water year 2008 was 100,400 acre-feet. The average run-off from 1910 - 2008 is 178,300 acre-feet annually (USGS, Water-Data Report WDR-US-2008).

RECHARGE

Most precipitation falls during the winter months, and typically the amounts increase with altitude. Some precipitation falls as rain, but winter snow generally accumulates in large amounts in the higher mountain areas. Precipitation for the 2008 water year was 91 percent of average and in the 2007 water year precipitation was 59 percent of average (NRCS, NV Basin Outlook Report for Walker River Basin).

Glancy in *Reconnaissance Report 53* estimated the annual groundwater recharge from precipitation within the Nevada part of Antelope Valley at 5,000 acre-feet per year (Glancy 1971 pg.30).

Nowlin in *Open File Report 78-768* estimated the perennial yield at 2,600 acre-feet of water (Nowlin 1986 pg. 195).

GROUNDWATER LEVELS

A groundwater level-monitoring network was instituted as part of the fieldwork done for the inventory. The network consists of twelve sites at the following locations (see Figure 2):

- [106 10N 22E 10 DACCI](#)
- [106 10N 22E 12 CADD1](#)
- [106 10N 22E 12 CDCC1](#)
- [106 10N 22E 15 ADC1](#)
- [106 10N 22E 15 DCBB1](#)
- [106 10N 22E 22 BAB1](#)
- [106 10N 22E 22 BDAC1](#)
- [106 10N 22E 24 BBCA1](#)
- [106 10N 22E 25 BDAC1](#)
- [106 10N 22E 26 ABCD1](#)
- [106 10N 22E 28 DDBC1](#)
- [106 10N 23E 19 BABA1](#)

Water level measurements are conducted on a semi-annual basis, and when additional sites are identified, they will be incorporated into the network. Water level data can be obtained from the Division of Water Resources or at <http://water.nv.gov>.

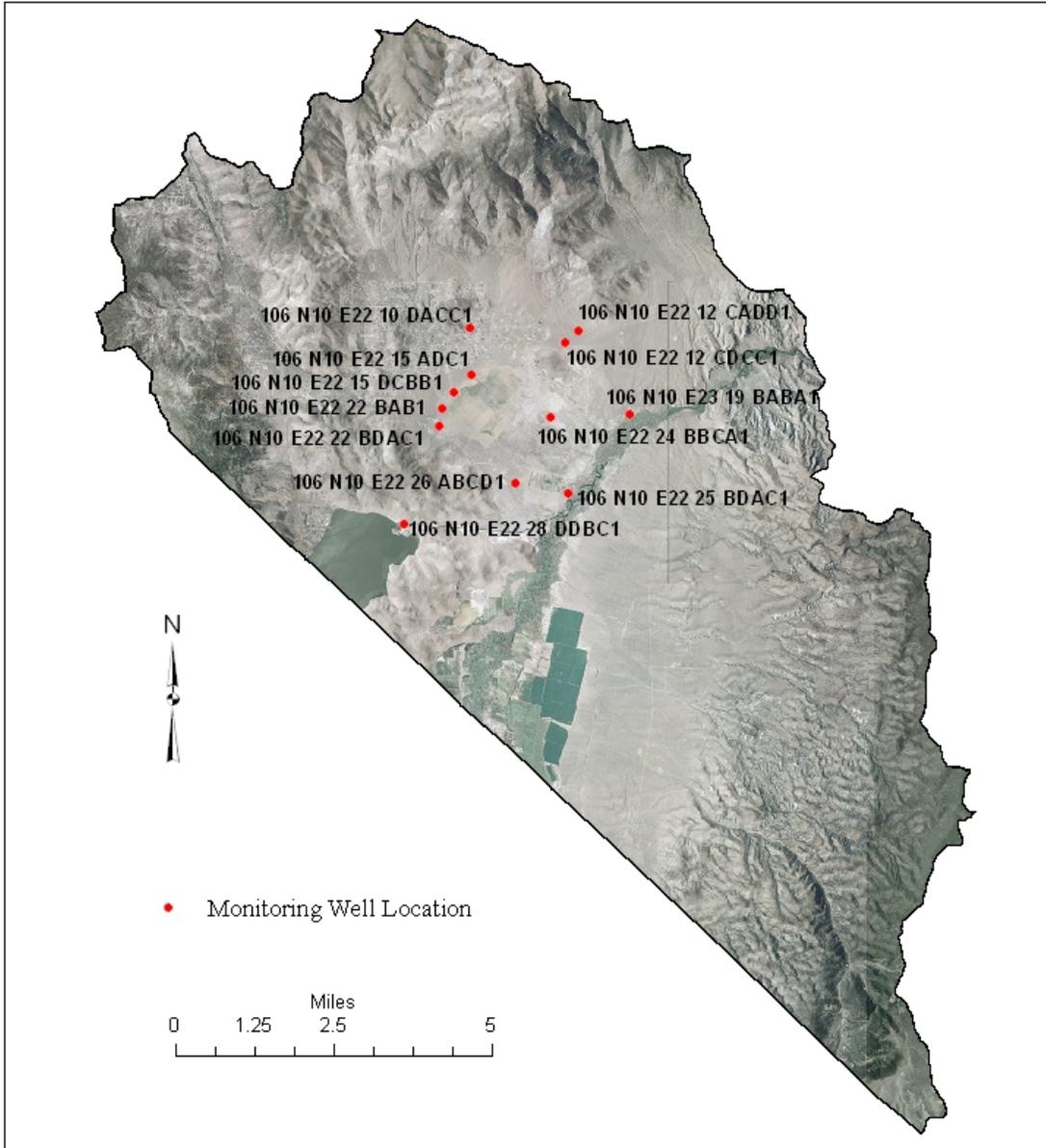
BASIC DATA AND PROCEDURES

This report estimates the amount of groundwater pumped under claims of vested right and the permits and certificates issued by the State Engineer, as well as the amount pumped by domestic wells in the valley. 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, use was estimated by taking the number of hours the well was operated during the past year (determined from an hour meter reading or talking with the water user) and expanding it out by the certificated diversion rate; or a survey of the place of use was done to estimate the

Figure 2.

Location Map of Antelope Valley Groundwater Level-Monitoring Network



amount of acreage under cultivation. The number of acres under cultivation would then be multiplied by a duty of 4 acre-feet per acre to estimate the use.

- Where meters were not present, previous data was not available and the use was not irrigation, use was estimated by applying the annual duty associated with the certificate (if the water right is perfected) or permit if the usage was as described in the certificate or permit; if the use was not as described in the certificate or permit then a value was estimated based on actual usage.
- If there was no use of the water under the permit, zero use was recorded.

- The primary water purveyor for Antelope Valley is the Topaz Ranch Estates General Improvement District (TRE-GID). This entity provides the Office of the State Engineer with quarterly pumping totals as a condition of the permits, under which the water was appropriated. This data was used to determine the amount pumped for the TRE-GID.
- The amount of water pumped by individual domestic wells was estimated by multiplying the number of domestic wells in the valley by a factor of 1 acre-foot. Domestic wells are defined by Nevada Revised Statutes 534.013 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 domestic wells in the valley was estimated from the records of the State Engineer at approximately 309. The number of wells was determined by a query of the Nevada Division of Water Resources’ Well Log Database.

Note that all data herein are estimates and subject to revision.

The total estimated groundwater pumpage for the water year 2008 was **3,388 acre-feet**. The annual duties of permitted, certificated and claims of vested rights within the Antelope Valley hydrographic area total approximately **6,435 acre-feet**. The permitted and pumped totals, categorized by manner of use, are as follows (see graphs in Appendix A):

A. Quasi-Municipal

A total of 984 acre-feet have been granted for quasi-municipal purposes in the basin. An estimated 323 acre-feet were pumped during water year 2008.

B. Irrigation

A total of 967 acres were irrigated during the water year 2008. The duty granted for the irrigation is 5,316 acre-feet, and an estimated 2,714 acre-feet were pumped during water year 2008.

C. Recreation

A total of 24 acre-feet have been granted for recreational purposes in the basin. An estimated 6 acre-feet were pumped during water year 2008.

D. Commercial

One hundred and nine acre-feet have been granted for commercial purposes in the basin. An estimated 37 acre-feet were pumped during water year 2008.

E. Domestic

Two acre-feet have been granted for domestic purposes, however; the amount of water pumped for domestic use is estimated at 309 acre-feet during the water year 2008.

HYDROGRAPHIC AREA SUMMARY

HYDROGRAPHIC AREA NUMBER	106, REGION 9
HYDROGRAPHIC AREA NAME	ANTELOPE VALLEY
COUNTIES	DOUGLAS, LYON
MAJOR COMMUNITIES	TOPAZ RANCH ESTATES, HOLBROOK JUNCTION, TOPAZ LAKE
DESIGNATED	YES
DENIALS BASED UPON WATER AVAILABILITY	IRRIGATION, COMMERCIAL, QUASI- MUNICIPAL
GROUNDWATER LEVEL MEASUREMENTS	NDWR
PUMPAGE INVENTORY, ACRE-FEET IN 2008	3,388
YIELD, ACRE-FEET ANNUALLY	
USGS OPEN FILE REPORT 78-768	2,600
USGS WRRS REPORT 53	5,000
STATE ENGINEER'S ORDERS	714 – DESIGNATION DATE: MAY 25, 1978
COMMITTED GROUNDWATER RESOURCE: 6,435 ACRE-FEET, DATE: SEPT. 2008	
IRRIGATION.....	5,316 COMMERCIAL.....109 DOMESTIC.....2
RECREATIONAL.....	24 QUASI-MUNICIPAL...984

COMMENTS:

- Domestic use, as defined by NRS 534.180, totals approximately 309 acre-feet for Water Year 2008. The domestic use estimate is based upon a count of the domestic wells in the basin multiplied by 1 acre-foot per annum. The number of domestic wells in the basin was estimated by a query of the Nevada Division of Water Resources' Well Log Database and is approximately 309.
- The numbers associated with the committed groundwater resources represent the status for the time frame stated, September 2008. Manner of use category totals vary over time, as rights are not necessarily static. Rights may be subject to change applications, certification, withdrawals, and cancellations; each of these circumstances would impact the duty, diversion rate and acreage associated with a given right. The value associated with each manner of use category does not include those portions that have been relinquished in support of domestic wells. A total of 129.26 acre-feet have been relinquished in the basin.

REFERENCES CITED

Glancy, Patrick A., 1971, Water-Resources Appraisal of Antelope Valley and East Walker Area, Nevada and California: Water Resources-Reconnaissance Series Report 53, p. 14, 30.

Nowlin, Jon O., 1986, Ground-Water Quality in Nevada - A Proposed Monitoring Program: U.S. Geological Survey Open File Report 78-768, p. 195.

Department of the Interior, U.S. Geological Survey. Water-Data Report WDR-US-2008. [Online] 23 April 2009. <<http://wdr.water.usgs.gov/wy2008/search.jsp>>.

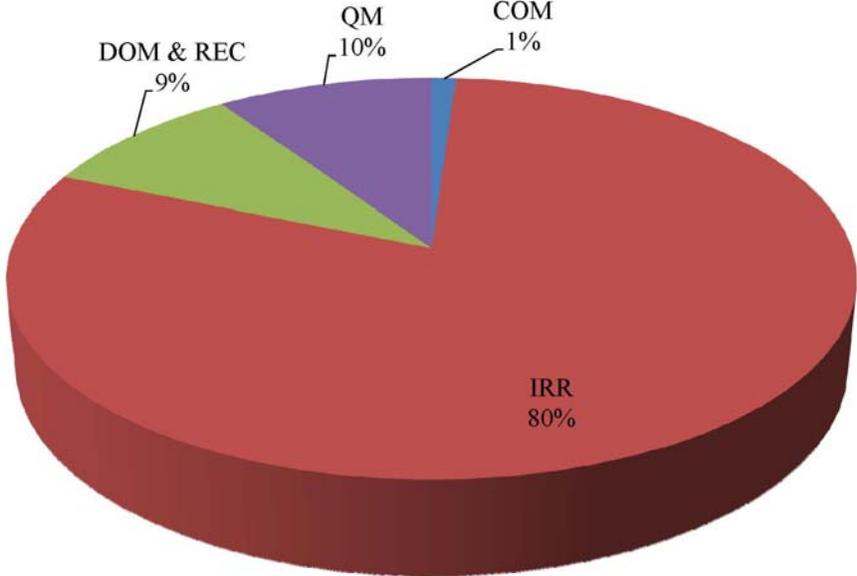
U.S. Department of Agriculture, Natural Resources Conservation Service. "Nevada Basin Outlook Report for Walker River Basin." [Online] 20 January, 2009. <<http://www.wcc.nrcs.usda.gov/cgibin/newbor2.pl?state=nv&year=2008&month=5&basin=23>>

Western Regional Climate Center. "Western U.S. Climate Historical Summaries." [Online] 19 June, 2009. <<http://www.wrcc.dri.edu/Climsum.html>>

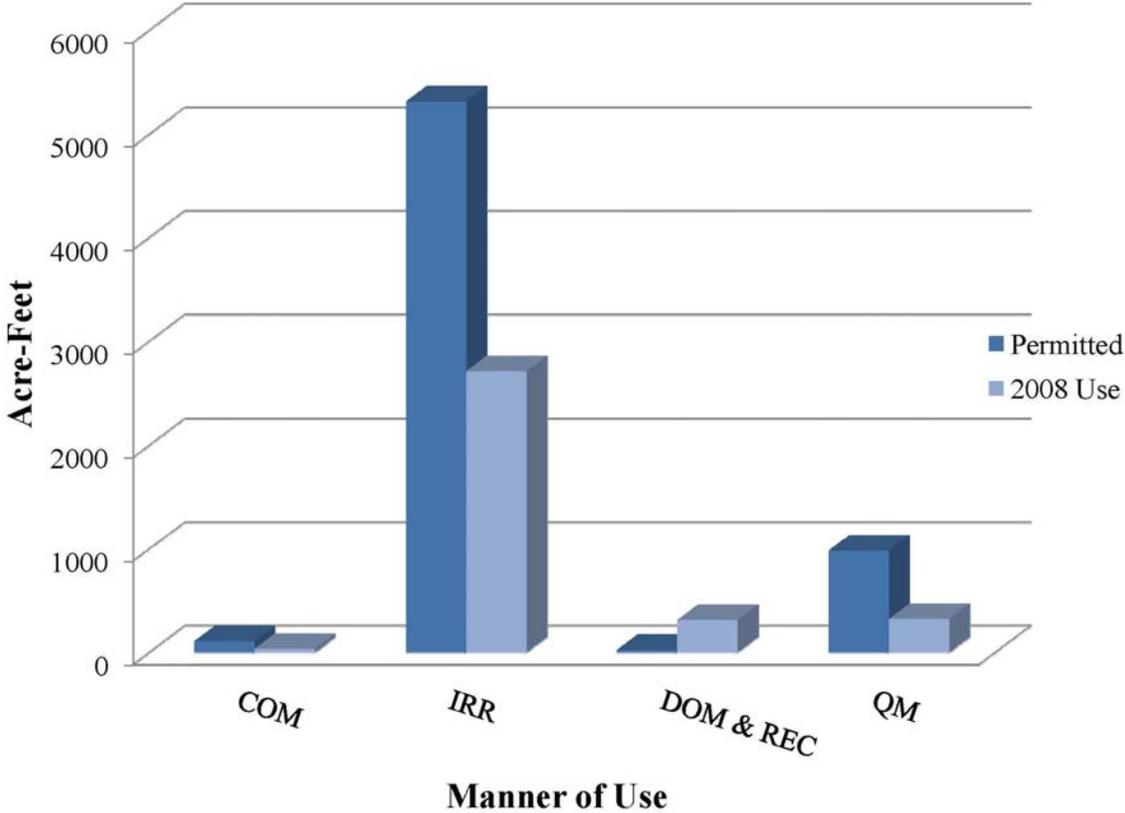
APPENDIX A

ANTELOPE VALLEY GROUNDWATER USE FOR 2008 BY MANNER OF USE

PERCENTAGE OF GROUNDWATER USE 2008 BY MANNER OF USE



GROUNDWATER USE 2008 PERMITTED vs. ACTUAL USAGE



APPENDIX B

ANTELOPE VALLEY GROUNDWATER USE FOR 2008 BY PERMIT NUMBER

Explanation of Column Headings for Groundwater Use by Permit Number

UNIQUE IDENTIFIER	An ID assigned to each well, based on its geographic location.
APP NO.	The file number of the Application to Appropriate/Change Water.
STATUS	Indicates if the application is a Permit (PER) or if it has been certificated. If an application has been certificated, the Certificate number will be listed in the column.
MOU	The manner of use of the appropriated water. COM - Commercial DOM - Domestic IRR - Irrigation QM - Quasi-Municipal REC - Recreational
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.
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.
PER ACRES	
IRR	The number of acres that are permitted to be irrigated.
DUTY (AF)	The number of acre-feet of water that the permittee may pump. An acre-foot equals 325,851 gallons.
SUPP ADJ	Where more than one permit is appurtenant to the same place of use, the permits are considered supplemental. Permits may be either completely or partially supplemental. In these cases, a total combined duty for the subject permits is employed.
DUTY USED	The amount of water used during water-year 2008, in acre-feet, as determined by review of records and/or field investigation.
UNIT	AFA stands for acre-feet annually, and AFS stands for acre-feet seasonally. AFS limits water usage to certain months out of the year.
SUPP SRC	The source of the supplemental water; UG means underground, WR stands for Walker River.
SUPP GW APP NO.	The file number(s) of any supplemental ground water appropriations.

UNIQUE IDENTIFIER	APP NO.	STATUS	MOU	OWNER OF RECORD	QQ	QTR	SEC	T	R	PER ACRES	DUTY	SUPP	DUTY	UNIT	SUPP	SUPP GW
										IRR	(AF)	ADJ	USED		SRC	APP NO.
106 N10 E23 19BABA1	13013	04928	IRR	MATHEWSON, CHARLES N. TRUST	NE	NW	19	10N	23E	49.85	74.78	74.78	4.34	AFA		
106 N10 E22 29DCCC1	16425	05398	QM	TOPAZ LODGE INC.	SW	SE	29	10N	22E		6.44	16.14	6.44	AFA		53073
106 N10 E22 22ADAD1	16789	05732	IRR	ALLRED, EVAN L.	SE	NE	22	10N	22E	28.60	114.40	114.40	0.00	AFS	UG	
106 N10 E21 14DDCD1	23243	07202	DOM	AMERICAN TELEPHONE & TELEGRAPH	SE	SE	14	10N	21E		1.63	1.63	0.01	AFA		
106 N10 E22 18ACDA1	24469	07845	IRR	LODATO, JOSEPH S.	SW	NE	18	10N	22E	10.10	40.40	40.40	0.00	AFA		
106 N09 E22 13CCDA1	27311	09639	IRR	PARK, DAVID WALLACE	SW	SW	13	09N	22E	426.80	1,707.20	1707.20	766.23	AFA	WR	
106 N10 E22 10DACC1	28779	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NE	SE	10	10N	22E		879.45	879.45	19.36	AFA	UG	ψ
106 N10 E22 10BBDA1	28781	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NW	NW	10	10N	22E		879.45		22.74	AFA	UG	ψ
106 N10 E22 18ABDA1	31341	14132	QM	HOLBROOKE STATION, L.L.C.	NW	NE	18	10N	22E		32.44	32.44	0.31	AFA	UG	41463
106 N10 E22 29CBDB1	33662	10614	COM	TOPAZ LODGE INC.	NW	SW	29	10N	22E		1.44	28.26	3.71	AFA	UG	52865
106 N10 E22 17CCDB1	34649	12452	COM	MOSCHOGIANIS, PETER C.	SW	SW	17	10N	22E		0.31	0.31	0.31	AFA		
106 N10 E22 18ACDA1	34906	PER	COM	DANIEL BRENTS BOLTON & KDM	SW	NE	18	10N	22E		2.58	2.58	0.00	AFA		
106 N10 E22 18BADA1	35246	13017	QM	ROACH, HEIDI D. AND ROY B.	NE	NW	18	10N	22E		7.06	7.06	10.33	AFA		
106 N10 E22 32BCDA1	35495	PER	COM	KAHN, MORRIS.	SW	NW	32	10N	22E		4.35	4.35	0.25	AFA		
106 N10 E22 18ABDD1	41463	14134	QM	HOLBROOKE STATION, L.L.C.	NW	NE	18	10N	22E		32.44		28.58	AFA	UG	31341
106 N09 E22 13CCDA1	46841	11663	IRR	PARK, DAVID WALLACE	SW	SW	13	09N	22E	141.80	567.20	567.20	249.94	AFA	WR	
106 N10 E22 18ABDD1	47318	PER	COM	HEIDI D. & ROY B. ROACH 2002 TRUST	SE	NE	18	10N	22E		5.04	5.04	0.00	AFA		
106 N10 E22 29CCAA1	48040	14943	COM	TOPAZ LODGE, INC.	SW	SW	29	10N	22E		17.86	55.85	16.43	AFA	UG	α
106 N10 E22 29CDCC1	48041	14944	COM	TOPAZ LODGE, INC.	SE	SW	29	10N	22E		6.44		3.32	AFA	UG	α
106 N10 E22 29CCAA1	48299	14945	COM	TOPAZ LODGE, INC.	SW	SW	29	10N	22E		5.16		5.16	AFA	UG	α
106 N10 E22 29CDCC1	48300	14946	COM	TOPAZ LODGE, INC.	SE	SW	29	10N	22E		7.73		7.73	AFA	UG	α
No POC filed 9/30/2008	52865	PER	COM	TOPAZ LODGE, INC.	NW	SW	29	10N	22E		26.82		0.00	AFA	UG	33662
106 N10 E22 29DCCC1	53073	PER	QM	TOPAZ LODGE, INC.	SW	SE	29	10N	22E		16.14		6.35	AFA	UG	16425
106 N10 E22 18ADAC1	55478	16360	QM	PINION PINES MHC, LLC	SE	NE	18	10N	22E		7.73	7.73	13.70	AFA		
106 N10 E22 12CDCC1	56490	PER	QM	LAZY S LODGE	SE	SW	12	10N	22E		4.00	4.00	12.58	AFA		
106 N10 E22 18ADCD1	56925	PER	COM	HEIDI D. & ROY B. ROACH 2002 TRUST	SE	NE	18	10N	22E		2.97	2.97	0.00	AFA		
106 N10 E22 10BBDA1	57681	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NW	NW	10	10N	22E		38.67		0.00	AFA	UG	ψ
106 N10 E22 10DACC1	57682	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NE	SE	10	10N	22E		38.67		0.00	AFA	UG	ψ
106 N10 E22 12CADD1	57683	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NE	SW	12	10N	22E		88.05		0.00	AFA	UG	ψ
106 N10 E22 09BBAB1	57684	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NW	NW	09	10N	22E		879.45		0.00	AFA	UG	ψ
106 N10 E22 10ADAB1	57685	PER	QM	TOPAZ RANCH ESTATES G.I.D.	SE	NE	10	10N	22E		879.45		17.90	AFA	UG	ψ
106 N10 E22 15CADD1	57686	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NE	SW	15	10N	22E		879.45		177.72	AFA	UG	ψ
106 N10 E22 09BBAB1	57716	PER	QM	TOPAZ RANCH ESTATES G.I.D.	NW	NW	09	10N	22E		150.13		0.00	AFA	UG	ψ
106 N10 E22 32BBAD1	59892	PER	QM	BAUER, CLYNE P.	NW	NW	32	10N	22E		4.24	4.24	0.00	AFA		
106 N10 E22 29CDCC1	63415	PER	QM	K & K WATER COMPANY, INC.	SE	SW	29	10N	22E		15.68	15.68	6.40	AFA		
106 N10 E22 17DDAD1	65494	PER	COM	SHEERIN, CHRISTOPHER H. & KERI A.	SE	SE	17	10N	22E		4.00	4.00	0.07	AFA		
106 N10 E22 28DDBC1	65918	PER	REC	DOUGLAS COUNTY	SE	SE	28	10N	22E		24.49	24.49	5.57	AFA		
106 N10 E22 29CDCC1	67426	PER	COM	TOPAZ LODGE, INC.	SE	SW	29	10N	22E		21.28		0.00	AFA	UG	α
106 N10 E22 17CCAD1	68739	PER	IRR	KOTTKE LVNG TRST, DENNIS L & DIANE V	SW	SW	17	10N	22E	6.25	25.00	192.90	25.00	AFA	UG	68740
106 N10 E22 17CCAD1	68740	PER	IRR	KOTTKE LVNG TRST, DENNIS L & DIANE V	SW	SW	17	10N	22E	41.98	167.90		102.96	AFA	UG	68739
106 N10 E22 18DBDA1	70877	PER	QM	NORTHERN NEVADA URGENT CARE, LLP	NW	SE	18	10N	22E		5.00	5.00	0.27	AFA		
No POC filed 9/30/2008	70902	PER	QM	GREGORY FAMILY TRUST	SW	SE	12	10N	22E		7.84	7.84	0.00	AFA		
No POC filed 9/30/2008	71039	PER	QM	DA DEVELOPMENT, INC	NE	SE	17	10N	22E		3.94	3.94	0.00	AFA		
106 N10 E22 17DDAD1	71130	PER	COM	SHEERIN, CHRIS	SE	SE	17	10N	22E		4.00	4.00	0.00	AFA		
106 N10 E22 18ABDD2	74486	PER	COM	SIERRA ROADHOUSE	SE	NE	18	10N	22E		2.02	2.02	0.00	AFA		
106 N10 E22 22BDAC1	76889T	PER	IRR	ELEPHANT, LLC	SE	NW	22	10N	22E		813.00	1737.00	0.00	AFA	UG	*
106 N10 E22 14ACBD1	76890T	PER	IRR	ELEPHANT, LLC	SW	NE	14	10N	22E		660.00		464.86	AFA	UG	*
106 N10 E22 22ADAD1	76891T	PER	IRR	ELEPHANT, LLC	SE	NE	22	10N	22E		205.60		0.00	AFA	UG	*
106 N10 E22 15DCBB1	76892T	PER	IRR	ELEPHANT, LLC	SW	SE	15	10N	22E		434.00		544.87	AFA	UG	*

UNIQUE IDENTIFIER	APP NO.	STATUS	MOU	OWNER OF RECORD	QQ	QTR	SEC	T	R	PER ACRES IRR	DUTY (AF)	SUPP ADJ	DUTY USED	UNIT	SUPP SRC	SUPP GW APP NO.
106 N10 E22 15ADC1	76893T	PER	IRR	ELEPHANT, LLC	SE	NE	15	10N	22E		470.00		0.00	AFA	UG	*
106 N10 E22 26ABCD1	76894T	PER	IRR	FAIRFIELD TOPAZ, LLC	NW	NE	26	10N	22E		591.00	881.86	284.93	AFA	UG	β
106 N10 E22 25BDAC1	76895T	PER	IRR	FAIRFIELD TOPAZ, LLC	SE	NW	25	10N	22E		274.36		270.56	AFA	UG	β
106 N10 E22 25BDAC1	76896T	PER	IRR	FAIRFIELD TOPAZ, LLC	SE	NW	25	10N	22E		16.50		0.00	AFA	UG	β

* Elephant, LLC total combined duty permit #'s 76889T, 76890T 76891T, 76892T, 76893T = TCD 1737.00 AFA

Ψ Topaz Ranch Estates total combined duty permit #'s 28779, 28781, 57681, 57682, 57683, 57684, 57685, 57686, 57716 = TCD 879.45 AFA

α Topaz Lodge Inc. total combined duty permit #'s 48040, 48041, 48229, 48300, 67426 = TCD 55.85 AFA

β Fairfield Topaz, LLC total combined duty permit #'s 76894T, 76895T, 76896T = TCD 881.86 AFA

APPENDIX C

**ANTELOPE VALLEY 2008 PLACE OF USE OF GROUNDWATER PERMITS AND
CERTIFICATES FOR IRRIGATION**

Explanation of Column Headings for Place of Use of Groundwater Irrigation Rights

APP NO.	The file number of the Application to Appropriate/Change Water.
STATUS	Indicates if the application is a Permit (PER) or if it has been certificated. If an application has been certificated, the Certificate number will be listed in the column.
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.
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.
PER ACRES	The number of acres, by quarter quarter that are permitted to be irrigated.
PER IRR ACRES 2008	The number of acres irrigated within the place of use of the associated permit, during water-year 2008, as determined by field inspection.
SUPP ACRES	The number of acres by quarter quarter that have more than one appropriation appurtenant.
SUPP SOURCE	Source of the supplemental water, UG (ground water) or WR (Walker River).
SUPP GW APP NO.	The file number of the supplemental ground water appropriation.

APP NO.	STATUS	OWNER OF RECORD	QQ	QTR	SEC	T	R	PER ACRES	PER IRR ACRES 2007	SUPP ACRES	SUPP SOURCE	SUPP GW APP NO.	
13013	4928	MATHEWSON, CHARLES N. TRUST	N2	NE	19	10N	23E	25.9	0.0	0.0			
			N2	NW	19	10N	23E	24.0	0.0	0.0			
			Total:						49.9	0.0			
16789	5732	ALLRED, EVAN L.	SE	NE	22	10N	22E	7.0	0.0	0.0			
			NE	SE	22	10N	22E	3.0	0.0	0.0			
			SW	NW	23	10N	22E	6.6	0.0	0.0			
			NW	SW	23	10N	22E	12.0	0.0	0.0			
			Total:						28.6	0.0			
24469*	7845	LODATO, JOSEPH S.	SE	NE	18	10N	22E	4.8	0.0		UG	1581	
			SW	NE	18	10N	22E	5.3	0.0		UG	1581	
			Total:						10.1	0.0			
27311**	9639	PARK, DAVID WALLACE	S2	NE	11	09N	22E	21.9	16.0	0.0			
				SE	11	09N	22E	105.1	105.1	0.0			
				SW	12	09N	22E	51.7	51.7			WR	
			SW	NW	12	09N	22E	1.1	1.1			WR	
			NW	NW	13	09N	22E	25.4	24.4	0.0			
			SW	NW	13	09N	22E	25.7	6.6			WR	
			NW	SW	13	09N	22E	27.5	26.0			WR	
				TR41	13	09N	22E	21.0	2.1			WR	
				NE	14	09N	22E	94.0	86.5			WR	
				TR42	14	09N	22E	53.4	35.5			WR	
			Total:						426.8	355.0			
46841**	11663	PARK, DAVID WALLACE	S2	NW	12	09N	22E	32.3	32.3			WR	
			SW	NE	12	09N	22E	2.7	2.7	0.0			
			NW	SW	12	09N	22E	12.2	12.2			WR	
			NE	SW	12	09N	22E	40.0	40.0			WR	
			NW	SE	12	09N	22E	24.2	18.9			WR	
			SE	SW	12	09N	22E	20.9	20.9			WR	
			SW	SE	12	09N	22E	9.5	6.4	0.0			
			Total:						141.8	133.4			
68739*	PER	KOTTKE LVNG TRST, DENNIS L & DIANE V		SW	17	10N	22E		28.7			UG	68740
			W2	SE	17	10N	22E		0.0			UG	68740
			E2	SE	18	10N	22E		0.0			UG	68740
			NE	NE	19	10N	22E		0.0			UG	68740
			Total:						6.3	28.7			UG
68740*	PER	KOTTKE LVNG TRST, DENNIS L & DIANE V		SW	17	10N	22E		28.7			UG	68739
			W2	SE	17	10N	22E		0.0			UG	68739
			E2	SE	18	10N	22E		0.0			UG	68739
			NE	NE	19	10N	22E		0.0			UG	68739
			Total:						42.0	28.7			UG

APP NO.	STATUS	OWNER OF RECORD	QQ	QTR	SEC	T	R	PER ACRES	PER IRR ACRES 2007	SUPP ACRES	SUPP SOURCE	SUPP GW APP NO.
76889T, 76890T, 76891T, 76892T, 76893T, 76894T, 76895T, 76896T ^a	PER	ELEPHANT, LLC & FAIRFIELD TOPAZ, LLC	SE	SE	12	10N	22E		0.0		UG	
			E2	E2	13	10N	22E		0.0		UG	
			NW	NE	13	10N	22E		0.0		UG	
			SW	NE	13	10N	22E		0.0		UG	
			NW	SE	13	10N	22E		0.0		UG	
			SW	SE	13	10N	22E		0.0		UG	
			NE	SW	13	10N	22E		0.0		UG	
			NW	SW	13	10N	22E		0.0		UG	
			S2	SW	13	10N	22E		0.0		UG	
			NW	NE	14	10N	22E		0.0		UG	
			SE	NE	14	10N	22E		0.0		UG	
			SW	NE	14	10N	22E		0.3		UG	
			NE	NW	14	10N	22E		0.0		UG	
			NW	NW	14	10N	22E		0.0		UG	
			S2	NW	14	10N	22E		31.1		UG	
			NE	SE	14	10N	22E		0.0		UG	
			NW	SE	14	10N	22E		4.4		UG	
			S2	SE	14	10N	22E		0.0		UG	
				SW	14	10N	22E		103.6		UG	
			SE	NE	15	10N	22E		0.0		UG	
			SW	NE	15	10N	22E		0.0		UG	
			SE	NW	15	10N	22E		0.0		UG	
				SE	15	10N	22E		89.8		UG	
			NE	SW	15	10N	22E		0.0		UG	
			NW	SW	15	10N	22E		0.0		UG	
			S2	SW	15	10N	22E		0.0		UG	
			NE	SE	16	10N	22E		0.0		UG	
			SE	SE	16	10N	22E		0.0		UG	
				NW	22	10N	22E		0.0		UG	
				NE	22	10N	22E		17.2		UG	
			N2	S2	22	10N	22E		0.0		UG	
				NE	23	10N	22E		0.0		UG	
			NE	NW	23	10N	22E		0.0		UG	
			NW	NW	23	10N	22E		1.3		UG	
			N2	S2	23	10N	22E		0.0		UG	
			S2	SE	23	10N	22E		2.0		UG	
			SE	SW	23	10N	22E		0.0		UG	
					24	10N	22E		0.0		UG	
				NE	25	10N	22E		0.0		UG	
				NW	25	10N	22E		98.7		UG	
NE	SE	25	10N	22E		0.0		UG				
SE	SE	25	10N	22E		0.0		UG				
SW	SW	25	10N	22E		0.0		UG				
N2	SW	25	10N	22E		8.3		UG				
	NE	25	10N	22E		88.2		UG				
	NW	26	10N	22E		0.0		UG				
NE	SE	26	10N	22E		0.6		UG				

APP NO.	STATUS	OWNER OF RECORD	QQ	QTR	SEC	T	R	PER ACRES	PER IRR ACRES 2007	SUPP ACRES	SUPP SOURCE	SUPP GW APP NO.	
			NW	SE	26	10N	22E		0.0		UG		
			N2	SW	26	10N	22E		0.0		UG		
			S2	SE	26	10N	22E		0.0		UG		
			S2	SW	26	10N	22E		0.0		UG		
			SE	SE	7	10N	23E		0.0		UG		
			NW	SW	7	10N	23E		0.0		UG		
			SE	SW	7	10N	23E		0.0		UG		
			SE	SE	8	10N	23E		0.0		UG		
			SE	NE	17	10N	23E		0.0		UG		
			NW	NW	17	10N	23E		0.0		UG		
			NE	SE	17	10N	23E		0.0		UG		
			NE	SW	17	10N	23E		0.0		UG		
				N2	18	10N	23E		0.0		UG		
			W2	SW	18	10N	23E		0.0		UG		
			W2	NW	19	10N	23E		0.0		UG		
				S2	19	10N	23E		0.0		UG		
				SW	20	10N	23E		0.0		UG		
				N2	30	10N	23E		0.0		UG		
			N2	S2	30	10N	23E		0.0		UG		
			S2	S2	30	10N	23E		0.0		UG		
			E2	E2	31	10N	23E		0.0		UG		
			Total:						445.5				

* Permit # 24469 may be supplemental to permit # 1581.

** Permit #s 27311, 46841 are supplemental to a portion of Walker River Decree, Claim #2.

* Permit #s 68739, 68740 have same proposed place of use, with a total combined acreage of 48.23

APPENDIX D

ANTELOPE VALLEY HISTORICAL PUMPAGE

HISTORICAL PUMPAGE BY POINT OF DIVERSION

UNIQUE IDENTIFIER	PERMITS	MOU	OWNER OF RECORD	DUTY USED 2006	DUTY USED 2007	DUTY USED 2008
106 N09 E22 13CCDA1	27311, 46841	IRR	PARK, DAVID WALLACE	58.31	810.80	1016.17
106 N10 E21 14DDCD1	23243	DOM	AMERICAN TELEPHONE & TELEGRAPH	1.63	1.63	0.01
106 N10 E22 09BBAB1	57684, 57716	QM	TOPAZ RANCH ESTATES G.I.D.	0.00	0.00	0.00
106 N10 E22 10ADAB1	57685	QM	TOPAZ RANCH ESTATES G.I.D.	5.65	18.92	17.89
106 N10 E22 10BBDA1	28781, 57681	QM	TOPAZ RANCH ESTATES G.I.D.	7.13	24.22	22.74
106 N10 E22 10DACC1	28779, 57682	QM	TOPAZ RANCH ESTATES G.I.D.	6.15	20.68	19.36
106 N10 E22 12CADD1	57683	QM	TOPAZ RANCH ESTATES G.I.D.	0.00	0.00	0.00
106 N10 E22 12CDCC1	56490	QM	LAZY S LODGE	4.00	9.90	12.58
106 N10 E22 14ACBD1	13787	IRR	ELEPHANT, LLC	0.00	146.63	464.86
106 N10 E22 15ADC1	16989	IRR	ELEPHANT, LLC	0.00	0.00	0.00
106 N10 E22 15CADD1	57686	QM	TOPAZ RANCH ESTATES G.I.D.	59.25	201.67	177.72
106 N10 E22 15DCBB1	16988	IRR	ELEPHANT, LLC	0.00	257.36	544.87
106 N10 E22 17CCAD1	68739, 68740	IRR	KOTTKE LVNG TRST, DENNIS L & DIANE V	73.40	67.55	127.96
106 N10 E22 17CCDB1	34649	COM	MOSCHOGLIANIS, PETER C.	0.00	0.31	0.31
106 N10 E22 17DDAD1	65494, 71130	COM	SHEERIN, CHRISTOPHER H. & KERI A.	4.00	0.60	0.07
106 N10 E22 18ABDA1	31341	QM	HOLBROOKE STATION, L.L.C.	0.00	0.02	0.31
106 N10 E22 18ABDD1	41463	QM	HOLBROOKE STATION, L.L.C.	32.44	8.01	28.58
106 N10 E22 18ACDA1	24469, 34906	IRR/COM	LODATO, JOSEPH S. & DANIEL BRENTS BOLTON & KDM	1.12	0.00	0.00
106 N10 E22 18ADAC1	55478	QM	PINION PINES MHC, LLC	7.73	13.11	13.70
106 N10 E22 18ABDB1	47318	COM	HEIDI D. & ROY B. ROACH 2002 TRUST	0.00	0.00	0.00
106 N10 E22 18ABDB2	74486	COM	SIERRA ROADHOUSE	N/A	0.00	0.00
106 N10 E22 18ADCD1	56925	COM	HEIDI D. & ROY B. ROACH 2002 TRUST	0.00	0.01	0.00
106 N10 E22 18BADA1	35246	QM	ROACH, HEIDI D. AND ROY B.	7.06	9.10	10.33
106 N10 E22 18DBDA1	70877	QM	NORTHERN NEVADA URGENT CARE, LLP	5.00	0.16	0.27
106 N10 E22 22ADAD1	16789	IRR	ALLRED, EVAN L.	0.00	0.00	0.00
106 N10 E22 22BDAC1	13014	IRR	ELEPHANT, LLC	0.00	0.00	0.00
106 N10 E22 25BDAC1	70852, 70853	IRR	BAWDEN, J.F.	204.00	597.25	270.56
106 N10 E22 26ABCD1	70851	IRR	BAWDEN, J.F.	204.00	299.87	284.93
106 N10 E22 28DDBC1	65918	REC	DOUGLAS COUNTY	24.49	24.49	5.57
106 N10 E22 29CBDB1	33662	COM	TOPAZ LODGE INC.	1.44	1.44	3.71
106 N10 E22 29CCAA1	48040, 48299	COM	TOPAZ LODGE, INC.	23.02	14.43	21.59
106 N10 E22 29CDCC1	48041, 48300, 67426	COM	TOPAZ LODGE, INC.	35.47	15.13	11.05
106 N10 E22 29CDCC1	63415	QM	K & K WATER COMPANY, INC.	15.68	0.43	12.34
106 N10 E22 29DCCC1	16425, 53073	QM	TOPAZ LODGE INC.	22.58	7.53	12.79
106 N10 E22 32BBAD1	59892	QM	BAUER, CLYNE P.	0.00	0.00	0.00
106 N10 E22 32BCDA1	35495	COM	KAHN FAMILY TRUST	14.45	0.28	0.25
106 N10 E23 19BABA1	13013	IRR	MATHEWSON, CHARLES N. TRUST	0.00	7.32	4.34
No POC filed 9/30/2008	52865	COM	TOPAZ LODGE, INC.	0.00	0.00	0.00
No POC filed 9/30/2008	70902	QM	GREGORY FAMILY TRUST	0.00	0.00	0.00
No POC filed 9/30/2008	71039	QM	DA DEVELOPMENT, INC	0.00	0.00	0.00

HISTORICAL GROUNDWATER USE BY MANNER OF USE

	2006	2007	2008
COM	79	32	37
DOM	2	2	0
IRR	540	2187	2714
QM	173	314	329
REC	24	24	6

*Values are in Acre-Feet

