

Land Use Assessment for Cave, Dry Lake, and Delamar Valleys

PRESENTATION TO THE OFFICE OF THE NEVADA STATE ENGINEER

Prepared by



SOUTHERN NEVADA
WATER AUTHORITY

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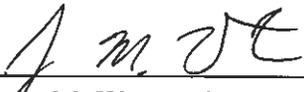
**Land Use Assessment for
Cave, Dry Lake, and Delamar Valleys**

Submitted to:
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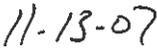
Pertaining to:
Groundwater Applications 53987 through 53992 in
Cave, Dry Lake, and Delamar Valleys

November 2007

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1.0 INTRODUCTION

This report provides a land use evaluation of the basins of origin for the proposed groundwater development project in Cave, Dry Lake, and Delamar valleys. This assessment was completed in support of water-right hearings related to Southern Nevada Water Authority (SNWA) applications 53987 through 53992, inclusive. The purpose of this report is to identify the current land uses as well as acreage for each use within Cave, Dry Lake, and Delamar valleys. The data compilation, methodology, and results are described in the following sections.

2.0 DATA COMPILATION

This section provides a description of the types of data acquired to perform the analysis of land use for Cave, Dry Lake, and Delamar valleys. The types of data used include:

- Geographic Information System (GIS) parcel data
- County Assessor's parcel records for White Pine and Lincoln counties, Nevada
- Bureau of Land Management (BLM) GIS data for land ownership for Nevada
- BLM Surface Management Status Topographic Maps
- Hydrographic Area boundary GIS layer for Cave, Dry Lake, and Delamar valleys
- Nevada county boundaries GIS layer

The GIS parcel data used for this analysis was obtained by the Southern Nevada Water Authority (SNWA) from Michael Baker, Jr., Inc. on October 1, 2007. The GIS layer contains the shapes of the parcels with a field for the Assessors Parcel Number that can be linked to the county parcel records. The data represented are not of survey grade and therefore the calculations made using this data are only approximations.

The County Assessor's parcel records were acquired by SNWA's Data Resources Division for Lincoln and White Pine counties by visiting the counties and acquiring tables of assessor information. These data tables contain the Assessors Parcel Number that can be linked to the GIS parcel data set.

The BLM GIS data for land ownership for Nevada was obtained from the BLM Nevada State Office in September, 2006. The GIS layer contains the shapes of land ownership with a field in the data table describing the land owner. This data set was digitized from the BLM Surface Management Status topographic maps and is not of survey grade.

BLM Surface Management Status topographic maps were acquired for the areas that include Cave, Dry Lake, and Delamar valleys. These maps are at 1:100,000 scale and provide information on the

status of lands including the amount of public and private lands within the region. The maps acquired for this analysis include the Garrison, Wilson Creek Range, Caliente, and Clover Mountains sheets.

The Hydrographic Area boundaries were based on a combination of the State of Nevada Department of Water Resources Hydrographic Basin map and the USGS Hydrographic Areas and Flow Systems Analysis within the Great Basin Regional Aquifer System. Actual basin boundaries were derived from surface analysis using ESRI GIS software 1:24,000 seamless National Elevation Dataset and a Digital Elevation Model which had been processed and hydrologically corrected.

The Nevada county boundaries layer was obtained from ESRI.

3.0 METHODOLOGY

The methodology employed to calculate the areas of public and private lands within Cave, Dry Lake, and Delamar valleys is described in this section.

The analysis of land use was performed within ArcGIS using the data sets described in [Section 2.0](#). The first step to performing the analysis was to clip the parcel data layer to the hydrographic area boundaries for Dry Lake and Delamar valleys. The clipped data layers were then joined with the Lincoln County Assessor's parcel data tables based on the Assessor's Parcel Number which is the common link for the data sets. The clips and joins for Cave Valley required a slightly modified approach as the valley is located within both Lincoln and White Pine counties. The parcel data layer was originally clipped by the county boundaries and then by the Cave Valley hydrographic area. The two new layers were then joined with the parcel data from Lincoln and White Pine counties in the same manner as Dry Lake and Delamar valleys.

Acreages for all of the resulting layers were then calculated within ESRI's ArcGIS 9.2 suite, using the Calculate Geometry feature on each of the attribute tables. The attribute tables were sorted by the field LANDUSE and the acreages were summed for each land use represented.

The resulting parcel information was compared against the BLM Surface Management Status topographic maps. This comparison showed that there were several mining areas in Delamar and Dry Lake valleys that were marked as Private Land on the surface management maps that were not included in the parcel inventory layer. A visual inspection of the BLM GIS data for land ownership showed that these mining areas were included within that layer.

The BLM GIS layer for land ownership was clipped so that the lands that were not included in the parcel data for Cave, Dry Lake, and Delamar valleys were accounted for. The acreages for these areas were calculated using the Calculate Geometry feature on the attribute table. These acreages were then subtracted from the Vacant-BLM lands identified in the parcel layer.

4.0 RESULTS

The results of the land use analysis are listed in [Table 1](#) and depicted on [Plate 1](#). As mentioned previously, the parcel data are not survey grade and therefore calculations of the acreages are only approximations. However, for the purpose of this analysis the inaccuracies associated with the parcels would have little influence on the overall acreage estimations. The results indicate that there are very few land uses within Cave, Dry Lake, and Delamar valleys with the majority of lands being BLM. Over 96 percent of the lands in Cave Valley are public BLM lands. For Dry Lake and Delamar valleys the percentages are even higher with over 99 percent of the lands being public BLM lands.

**Table 1
Land Use with Associated Acreage**

Land Use	Acreage
Cave Valley White Pine County Portion	
Vacant-Bureau of Land Management	60,763
Agricultural Deferred Vacant	2,308
Vacant-University of Nevada	192
Vacant Single Family	37
Total	63,300
Cave Valley Lincoln County Portion	
Vacant-Bureau of Land Management	162,871
Agricultural Deferred with Residence	2,278
Agricultural Deferred Vacant	953
Agricultural Deferred with Improvements but no Residences	203
Vacant-Mull Revocable Trust	43
Total	166,348
Dry Lake Valley	
Vacant-US Bureau of Land Management	570,626 ^a
Mining areas as identified on BLM Land Ownership data	1,655
Agricultural Deferred with Improvements but no Residences	794
Vacant-Treasure in Trust	155
Agricultural Deferred Vacant	137
Agricultural Deferred with Residence	30
Minor Improvements but no Major Usable Buildings	1
Total	573,398
Delamar Valley	
Vacant-US Bureau of Land Management	230,003 ^a
Mining areas as identified on BLM Land Ownership data	1,440
Total	231,443

^aThe number of BLM acres is determined from the parcel data set minus the mining acres from the BLM Land Ownership data set.

5.0 SUMMARY

In summary, this report was compiled to describe the current land uses within Cave, Dry Lake, and Delamar valleys. The data sets used in this analysis include GIS data such as parcel layers and land ownership layers, as well as tabled data from both the Lincoln and White Pine county assessors records. These data sets were used to calculate the acreages associated with the various land uses identified in the county assessors records. The results of this analysis indicate there are very few private uses of the land within these valleys and that over 96 percent of the land in Cave Valley is public BLM lands while that percentage increases to over 99 percent in both Dry Lake and Delamar valleys.

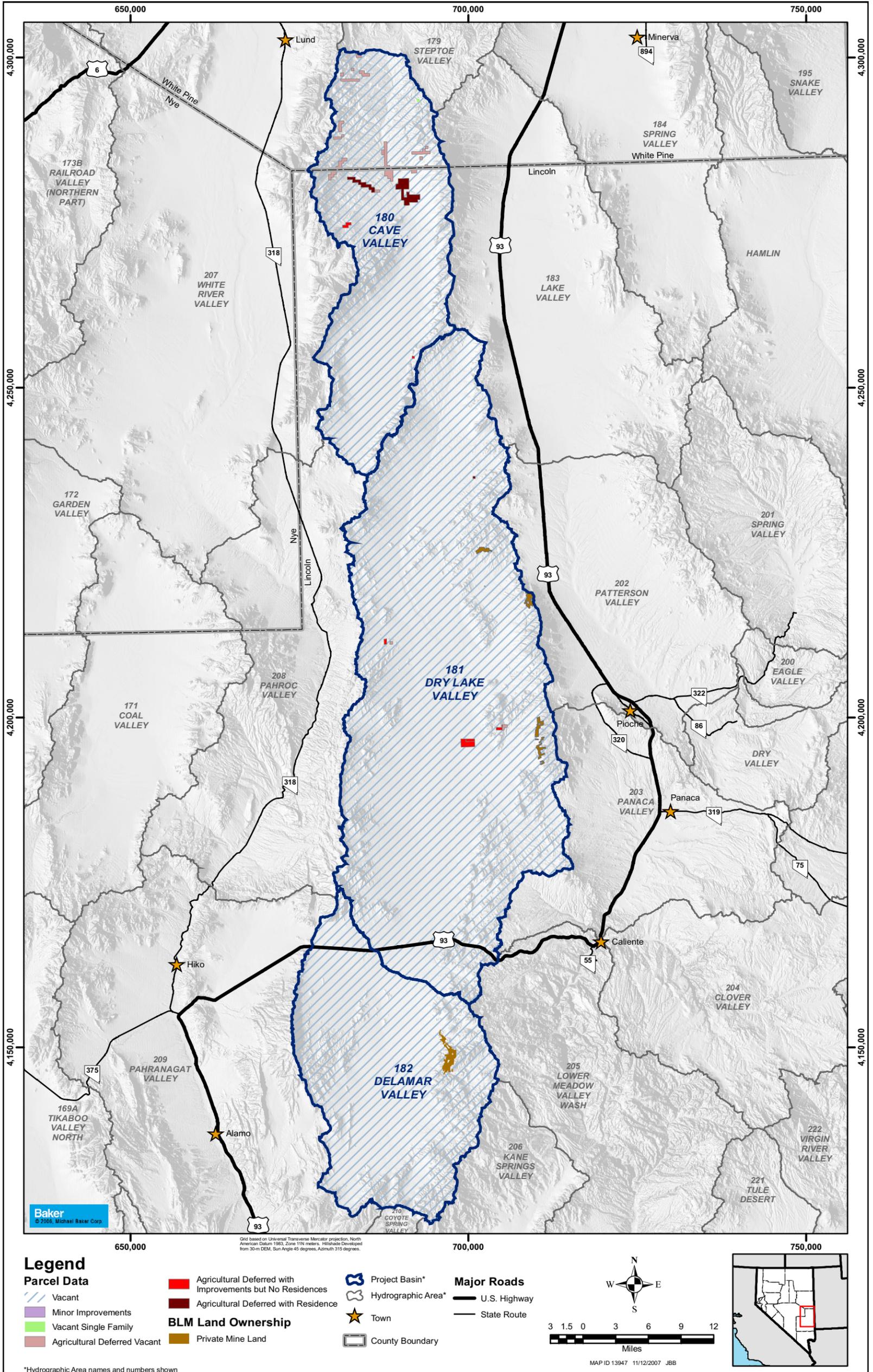


Plate 1
Land Use Map