



# Phase II Hydrologic Data for the Groundwater Flow and Contaminant Transport Model of Corrective Action Unit 98: Frenchman Flat, Nye County, Nevada



Prepared for U.S. Department of Energy under Contract No. DE-AC52-03NA99205

Approved for public release; further dissemination unlimited.

[orders@ntis.gov](mailto:orders@ntis.gov)

<http://www.ntis.gov/ordering.htm>

<http://www.osti.gov/bridge>

[reports@adonis.osti.gov](mailto:reports@adonis.osti.gov)

*Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof or its contractors or subcontractors.*



**PHASE II HYDROLOGIC DATA FOR THE  
GROUNDWATER FLOW AND  
CONTAMINANT TRANSPORT MODEL OF  
CORRECTIVE ACTION UNIT 98:  
FRENCHMAN FLAT,  
NYE COUNTY, NEVADA**

Prepared for U.S. Department of Energy under Contract No. DE-AC52-03NA99205

Approved for public release; further dissemination unlimited.

**PHASE II HYDROLOGIC DATA FOR THE GROUNDWATER FLOW AND  
CONTAMINANT TRANSPORT MODEL OF CORRECTIVE ACTION UNIT 98:  
FRENCHMAN FLAT, NYE COUNTY, NEVADA**

---

## ***Table of Contents***

---

***Table of Contents (Continued)***

---

## ***Table of Contents (Continued)***

---

**Appendix A - Hydrostratigraphic Model Supporting Information**

**Appendix B - Well Discharge Data**

**Appendix C - Hydraulic-Head Dataset**

**Appendix D - Well Construction Diagrams**

**Appendix E - Boundary Flux Calculations**

**Appendix F - Piper and Stiff Diagrams for FF Wells**

**CD Containing this Document and Supporting Datasets**

## ***List of Figures***

---

<b><i>Number</i></b>	<b><i>Title</i></b>	<b><i>Page</i></b>
----------------------	---------------------	--------------------

## ***List of Figures (Continued)***

---

<b><i>Number</i></b>	<b><i>Title</i></b>	<b><i>Page</i></b>
----------------------	---------------------	--------------------

## ***List of Figures (Continued)***

---

<b><i>Number</i></b>	<b><i>Title</i></b>	<b><i>Page</i></b>
----------------------	---------------------	--------------------

## **List of Figures (Continued)**

---

<b>Number</b>	<b>Title</b>	<b>Page</b>
---------------	--------------	-------------

	$\delta$	$\delta$
--	----------	----------

$\delta$		
----------	--	--

$\delta$		
----------	--	--

$\delta$		
----------	--	--

	$\delta$	
--	----------	--

## ***List of Figures (Continued)***

---

<b><i>Number</i></b>	<b><i>Title</i></b>	<b><i>Page</i></b>
----------------------	---------------------	--------------------

## ***List of Figures (Continued)***

---

<b><i>Number</i></b>	<b><i>Title</i></b>	<b><i>Page</i></b>
----------------------	---------------------	--------------------

## ***List of Tables***

---

<b><i>Number</i></b>	<b><i>Title</i></b>	<b><i>Page</i></b>
----------------------	---------------------	--------------------

**List of Tables (Continued)**

---

**Number**

**Title**

**Page**

**List of Tables (Continued)**

---

<b>Number</b>	<b>Title</b>	<b>Page</b>
---------------	--------------	-------------

## ***Acknowledgement***

---

## ***List of Acronyms and Abbreviations***

---

***List of Acronyms and Abbreviations*** (Continued)

---

*Federal Facility Agreement and Consent Order*

***List of Acronyms and Abbreviations*** (Continued)

---

***List of Acronyms and Abbreviations*** (Continued)

---

**List of Acronyms and Abbreviations** *(Continued)*

---

o

δ

δ

δ

# **1.0** *Introduction*

## **1.1** *Project Background*

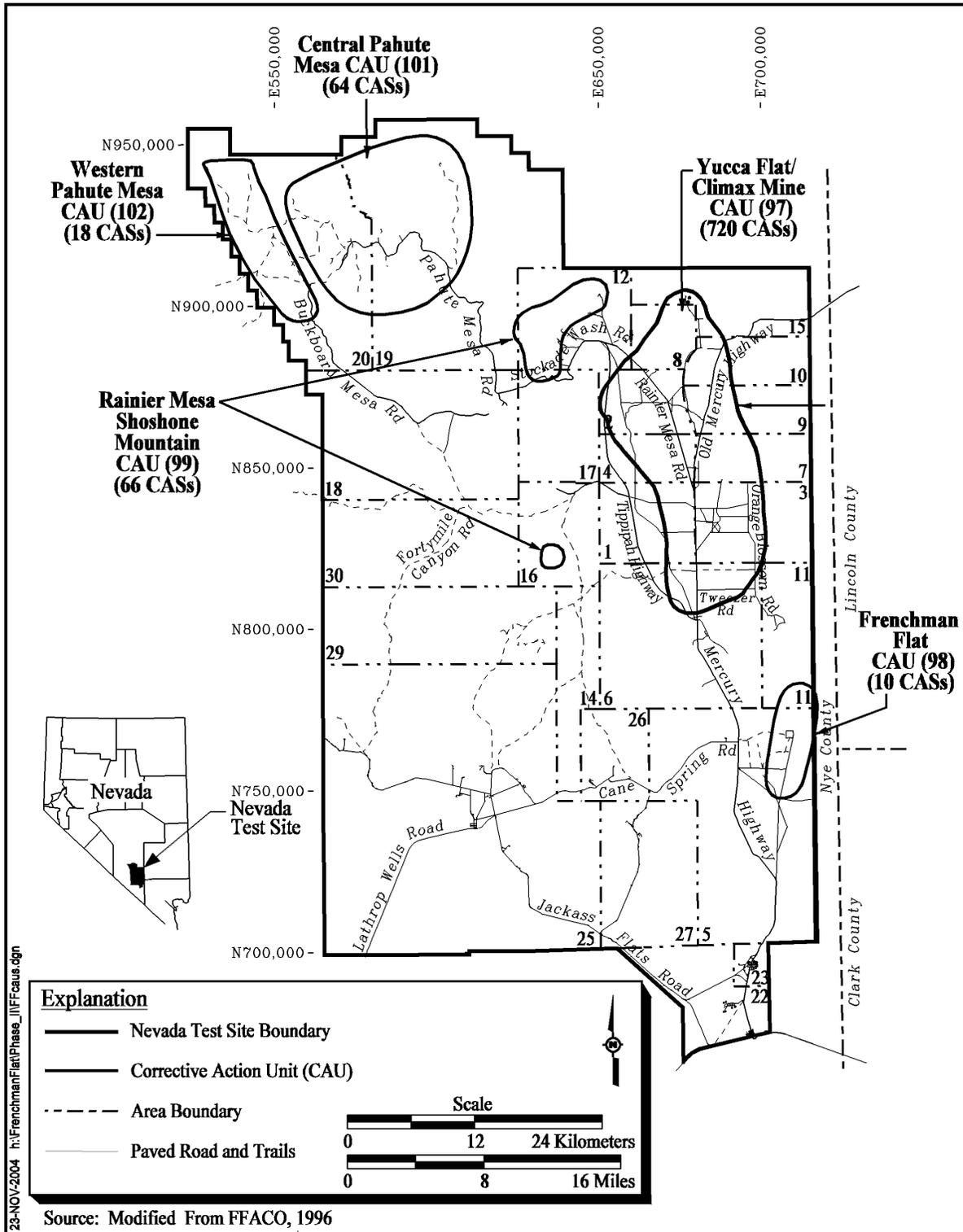


Figure 1-1  
Location of the Frenchman Flat Corrective Action Unit

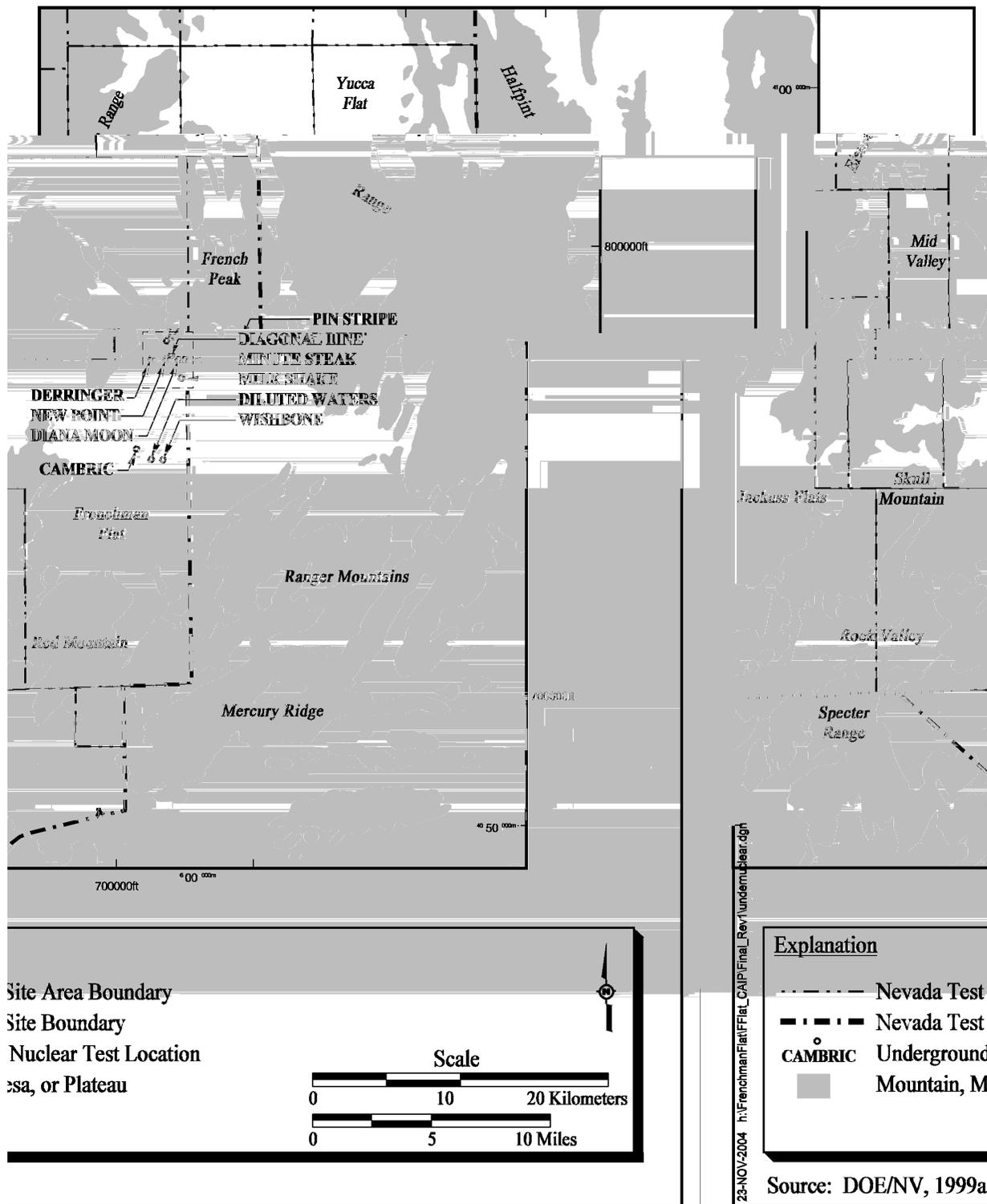


Figure 1-2  
Location of Underground Nuclear Tests in Frenchman Flat

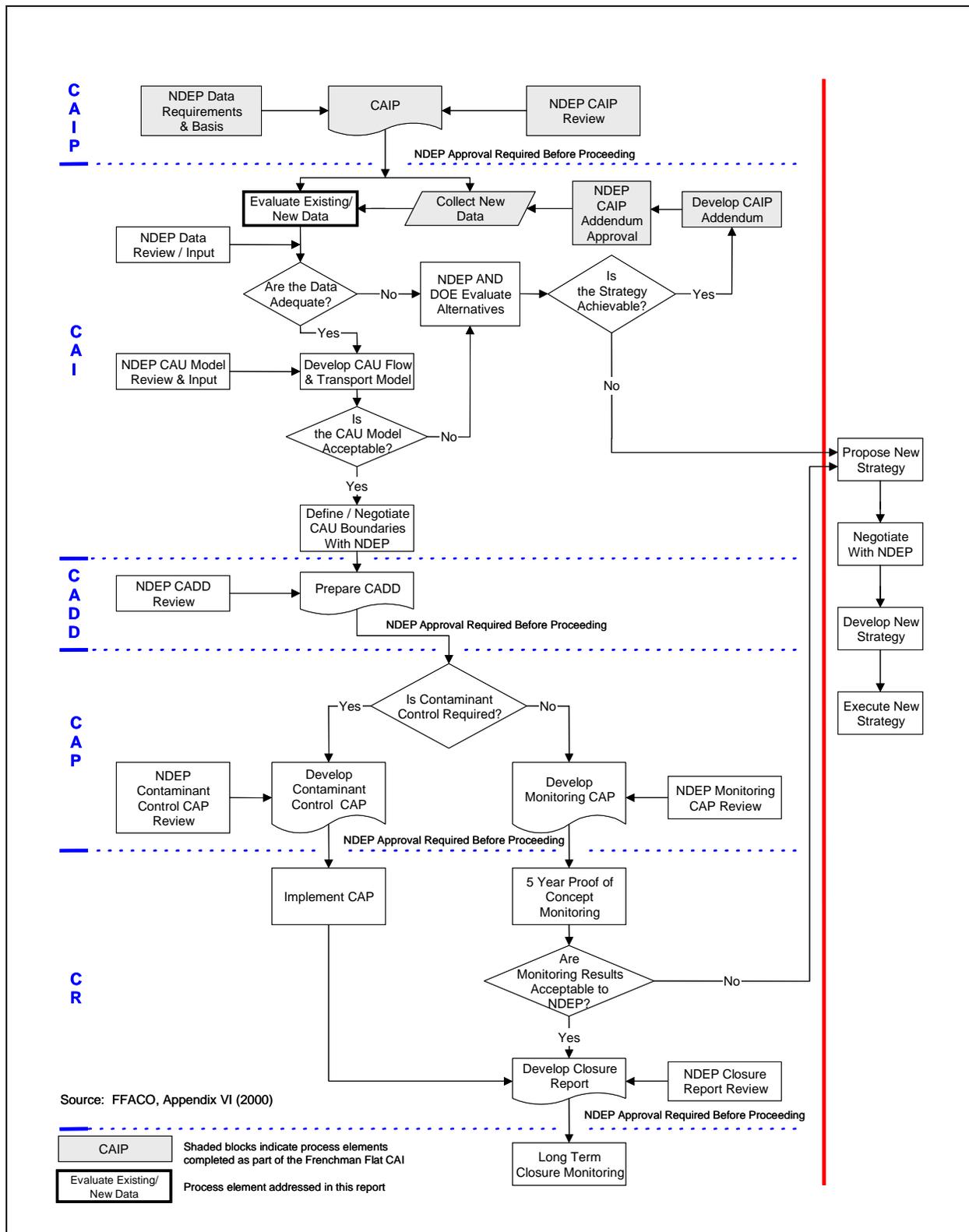
**Table 1-1**  
**Corrective Action Sites in the Frenchman Flat Corrective Action Unit**

Test Name	CAS Number	Date Expended	Hole Name	UTM Zone 11, NAD 27 (m)	Yield Range (kt)	Hole Depth (m/ft)	Working Point Depth (m/ft)	Working Point HSU	Surface Elevation <sup>a</sup> (m/ft)	Bottom of Hole Elevation (m/ft amsl)
CAMBRIC	05-57-003	05/14/1965	U5e	E 592142.7 N 4075575.4	0.75	304.8 1,000	295 968	AA	956.2 3,137	651.4 2,137
DERRINGER	05-57-004	09/12/1966	U5i	E 593518.3 N 4081415.4	7.8	249.9 820	255 837	AA	1,034.8 3,395	784.9 2,575
DIAGONAL LINE	11-57-005	11/24/1971	U11g	E 594939.1 N 4081801.6	<20	277.4 910	264 866	AA	1,037.8 3,405	760.4 2,495
DIANA MOON	11-57-003	08/27/1968	U11e	E 595265.3 N 4081581.8	<20	254.5 835	242 794	AA	1,031.8 3,385	777.3 2,550
DILUTED WATERS	05-57-002	06/16/1965	U5b	E 593110.1 N 4074994.0	<20	205.7 675	193 633	AA	943.4 3,095	737.7 2,420
MILK SHAKE	05-57-005	03/25/1968	U5k	E 595267.2 N 4080972.3	<20	275.7 905	265 869	AA	1,020.8 3,049	745 2,144
NEW POINT	11-57-002	12/13/1966	U11c	E 594655.9 N 4081579.7	<20	559.3 1,835	239 784	AA	1,030.5 3,381	471.2 1,546
MINUTE STEAK	11-57-004	09/12/1969	U11f	E 595494.8 N 4081584.4	<20	277.4 910	265 869	AA	1,034.2 3,393E 2,446	590.8
NE05-57-001	(00)5.27(/1)6.8(1)6.5(/)2.9(19)6.3(6)65		E 599 U11j N 40749	(-5)6.a1f <20				AA	940.5 3,385	9.2 2,454
TD-0.004	17-6.5(17-6.5(7-T)6.3(017-6.5(1)-6724((0)-0.4017-6./)-5-6.25)-5-6.6(17-6.965(6)-1994(U6(72)5.6b1f)JTJ28.384	0.632	TD-0.0039	Tc0.0061	Tw((E 59)-7.4359)-7.8667.)-6.1(2)JTJ-0.304	-1.264	TD-0.004			

*Regional Groundwater Flow and Tritium Transport Modeling and Risk Assessment of the Underground Test Area, Nevada Test Site, Nevada*

T

*Corrective Action Investigation Plan for Corrective Action Unit 98:  
Frenchman Flat, Revision 1*



**Figure 1-3**  
**Process Flow Diagram for the Underground Test Area Corrective Action Units**

*Value of Information Analysis for Corrective Action Unit No. 98:  
Frenchman Flat*

*Underground Test Area Subproject Corrective Action Unit 98:  
Frenchman Flat Data Analysis Task, Volume I – Hydrostratigraphic  
Model Documentation Package, Revision 0*

*Underground Test Area Project Corrective Action Unit 98: Frenchman  
Flat Data Analysis Task, Volume II – Groundwater Data Documentation  
Package, Revision 0*

*Underground Test Area Project Corrective Action Unit 98: Frenchman  
Flat Data Analysis Task, Volume III – Groundwater Flow and  
Contaminant Transport Model Data Documentation Package, Revision 0*

*Evaluation of the Hydrologic Source Term from Underground Nuclear  
Tests in Frenchman Flat at the Nevada Test Site: The CAMBRIC Test*

*External Peer Review Group Report on  
Frenchman Flat Data Analysis and Modeling Task, Underground Test Area  
Project, Revision No. 0*

*Lessons Learned from the Frenchman  
Flat Corrective Action Groundwater Flow and Radionuclide Transport Model*

**Table 1-2**  
**Summary of Lessons Learned from the Frenchman Flat CAU Model Related to Data Analysis**

Topic	Deficiency	Recommendation
Data Analysis	Data analysis does not assess data adequacy	Difficult problem, additional studies would be required to address this
	Justification for transferring data from outside a CAU is lacking	A methodology for justifying data transfer needs to be developed and included in the data analysis
	The statistical treatment of data is not always consistent	Consultation with appropriate subject matter experts will be sought to avoid mistakes in the future
	Hydraulic gradient discussion was missing	This will be added to future data analyses
Sensitivity and Uncertainty Analyses	Range of uncertainty needs to be better documented	The data analysis will be expanded to better assess parameter uncertainty

*Addendum to Revision 1 of the Corrective Action Investigation  
Plan for Corrective Action Unit 98: Frenchman Flat, Nevada Test Site, Nevada*

## **1.2 Task Purpose and Scope**

### **1.3 Documents that Support the Phase II Frenchman Flat CAI**

*Underground Test Area Subproject Corrective Action Unit 98:  
Frenchman Flat Data Analysis Task, Volume I - Hydrostratigraphic  
Model Documentation Package*

*Underground Test Area Subproject Corrective Action Unit 98:  
Frenchman Flat Data Analysis Task, Volume II - Groundwater Data  
Documentation Package*

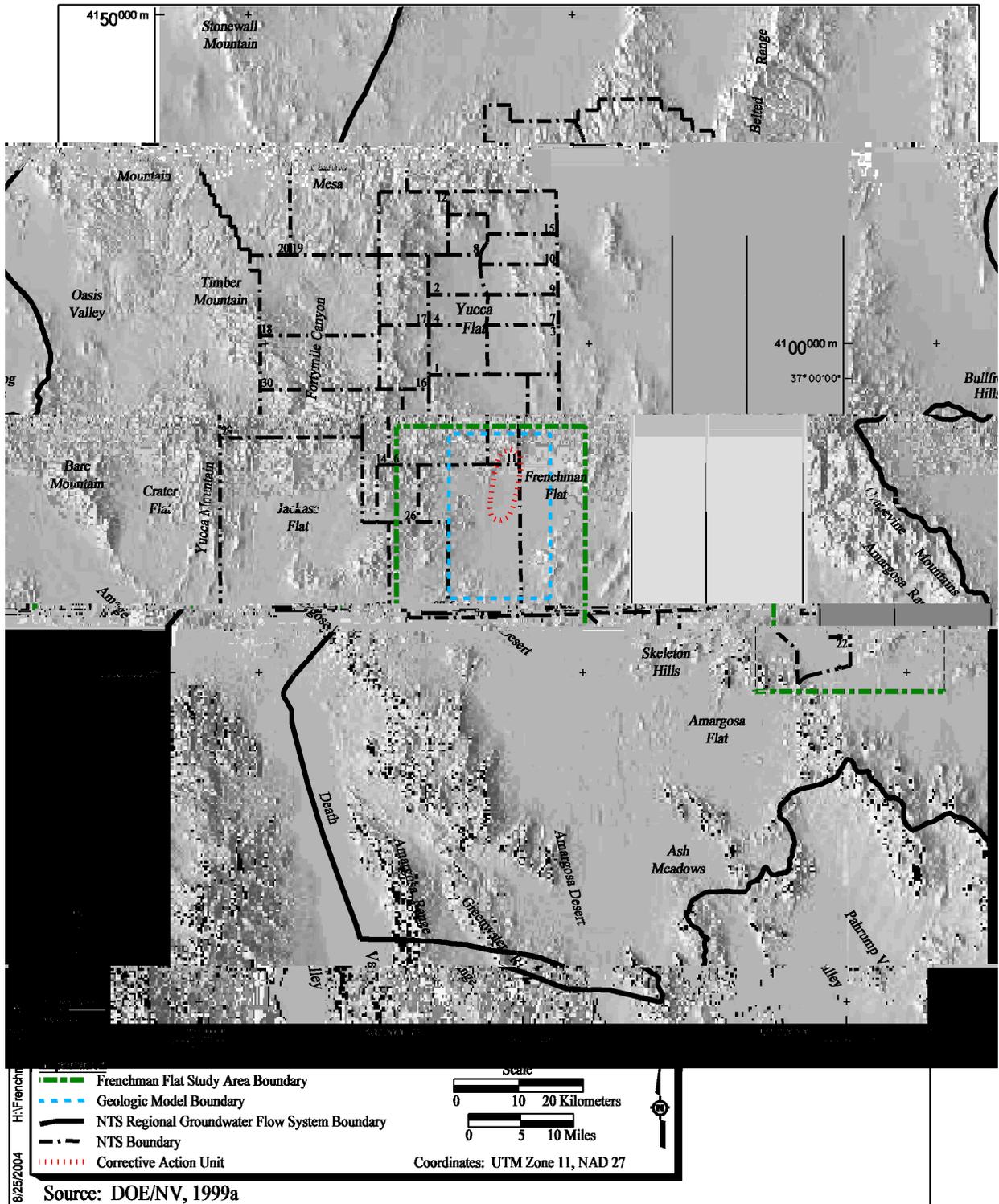


Figure 1-4  
Location of the Frenchman Flat Study Area and Geologic Model Area

*Underground Test Area Subproject Corrective Action Unit 98:  
Frenchman Flat Data Analysis Task, Volume III - Groundwater Flow and  
Contaminant Transport Model Documentation Package*

*External Peer Review Group Report on Frenchman Flat Data Analysis  
and Modeling Task, Underground Test Area Project, Revision No. 0*

*Lessons Learned from the Frenchman Flat Corrective Action  
Groundwater Flow and Radionuclide Transport Model*

*Interpretation of Hydraulic Test and Multiple-Well Aquifer Test Data at  
Frenchman Flat Well Cluster ER-5-3*

*A Hydrostratigraphic Model and Alternatives for the Groundwater Flow  
and Contaminant Transport Model of Corrective Action Unit 98:  
Frenchman Flat, Clark, Lincoln and Nye Counties, Nevada*

*Integrated Analysis Report for Single and Multiple Well Aquifer Testing  
at Frenchman Flat Well Cluster RNM-2s*

*Evaluation of Groundwater Movement in the Frenchman Flat CAU Using  
Geochemical and Isotopic Analysis, Desert Research Institute, Division  
of Hydrologic Sciences*

*Aquifer Test - Analysis of Multiple-Well Aquifer Test RNM-2s,  
Frenchman Flat, Nevada*

*Aquifer Test Report for WW-5c, Area 5, Nevada Test Site*

*Hydraulic Conductivity Profile with Depth for Well ER-5-4 #2*

*Aquifer Test Report for WW-4a, Area 6, Nevada Test Site*

*Addendum to the Frenchman Flat Hydrogeologic Investigation Wells  
Drilling and Completion Criteria*

*Analysis of Water Levels in the Frenchman Flat Area, Nevada Test Site*

*Hydraulic Conductivity Profile with Depth for Monitor Wells ER-5-3,  
ER-5-3 #2 and ER-5-4*

*Results and Preliminary Analysis of the RNM-2s and UE-5n Aquifer Test*

## **1.4 Quality Assurance**

***Data Documentation Evaluation***

***Data Quality Assessment***

***Checking Procedures***

*Standard Methodologies*

*Technical and Peer Reviews*

*Corroboration of Data Through Models*

## **1.5 Document Organization**



## **2.0 Regional Setting and the FF CAU Hydrostratigraphic Framework**

*A Hydrostratigraphic Model and Alternatives for the  
Groundwater Flow and Contaminant Transport Model of Corrective Action  
Unit 98: Frenchman Flat, Lincoln and Nye Counties, Nevada*

### **2.1 Regional Setting**

#### **2.1.1 Regional Hydrogeologic Framework**

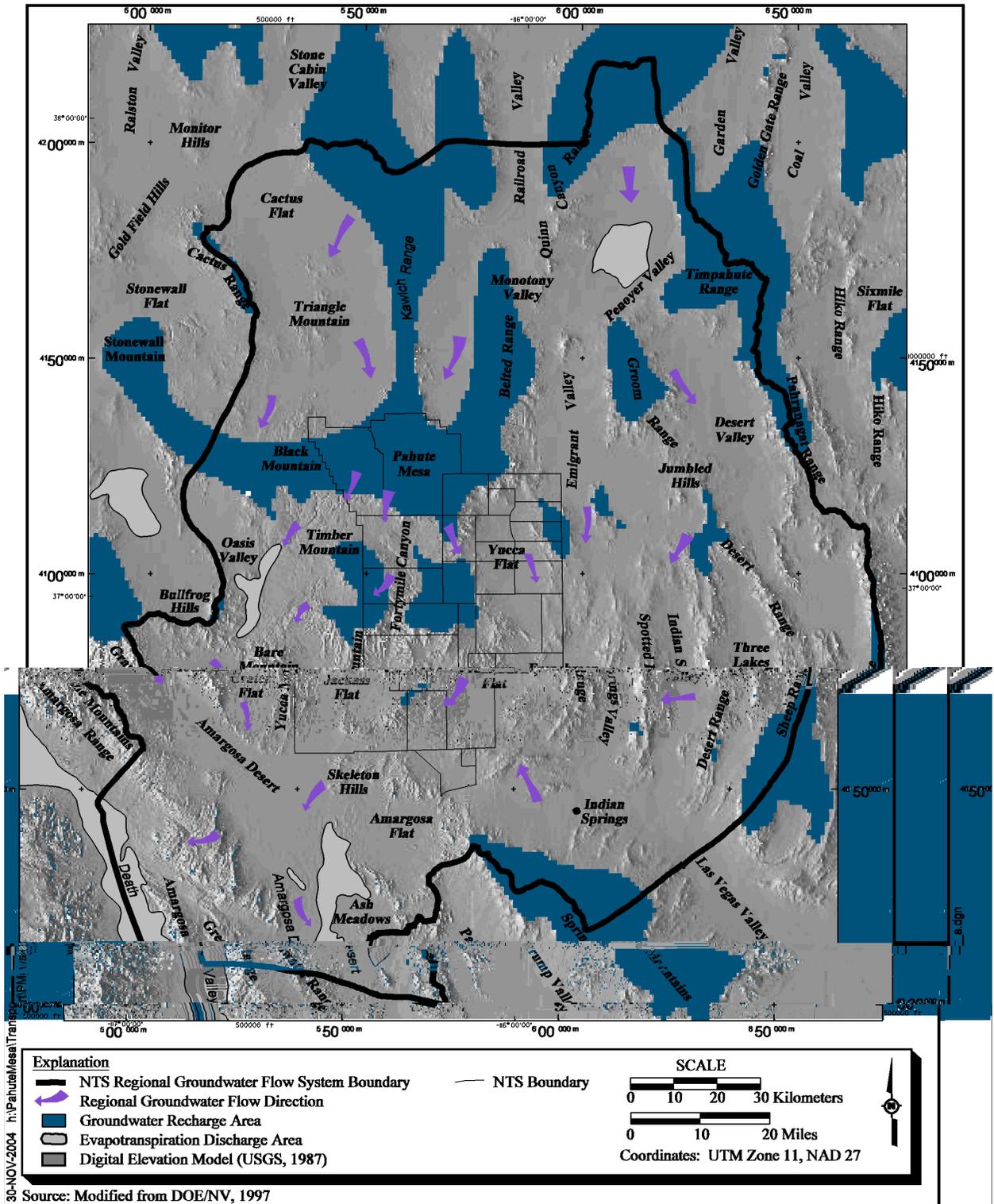


Figure 2-1  
Features of the Nevada Test Site Regional Groundwater Flow System

### **2.1.1.1 Hydrogeologic Units**

*Alluvium HGU*

*Volcanic HGUs*

*Pre-Tertiary HGUs*

**Table 2-1**  
**Hydrogeologic Units of the NTS Regional Model That Occur in the Frenchman Flat Model Area**

Hydrogeologic Unit	Typical Lithologies	Hydrologic Significance
Alluvial Aquifer (AA) (AA is also an HSU in hydrogeologic models)	Unconsolidated to partially consolidated gravelly sand, aeolian sand, and colluvium; thin, basalt flows of limited extent.	Has characteristics of a highly conductive aquifer, but less so where lenses of clay-rich paleocolluvium or playa deposits are present.
Welded-Tuff Aquifer (WTA)	Welded ash-flow tuff, vitric to devitrified	Degree of welding greatly affects interstitial porosity (less porosity as degree of welding increases) and permeability (greater fracture permeability as degree of welding increases).
Vitric-Tuff Aquifer (VTA)	Bedded tuff, ash-fall and reworked tuff; vitric	Constitutes a volumetrically minor HGU; generally does not extend far below the static water-level due to tendency of tuffs to become zeolitic (which drastically reduces permeability) under saturated conditions; significant interstitial porosity (20 to 40 percent); generally insignificant fracture permeability.
Lava-Flow Aquifer (LFA)	Rhyolite lava flows; includes flow breccias (commonly at base) and pumiceous zones (commonly at top)	Generally a caldera-filling unit and/or of local extent; hydrologically complex, wide range of transmissivities, fracture density and interstitial porosity differ with lithologic variations.
Tuff Confining Unit (TCU)	Zeolitic bedded tuff with interbedded, but less significant, zeolitic, nonwelded to partially welded ash-flow tuff	May be saturated but measured transmissivities are very low; may cause accumulation of perched and/or semi-perched water in overlying units.
Intrusive Confining Unit (ICU)	Granodiorite, quartz monzonite	Relatively impermeable; forms local bulbous stocks, north of Rainier Mesa, Yucca Flat, and scattered elsewhere in the NTS regional model area; may contain perched water.
Clastic Confining Unit (CCU)	Argillite, siltstone, quartzite	Clay-rich rocks are relatively impermeable; more siliceous rocks are fractured, but with fracture porosity generally sealed due to secondary mineralization.
Carbonate Aquifer (CA)	Dolomite, limestone	Transmissivity values vary greatly and are directly dependent on fracture frequency.

Source: Adapted from IT (1996d) and BN (2004a)

### ***Intrusives HGU***

#### **2.1.1.2 Hydrostratigraphic Units**

## **2.1.2 Groundwater Occurrence and Movement**

### **2.1.2.1 Groundwater Occurrence**

**Table 2-2**  
**Hydrostratigraphic Units of the Frenchman Flat Area Included**  
**in the NTS Regional Hydrostratigraphic Framework Model**

Hydrostratigraphic Unit Number <sup>a</sup>	Hydrostratigraphic Unit (Symbol)	Dominant Hydrogeologic Unit(s) <sup>b</sup>	Stratigraphic Unit Map Symbols <sup>c</sup>	General Description
20	Alluvial Aquifer (AA) (this term is also used to designate a hydrogeologic unit)	AA	Qay, QTc, Qam, QTa, Qtu, Tybf, Tt	Consists mainly of alluvium that fills extensional basins such as Gold Flat, Crater Flat, Kawich Valley, and Sarcobatus Flat. Also includes generally older Tertiary gravels, tuffaceous sediments, and nonwelded tuffs (where thin) that partially fill other basins such as Oasis Valley and the moat of the Timber Mountain caldera complex.
19	Timber Mountain Aquifer (TMA)	Mostly WTA, minor VTA; TCU within the Tm caldera complex	Tm, Tp	"The uppermost welded tuffs" in the Frenchman Flat model area consists mainly of extra-caldera welded ash-flow tuffs (aquifer-like lithologies). However, the altered intra-caldera equivalent rocks within the Timber Mountain caldera are modeled as confining units.
15	Tuff Confining Unit (TCU)	TCU	Th, Tw, Tc, Tn, To	Mostly zeolitized nonwelded tuffs.
14	Volcanic Aquifer (VA)	WTA, VTA, LFA	Tm, Tp, Tw, Tc	Imprecisely known grouping of volcanic rocks; generally with aquifer-like qualities. Also use as a lumping unit away from the more data-rich NTS.
12	Volcaniclastic Confining Unit (VCCU)	TCU, minor AA, lesser CA	Tgp, Tgw	Complex three-dimensional distribution of zeolitic nonwelded tuff, gravels, mudstones, and limestones. Present in the southern portion of the Frenchman Flat model area.
11	Volcanics undifferentiated (VU)	WTA,TCU, lesser LFA	Potentially includes all Tertiary volcanic units	All Quaternary and Tertiary volcanics outside the NTS proper and the proximal NTS caldera complex.
8	Upper Clastic Confining Unit (UCCU)	CCU	MDC, MDe	Late Devonian through Mississippian siliciclastic rocks. Present in the northeastern corner (CP Basin) of the Frenchman Flat model area.
7	Lower Carbonate Aquifer (LCA)	CA	Dg through Cc	Cambrian through Devonian mostly limestone and dolomite. Widespread throughout the Frenchman Flat model area.
6	Lower Clastic Confining Unit (LCCU)	CCU	Cc, Cz, Czw, Zs, Zj	Late Proterozoic through Early Cambrian siliciclastic rocks. Widespread throughout the Frenchman Flat model area.

<sup>a</sup>UGTA regional model (IT, 1996d)

<sup>b</sup>See [Table 2-1](#) for definitions of HGUs

<sup>c</sup>Refer to Slate et al. (1999) and Ferguson et al. (1994) for definitions of stratigraphic unit map symbols

### **2.1.2.2 Groundwater Movement**

## **2.2 Frenchman Flat Hydrogeologic Framework**

*A Hydrostratigraphic Model for the Groundwater Flow and Contaminant Transport Model of Corrective Action Unit 98: Frenchman Flat, Nye County, Nevada*

### **2.2.1 Phase II Data Collection Activities**

### **2.2.1.1 Phase II Well Drilling**

*Frenchman Flat Hydrogeologic  
Investigation Wells Drilling and Completion Criteria*

#### **2.2.1.1.1 Well Cluster ER-5-3**

#### **2.2.1.1.2 Well Cluster ER-5-4**



### **2.2.1.2 Geophysical Investigations**

#### ***2.2.1.4 Natural-Source Magnetotelluric***

#### ***2.2.2 HSU Model Development***

### **2.2.2.1 Base Model**

### **2.2.2.2 Alternative Models**

®

A  
*Hydrostratigraphic Model for the Groundwater Flow and Contaminant Transport  
Model of Corrective Action Unit 98: Frenchman Flat Nye County, Nevada*

### **2.2.3 HSU Alternative Model Screening**

### **2.2.4 Base HSU Model**

#### **2.2.4.1 Structural Features**

#### **2.2.4.2 Hydrogeologic Units**

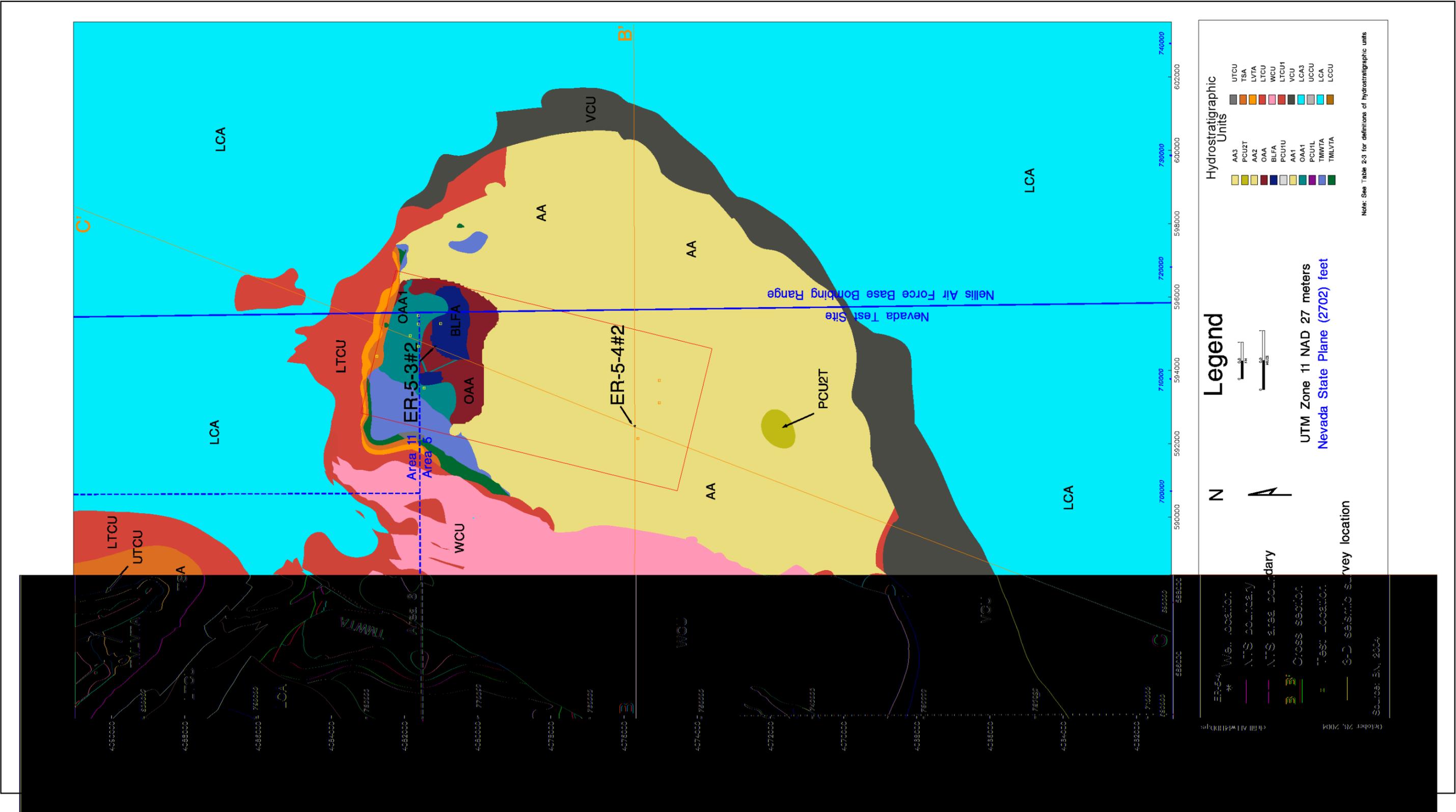


Figure 2-3  
Hydrostratigraphic Unit Surface Map at the Water Table for the Frenchman Flat Model Area

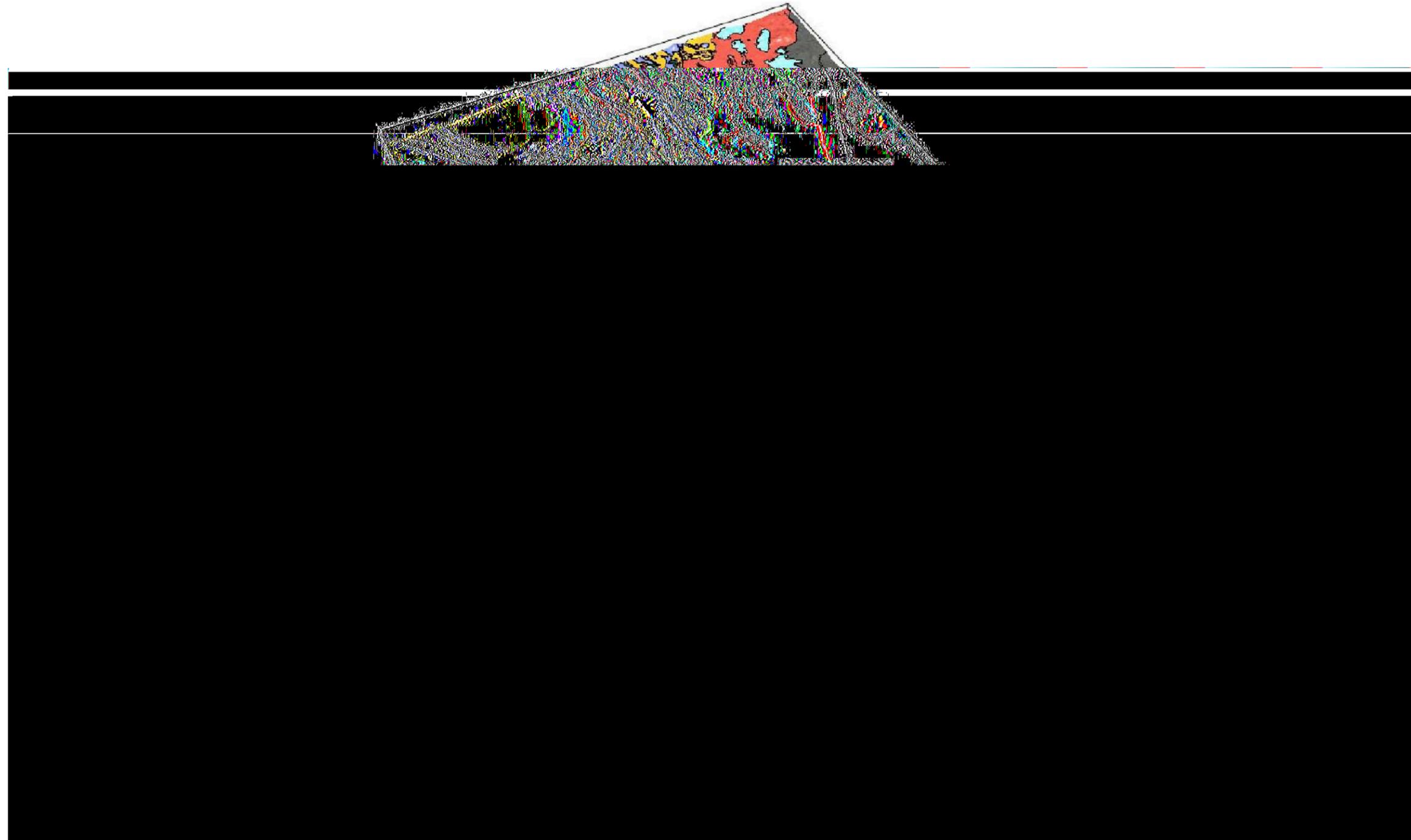


Figure 2-4  
3-D Image of Major Fault Structures  
(Alluvial Sequence not Displayed)

### ***2.2.4.3 Hydrostratigraphic Units***

**Table 2-3  
Hydrostratigraphic Units of the Frenchman Flat Hydrostratigraphic Framework Model**

Hydrostratigraphic Unit (Symbol)	Dominant Hydrogeologic Unit(s) <sup>a</sup>	Stratigraphic Unit Map Symbols <sup>b</sup>	General Description
Alluvial Aquifer (AA, AA1, AA2, AA3) <sup>c</sup>	AA	Qay, QTc, Qai, QTa, Tt	Consists mainly of alluvium that fills extensional basins. Also includes generally older Tertiary gravels, and very thin air-fall tuffs.
Playa Confining Unit (PCU2T)	PCU	Qp	Clayey silt and sandy silt. Forms the Frenchman Flat playa (dry lake).
Basalt Lava Flow Aquifer (BLFA)	LFA	Tybf	Several (possibly dissected) basalt flows recognized in the middle of the alluvial section of the north eastern Frenchman Flat. Related to other basalt flows in Nye Canyon.
Older Altered Alluvial Aquifer (OAA and OAA1) <sup>c</sup>	AA	QTa	Older, denser, zeolitized alluvium recognized only in northern Frenchman Flat.
Older Playa Confining Unit (PCU1U and PCU1L) <sup>c</sup>	PCU	QTp	Deep, subsurface playa deposits in the deepest portion of Frenchman Flat. Recognized in Well ER-5-4#2 and with 3-D seismic data.
Timber Mountain-Welded Tuff Aquifer (TM-WTA)	Mostly WTA, minor VTA	Tma, Tmab, Tmr	Consists mainly of extra-caldera welded ash-flow tuffs of Ammonia Tanks Tuff and Rainier Mesa Tuff. Unit occurs mostly in north and central Frenchman Flat. Prolific aquifer when saturated.
Timber Mountain-Lower Vitric Tuff Aquifer (TM-LVTA)	VTA	Tma, Tmab, Tmr, Tmrh, Tp, Th	Defined to include all unaltered (nonzeolitic) nonwelded and bedded tuffs below the welded Tmr and above the level of pervasive zeolitization. The presence of the welded Tpt (see TSA) complicates this general description.
Upper Tuff Confining Unit (UTCU)	TCU	Tmr (lower most), Tmrh, Tp	Relatively thin TCU above the TSA. Grouped with the LTCU where the TSA is not present.
Topopah Spring Aquifer (TSA)	WTA	Tpt	The welded ash-flow lithofacies of the Topopah Spring Tuff in Massachusetts Mtn/French Peak area and north-central Frenchman Flat.
Lower Vitric Tuff Aquifer (LVTA)	VTA	Th	Relatively thin VTA unit below the TSA. Grouped with the TM-LVTA where TSA is not present.
Lower Tuff Confining Unit (LTCU)	TCU, minor WTA	Th, Tw, Tc, Tn, To	Generally includes all the zeolitic nonwelded and bedded tuffs in southeastern NTS. May include all units from base of Tmr to top of Paleozoic-age rocks.
Wahmonie Confining Unit (WCU)	TCU, minor LFA	Tw (Twu, Twm, Twl, Twls)	Mixture of lava flows debris flows, layers, ash-flows, and air-falls. Typically zeolitic, argillic, or hydrothermally altered. Grades/interfingers laterally with the LTCU.
Volcaniclastic Confining Unit (VCU)	TCU, minor AA and CA	Tgp, Tgw	Older Tertiary sedimentary rocks of variable lithologies including silts, clays, limestone, gravels and tuffaceous units. Present in southeastern half of Frenchman Flat.
Lower Carbonate Aquifer - Thrust Plate (LCA3)	CA	Dg through Cc	Cambrian through Devonian, mostly limestone and dolomite, rocks that occur in the hanging wall of the Belted Range thrust fault. Present only in the northwest corner (CP Basin) of the model area.
Upper Clastic Confining Unit (UCCU)	CCU	Mc, MDe	Late Devonian through Mississippian siliciclastic rocks. Present only in the northwest corner (CP Basin) of the model area, northwest of the Cane Spring fault and southwest of the Topgallant fault.
Lower Carbonate Aquifer (LCA)	CA	Dg through Cc	Cambrian through Devonian mostly limestone and dolomite. Regional carbonate aquifer present through the model area.
Lower Clastic Confining Unit (LCCU and LCCU1) <sup>c</sup>	CCU	Cc, Cz, CzW, Zs, Zj	Late Proterozoic through Early Cambrian siliciclastic rocks. Hydrologic "basement" present at great depth in the model area

Source: BN (2004a)

<sup>a</sup>See Table A.1-1 for definitions of HGUs.

<sup>b</sup>Refer to Slate et al. (1999) and Ferguson et al. (1994) for definitions of stratigraphic unit map symbols.

<sup>c</sup>The HSUs are hydrologically equivalent except for position relative to another HSU. The subdivisions are necessary to address operational requirements of the EarthVision modeling software.

**Table 2-4**  
**Correlation of Hydrostratigraphic Units of the Frenchman Flat Model and Earlier Models**

Hydrostratigraphic Unit <sup>a</sup>	Symbol This Report	Correlation with Phase I Frenchman Flat Model <sup>b</sup>	Correlation with NTS Phase I <sup>c</sup>	Correlation with Yucca Flat Model <sup>d</sup>	Correlation with Pahute Mesa/Oasis Valley Model <sup>e</sup>
Playa Confining Unit	PCU2T	AA <sup>f</sup>	AA <sup>f</sup>	PCU	Not present
Alluvial Aquifer	AA, AA1, AA2, AA3 <sup>i</sup>			AA	AA
Basalt Lava Flow Aquifer	BLFA			BLFA	YVCM
Older Altered Alluvial Aquifer	OAA, OAA1 <sup>i</sup>			Not present	Not present
Older Playa Confining Unit	PCU1U, PCU1L <sup>i</sup>			Not present	Not present
Timber Mountain-Welded Tuff Aquifer	TM-WTA	TMA <sup>f</sup>	VA <sup>f</sup>	TM-WTA	TMA
Timber Mountain-Lower Vitric Tuff Aquifer	TM-LVTA			TM-LVTA	PVTA
Upper Tuff Confining Unit	UTCU			UTCU <sup>d</sup> (YF-UCU) <sup>g</sup>	UPCU, LPCU
Topopah Spring Aquifer	TSA			TSA	TSA
Lower Vitric Tuff Aquifer	LVTA			LVTA	PVTA
Lower Tuff Confining Unit	LTCU, LTCU1 <sup>i</sup>	TCU	BCU	LTCU <sup>d</sup> (YF-LCU) <sup>g</sup>	CFCU, BFCU, PBRM <sup>h</sup>
Wahmonie Confining Unit	WCU	WCU		Not present	Not present
Volcaniclastic Confining Unit	VCU	VCU	VCCU	Not present	Not present
Lower Carbonate Aquifer-Thrust Plate	LCA3	Not present	LCA3	LCA3	LCA3
Upper Clastic Confining Unit	UCCU	Not present	UCCU	UCCU	UCCU
Lower Carbonate Aquifer	LCA	PreT <sup>f</sup>	LCA	LCA	LCA
Lower Clastic Confining Unit	LCCU		LCCU	LCCU	LCCU

<sup>a</sup>If correlative to more than one HSU, all HSUs are listed.

<sup>b</sup>See IT (1998) for explanation initial Frenchman Flat model (1998) nomenclature.

<sup>c</sup>See IT (1996a) for explanation of the UGTA Phase I HSU nomenclature.

<sup>d</sup>Documentation for final Yucca Flat model is in progress.

<sup>e</sup>See BN (2002) for explanation of Pahute Mesa/Oasis Valley HSU nomenclature.

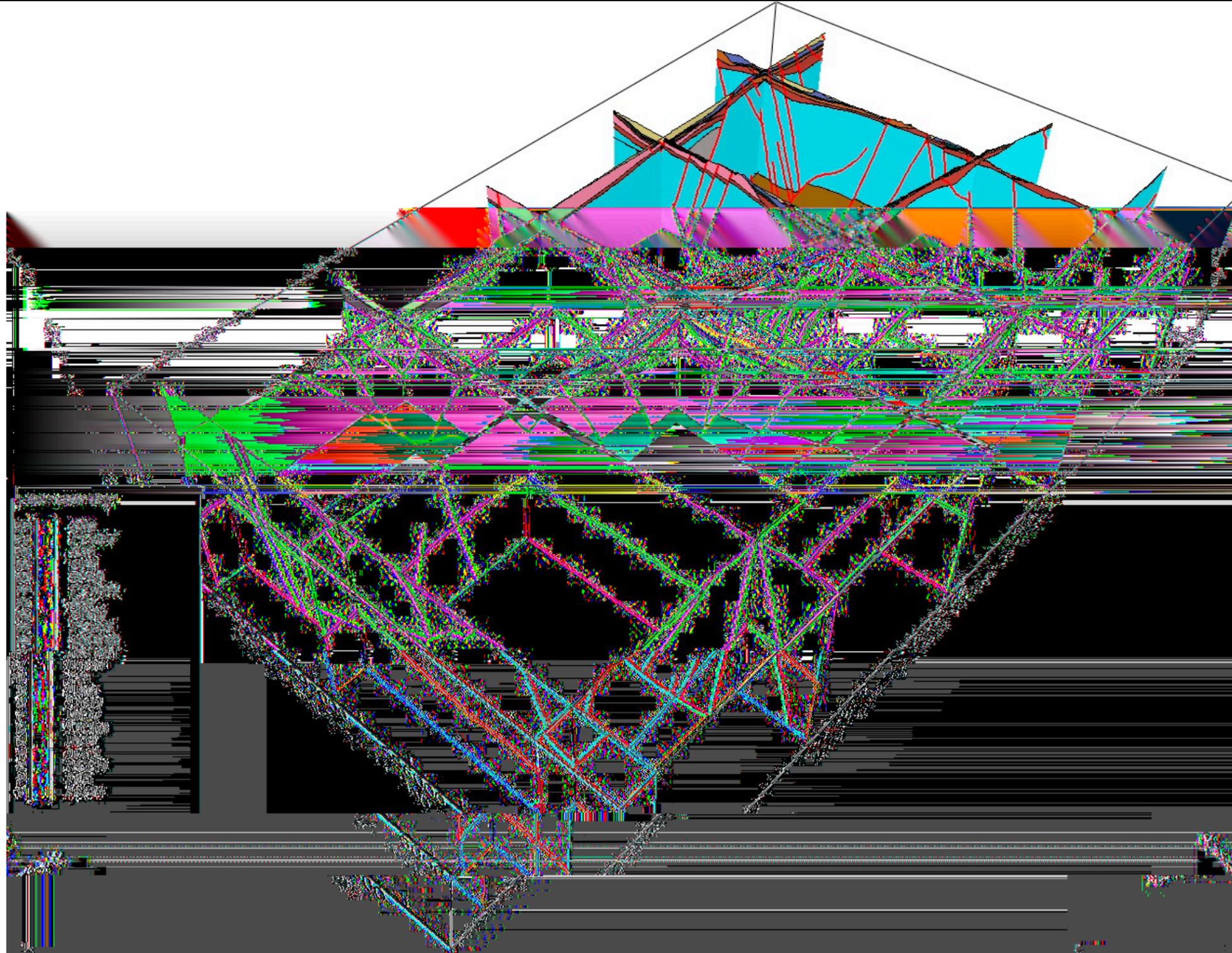
<sup>f</sup>Not subdivided.

<sup>g</sup>See Gonzales et al. (1998) for explanation of the Yucca Flat HSU nomenclature.

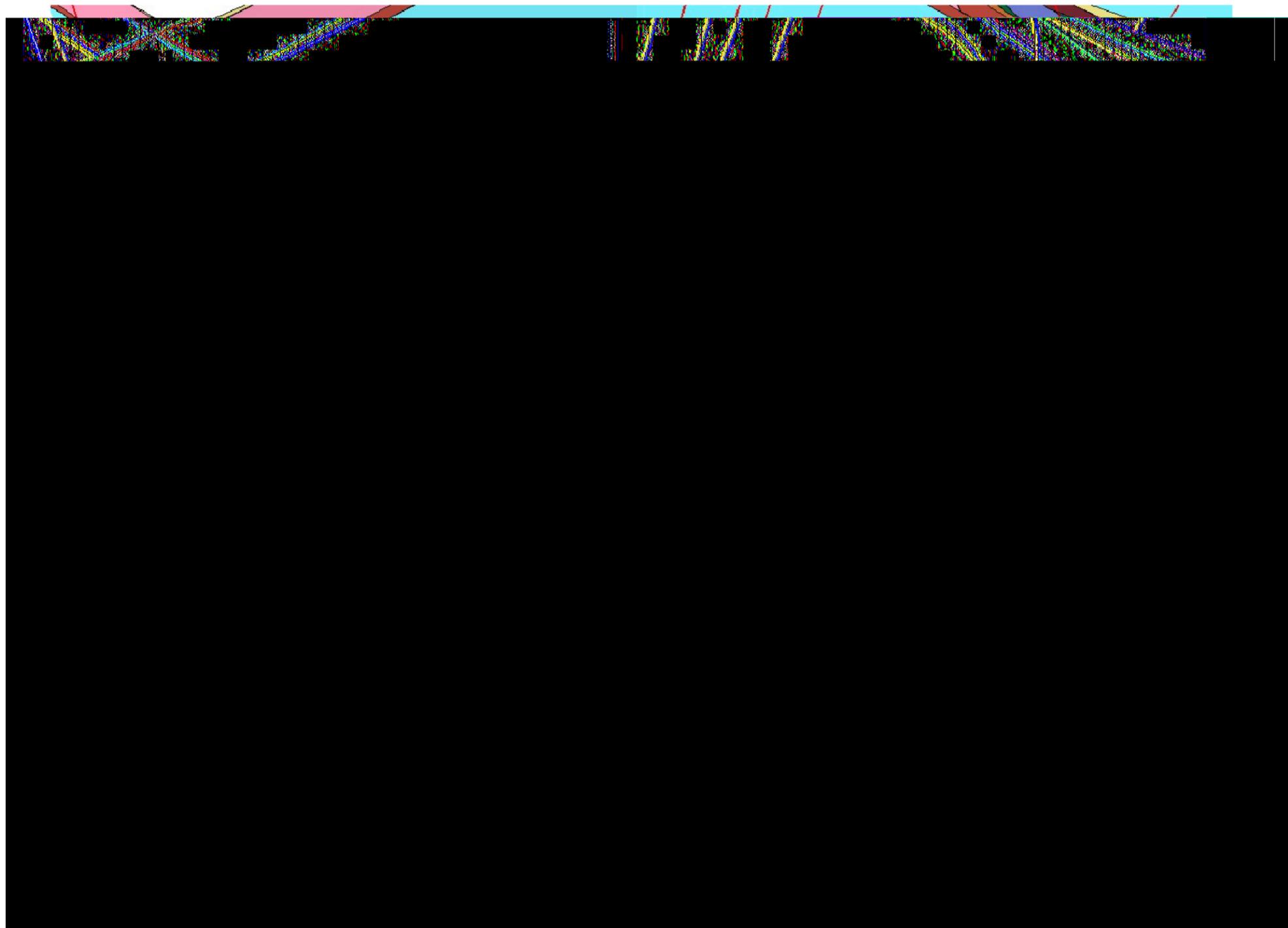
<sup>h</sup>Minor embedded ash-flow tuffs may have better aquifer properties than the bulk of this HSU.

<sup>i</sup>The HSUs are hydrologically equivalent except for position relative to another HSU. The subdivisions are necessary to address operational requirements of the EarthVision modeling software.

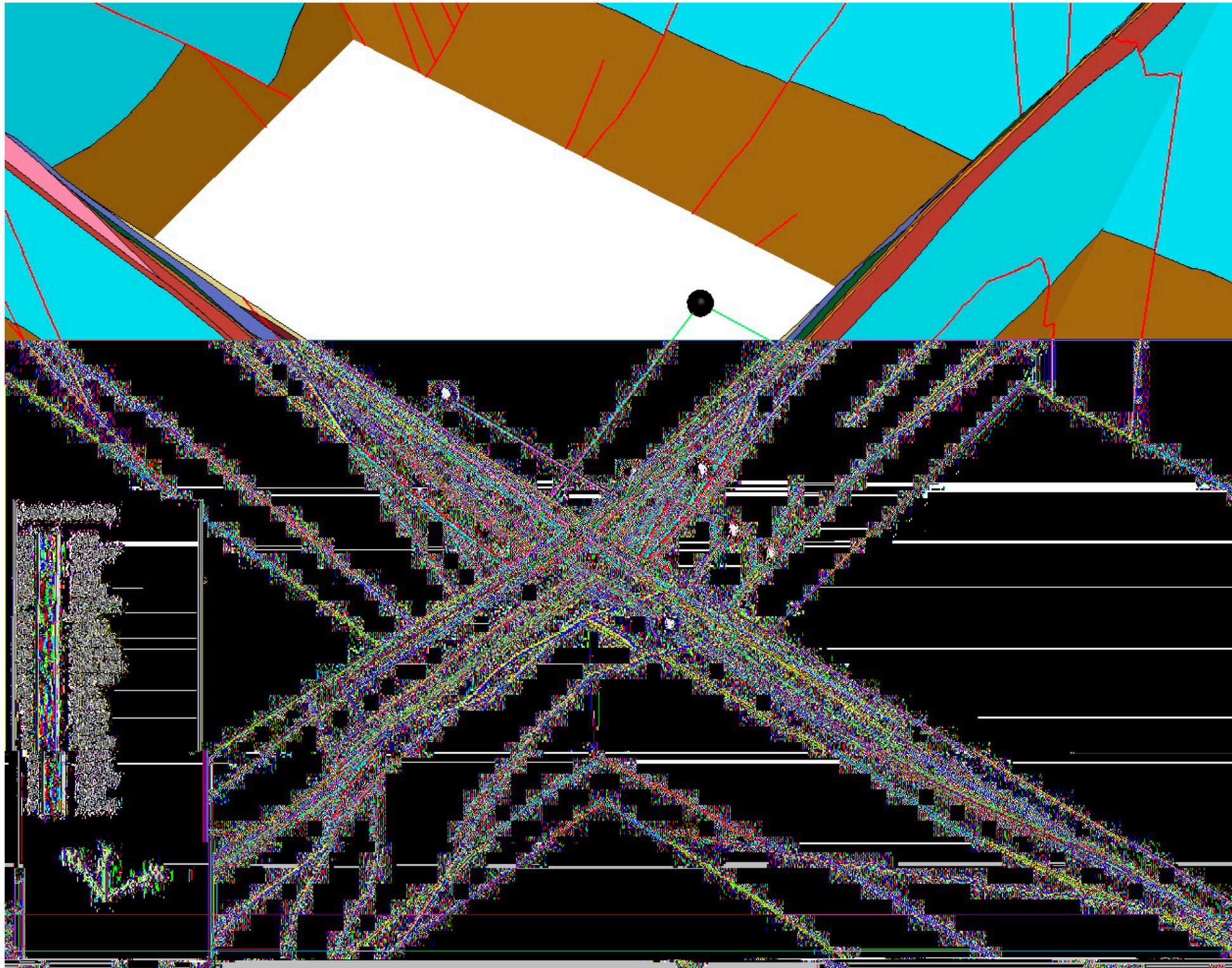




**Figure 2-6**  
**Fence Diagram of Phase II Frenchman Flat Hydrostratigraphic Model**  
**Solid Black Spheres Indicate Cavity Locations**  
(Sphere Size is not Proportional to Cavity Radius)



**Figure 2-7**  
**Enlarged View of the Central Testing Area on the Frenchman Flat Fence Diagram,**  
**Solid Black Spheres Indicate Cavity Locations**  
(Sphere Size is not Proportional to Cavity Radius)



**Figure 2-8**  
**Enlarged View of the Northern Testing Area in Frenchman Flat**  
**Solid Black Spheres Indicate Cavity Locations**  
(Sphere Size is not Proportional to Cavity Radius)

## **3.0 CAU Modeling Approach**

### **3.1 Overview of CAU Modeling Approach**

#### ***Integrated 3-D Model Development***

***Total System Model***

***CAU Model Validation***

***Data Requirements***

***Groundwater Flow***

*Contamination Sources*

*Transport Parameters*

### **3.2 Historical and Current Modeling Strategy for Frenchman Flat CAU**

### **3.3 *Groundwater Flow Modeling Approach and Data Requirements***

#### **3.3.1 *Simulation Objectives***

#### **3.3.2 *Geologic Model***

### **3.3.3 Model Parameters**

### **3.3.4 CAU Model Boundaries and Boundary Conditions**

### **3.3.5 Select Computer Code**



*Saturated Zone Flow Model*

*Calibration of the Site-Scale*

### **3.3.6 Grid Generation**

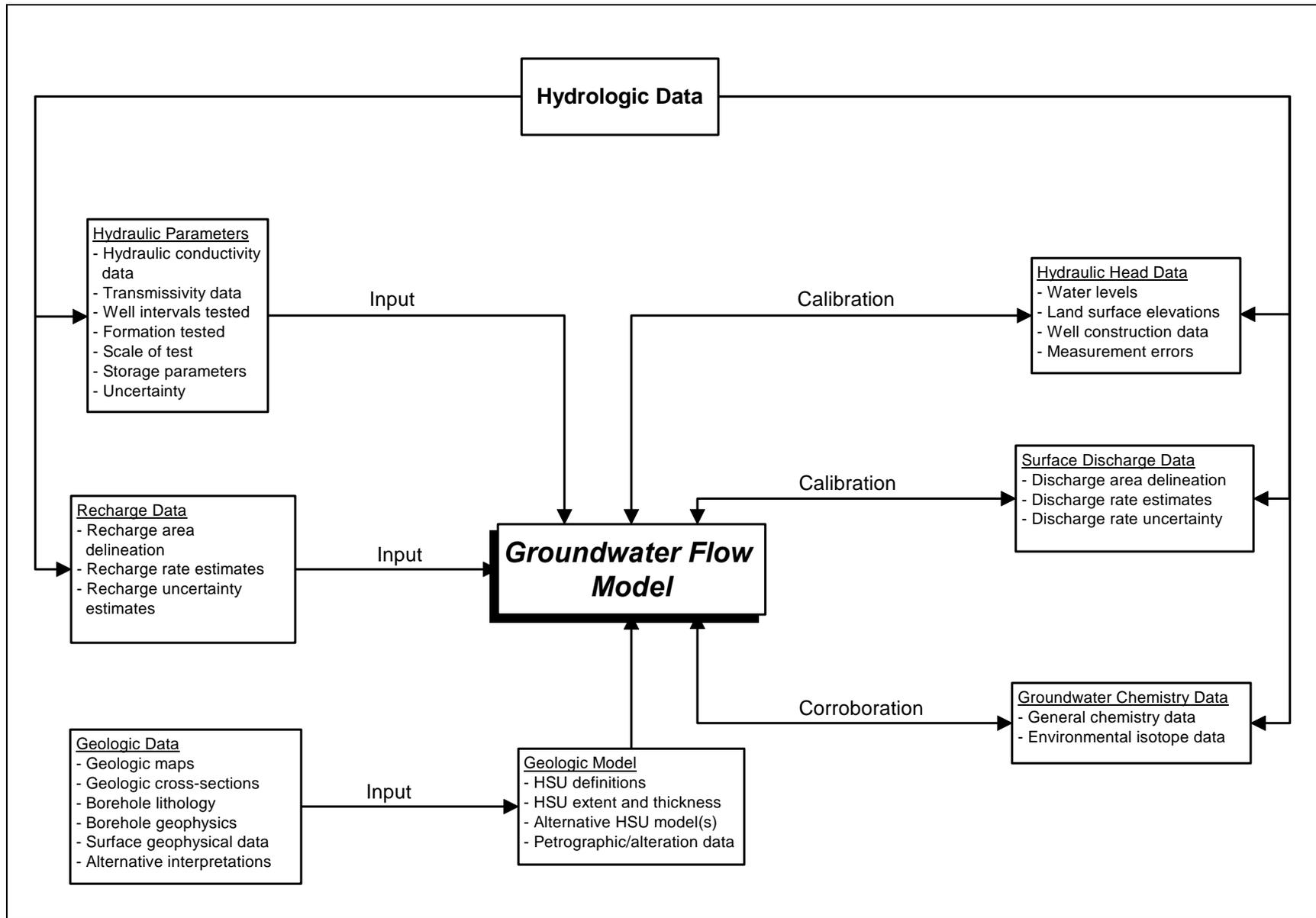
### **3.3.7 Flow Model Calibration**

*Standard Guide for Calibrating a  
Ground-Water Flow Model Application*

### **3.3.8 Sensitivity Analysis**

### **3.3.9 Model Documentation**

## **3.4 Data Requirements**



**Figure 3-1**  
**Data Types and Utilization in the Groundwater Flow Model (SNJV, 2004a)**



## **4.0** *Data Analysis*

### **4.1** *Data Compilation*

#### **4.1.1** *Data Types*

##### **4.1.1.1** *Description of Hydrologic Data Types*

***Hydraulic Properties***

***Recharge***

***Surface Discharge***

***Hydraulic Heads***

***Lateral Boundary Fluxes***

***Groundwater Chemistry***

***4.1.1.2 Supporting Information***

#### **4.1.2 Data Sources**

##### ***FF-Specific Data***

*NTS Investigation Area Data*

*Yucca Mountain Data*

*Other Data*

## **4.2 Data Transfer Methodology**

#### **4.2.1 General Transfer Methodology**

#### **4.2.2 Factors Influencing Flow and Transport Parameters**

**Rock Type**

*Deposition and Alteration History*

*Structural Setting and Mechanical Alteration*

*Groundwater Chemical Composition*

#### **4.2.3 YMP Data Transfer**

### ***4.3 Qualification of Data and Data Documentation***

#### ***4.3.1 Data Documentation Qualification***

*Level 1*

*Level 2*

*Level 3*

*Level 4*

*Level 5*

### **4.3.2 Data Quality Evaluation**

#### **4.4 Analysis Methods Used**

#### **4.5 Data Analysis Limitations**

## **5.0** *Hydraulic Parameters*

### **5.1** *Objectives*

## **5.2 *Data Types and Prioritization***

## **5.3 *Data Compilation and Evaluation***

### **5.3.1 Data Sources**

### **5.3.2 Supporting Data**

***Site Information***

***Test Interval Information***

*Hydraulic Test Information*

*Test Interpretation Information*

**5.3.3 Data Qualification**

*Data Documentation Evaluation*

*Data Quality Evaluation*

#### **5.3.4 Data Transferability**

*Hydrologic Data for the Groundwater Flow and Contaminant Transport Model of  
Corrective Action Units 101 and 102: Central and Western Pahute Mesa, Nye  
County, Nevada*

## **5.4 Hydraulic Parameters**

### **5.4.1 Scales of Testing and Associated Uncertainties**

*in situ*

*in situ*

#### **5.4.2 Test Analysis and Associated Uncertainties**

#### **5.4.3 Characterization Data**

#### **5.4.4 Analysis of Different Test Results for a Well**

## **5.5    *Analysis of Hydraulic Conductivity Data***

### 5.5.1 Methodology



### **5.5.2 Kolmogorov-Smirnov Test for Log Normality**

### **5.5.3 Spatial Distribution of Data**

## **5.6 Analysis Results**

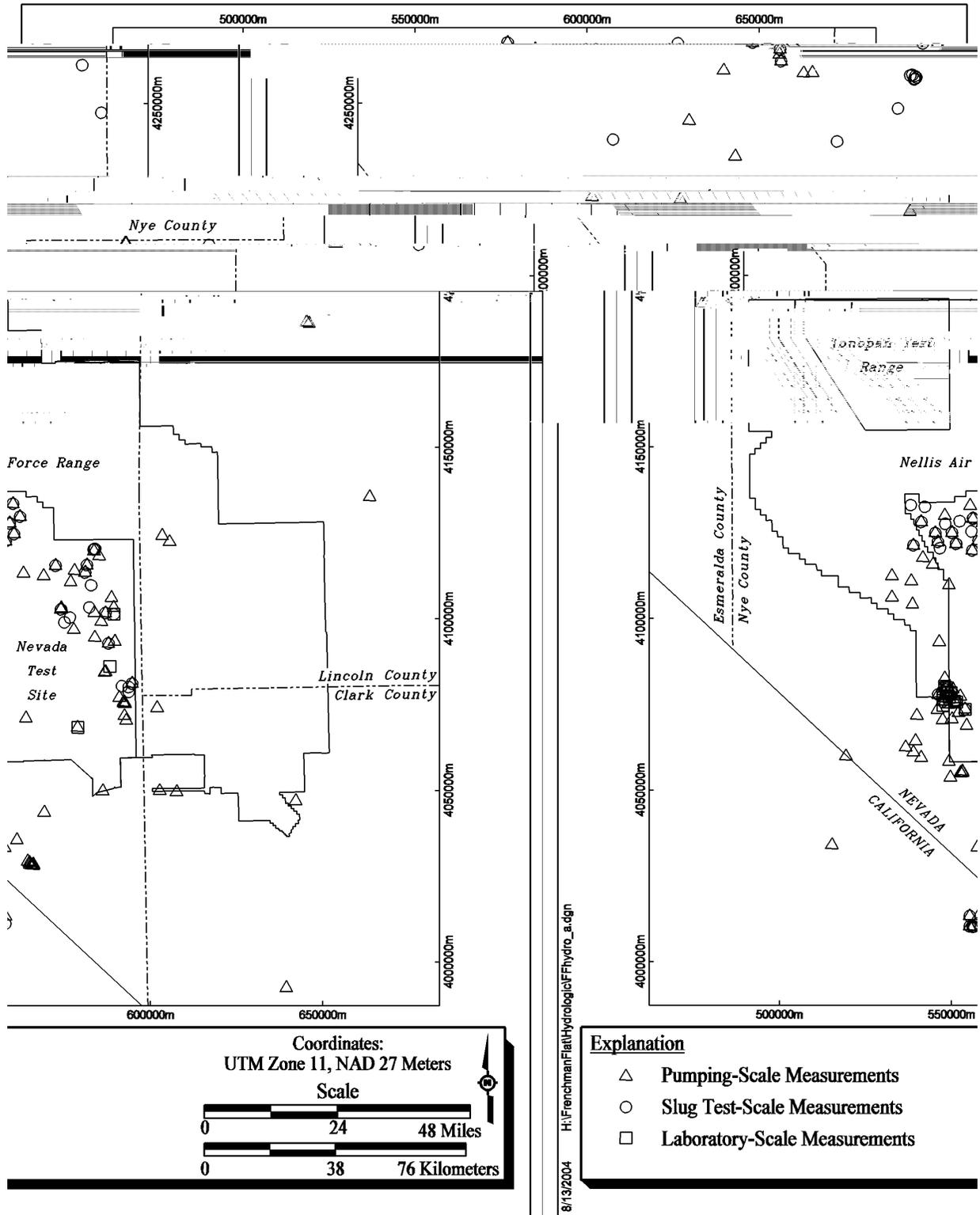
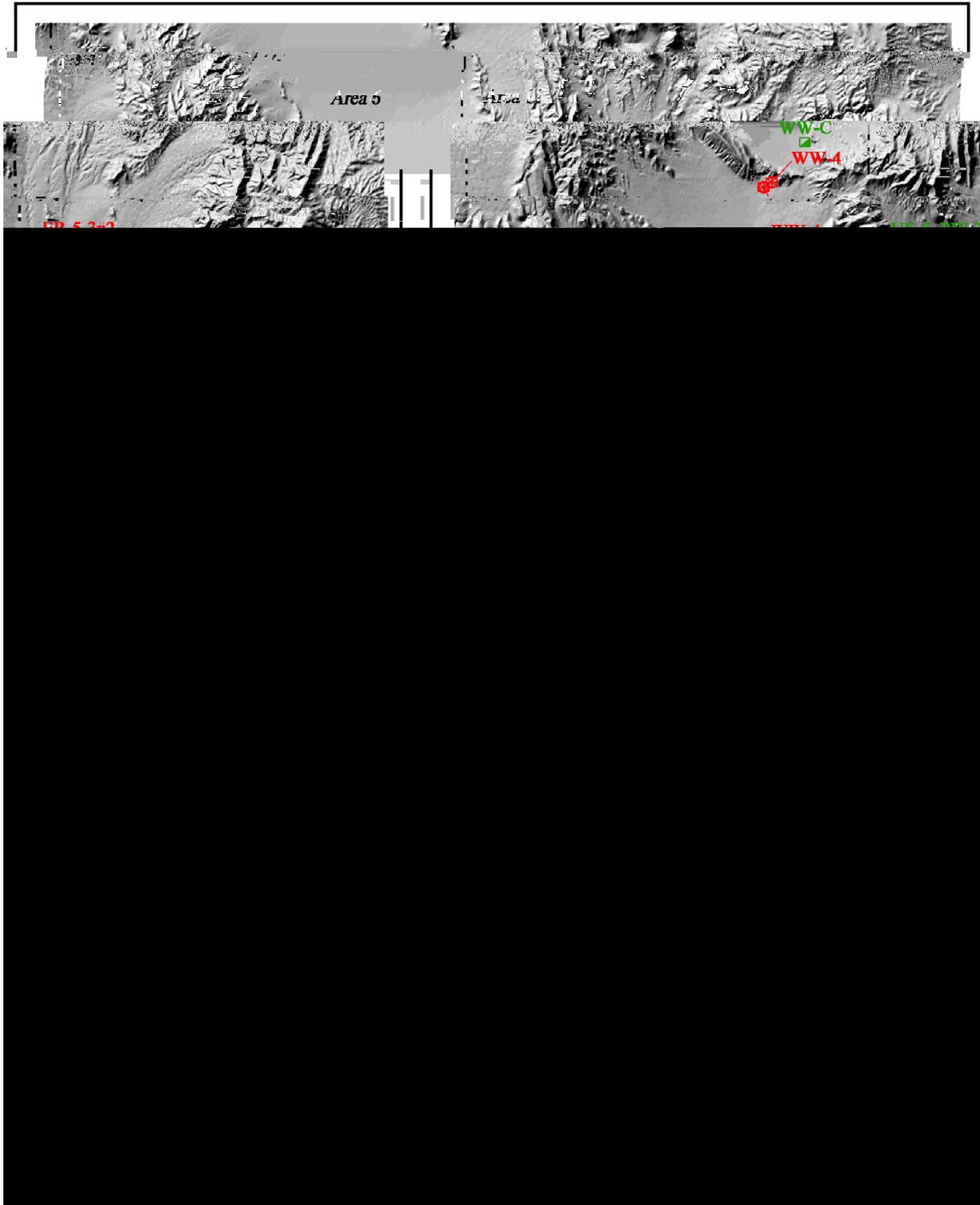


Figure 5-1  
NTS Investigation Area Locations of Hydraulic Conductivity Data



**Figure 5-2**  
**Frenchman Flat Hydraulic Property Data Locations**

**Table 5-1  
Summary of FF-Specific K Data Analysis**

HSU	Mean	Standard Deviation	Count	Minimum	Maximum	K-S Critical Statistic D*	K-S Statistic D	Accept Log Normal Hypothesis	95% Confidence Interval Bounds	
	log 10 K (m/day)			log 10 K (m/day)					Lower	Upper
	log 10 K (m/day)			log 10 K (m/day)					log 10 K (m/day)	
<b>Pumping-Scale Data</b>										
AA	-0.22	0.80	17	-1.22	1.66	0.20	0.33	Yes	-1.79	1.34
LCA	-0.13	1.43	5	-1.51	2.10	0.21	0.61	Yes	-2.93	2.66
TM-WTA TM-LVTA	1.29	0.22	5	0.95	1.57	0.15	0.61	Yes	0.85	1.73
LTCU	-1.08	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Slug Test-Scale Data</b>										
AA	-0.25	N/A	2	-0.53	0.03	N/A	N/A	N/A	N/A	N/A
BLFA	-0.38	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TM-WTA	0.08	N/A	2	0.08	0.09	N/A	N/A	N/A	N/A	N/A
<b>Laboratory-Scale Data</b>										
AA	-0.34	0.73	50	-2.92	0.70	0.10	0.19	Yes	-1.78	1.09
TM-WTA	-0.47	0.76	11	-1.89	0.45	0.13	0.41	Yes	-1.96	1.03
LCA	-3.68	1.38	9	-6.00	-1.70	0.15	0.45	Yes	-6.38	-0.98

N/A = Not applicable

### 5.6.1 FF-Specific K-Data Analyses

**Table 5-2**  
**Summary of NTS Investigation Area K Data Analysis**

HSU	Mean	Standard Deviation	Count	Minimum	Maximum	K-S Critical Statistic D*	K-S Statistic D	Accept Log Normal Hypothesis	95% Confidence Interval Bounds	
	log 10 K (m/day)			log 10 K (m/day)					Lower	Upper
	log 10 K (m/day)			log 10 K (m/day)					log 10 K (m/day)	
<b>Pumping-Scale Data</b>										
AA	0.25	0.88	29	-1.22	2.12	0.13	0.25	Yes	-1.47	1.96
LCA	-0.02	1.30	57	-2.12	2.65	0.12	0.18	Yes	-2.56	2.52
LCCU	0.40	0.36	2	0.14	0.65	N/A	N/A	N/A	N/A	N/A
LTCU	-1.08	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TMA	-0.24	0.93	28	-2.25	1.67	0.12	0.26	Yes	-2.06	1.59
UCCU	-2.22	1.26	2	-3.11	-1.33	N/A	N/A	N/A	N/A	N/A
VA	0.21	0.98	38	-1.77	1.79	0.09	0.22	Yes	-1.70	2.12
VCU	-1.03	1.51	110	-5.02	1.90	0.06	0.13	Yes	-4.00	1.93
<b>Slug Test-Scale Data</b>										
AA	-1.11	1.33	23	-4.02	0.75	0.08	0.28	Yes	-3.71	1.49
LCA	-0.82	0.40	8	-1.48	-0.32	0.13	0.48	Yes	-1.60	-0.04
TMA	-2.27	1.15	23	-4.98	-1.11	0.16	0.28	Yes	-4.51	-0.02
UCCU	-1.64	0.79	7	-2.65	-0.42	0.17	0.51	Yes	-3.18	-0.09
VA	-1.67	1.02	11	-3.53	0.09	0.12	0.41	Yes	-3.67	0.34
VCU	-2.16	1.23	86	-6.00	-0.01	0.12	0.15	Yes	-4.58	0.26
<b>Laboratory-Scale Data</b>										
AA	-0.37	0.79	63	-3.09	0.84	0.09	0.17	Yes	-1.92	1.18
LCA	-5.25	1.67	45	-7.54	-1.67	0.11	0.20	Yes	-8.52	-1.98
LCCU	-6.11	0.62	14	-7.39	-4.69	0.16	0.36	Yes	-7.33	-4.88
UCCU	-5.11	0.41	3	-5.52	-4.70	N/A	N/A	N/A	N/A	N/A
VA	-3.67	2.20	365	-7.67	2.51	0.10	0.07	N/A	-7.99	-0.65
VCU	-4.41	1.55	596	-8.13	4.60	0.07	0.06	N/A	-7.44	-1.37

N/A = Not applicable

**Table 5-3  
Summary of Specific Storage Data Analysis**

Frenchman Flat Geologic Model Area										
HSU	Specific Storage (1/m)									
	Mean	Standard Deviation	Count	Minimum	Maximum					
AA	8.0E-05	1.35E-04	3	8.35E-07	2.36E-04					
LCA	2.81E-05	3.64E-04	2	2.40E-05	5.38E-04					
TM-WTA, TM-LVTA	6.81E-06	9.63E-06	3	1.07E-06	1.79E-05					
NTS Investigation Area										
HSU	Specific Storage (1/m)					Fracture Specific Storage (1/m)				
	Mean	Standard Deviation	Count	Minimum	Maximum	Mean	Standard Deviation	Count	Minimum	Maximum
AA	7.70E-05	2.04E-04	15	1.40E-07	7.90E-04	N/A	N/A	N/A	N/A	N/A
LCA	5.22E-03	1.07E-02	14	2.30E-07	3.17E-02	1.27E-05	7.34E-06	3	8.33E-06	2.12E-05
LCCU	3.45E-03	N/A	2	4.60E-05	6.86E-03	N/A	N/A	N/A	N/A	N/A
UCCU	3.02E-05	5.61E-05	10	8.51E-08	1.82E-04	N/A	N/A	1	1.79E-06	1.79E-06
VCU	6.82E-05	1.75E-04	30	4.38E-10	8.44E-04	7.47E-06	1.04E-06	5	5.91E-07	2.43E-05

N/A = Not applicable

### 5.6.1.1 AA HSU

**Table 5-4  
Summary of Frenchman Flat HSU Assigned Hydraulic Properties**

FF Phase II Hydrostratigraphic Units (not in strict stratigraphic order)	Symbol	Correlation with UGTA Phase I HSUs	Crosswalk to UGTA Regional HSUs	Data Source	Data Analysis Results					95% Confidence Interval	
					Mean	Standard Deviation	Minimum	Maximum	Log Normal Distribution	Lower Bound	Upper Bound
					Log 10 K (m/day)				Yes/No	Log 10 K (m/day)	
Alluvial Aquifer	AA	AA	AA	FF-Specific	-0.22	0.80	-1.22	1.66	Yes	-1.79	1.34
Older altered Alluvial Aquifer	OAA			NTS Area	0.25	0.88	-1.22	2.12	Yes	-1.47	1.96
Basalt Lava Flow Aquifer	BLFA		VA	NTS Area	0.21	0.98	-1.77	1.79	Yes	-1.70	2.12
Timber Mountain-Welded Tuff Aquifer	TM-WTA	TMA	TMA	FF-Specific	1.29	0.22	0.95	1.57	Yes	0.85	1.73
Timber Mountain-Lower Vitric Tuff Aquifer	TM-LVTA			NTS Area	-0.24	0.93	-2.25	1.67	Yes	-2.06	1.57
Topopah Spring Aquifer	TSA		VA	NTS Area	0.21	0.98	-1.77	1.79	Yes	-1.70	2.12
Lower Vitric Tuff Aquifer	LVTA			NTS Area							
Upper Tuff Confining Unit	UTCU		LTCU	FF-Specific	-1.08 <sup>a</sup>	N/A	N/A	N/A	N/A	N/A	N/A
Lower Tuff Confining Unit	LTCU			NTS Area	-1.08 <sup>a</sup>	N/A	N/A	N/A	N/A	N/A	N/A
Playa Confining Unit	PCU	VCU		NTS Area	-1.03	1.51	-5.02	1.90	Yes	-4.00	1.93
Wahmonie Confining Unit	WCU		NTS Area								
Volcaniclastic Confining Unit	VCU		NTS Area								
Lower Carbonate Aquifer	LCA	LCA	LCA	FF-Specific	-0.13	1.43	-1.51	2.10	N/A	-2.93	2.66
			NTS Area	-0.02	1.30	-2.12	2.65	Yes	-2.56	2.52	
Upper Clastic Confining Unit	UCCU	UCCU	UCCU	NTS Area	-2.22	1.26	-3.11	-1.33	N/A	N/A	N/A
Lower Clastic Confining Unit	LCCU	LCCU	LCCU	NTS Area	0.40	0.36	0.14	0.65	N/A	N/A	N/A

<sup>a</sup>One Value

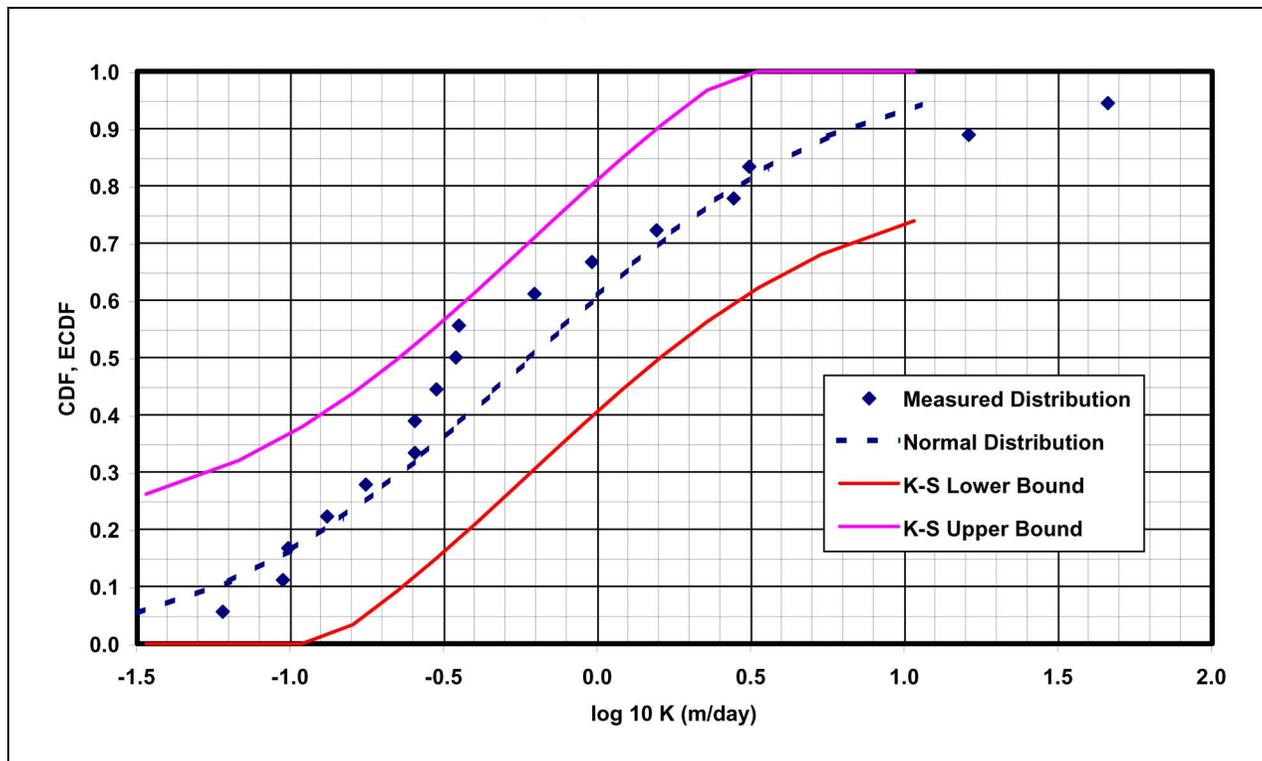


Figure 5-3  
FF AA Pumping-Scale K Values Probability Distribution

5.6.1.2 LCA HSU



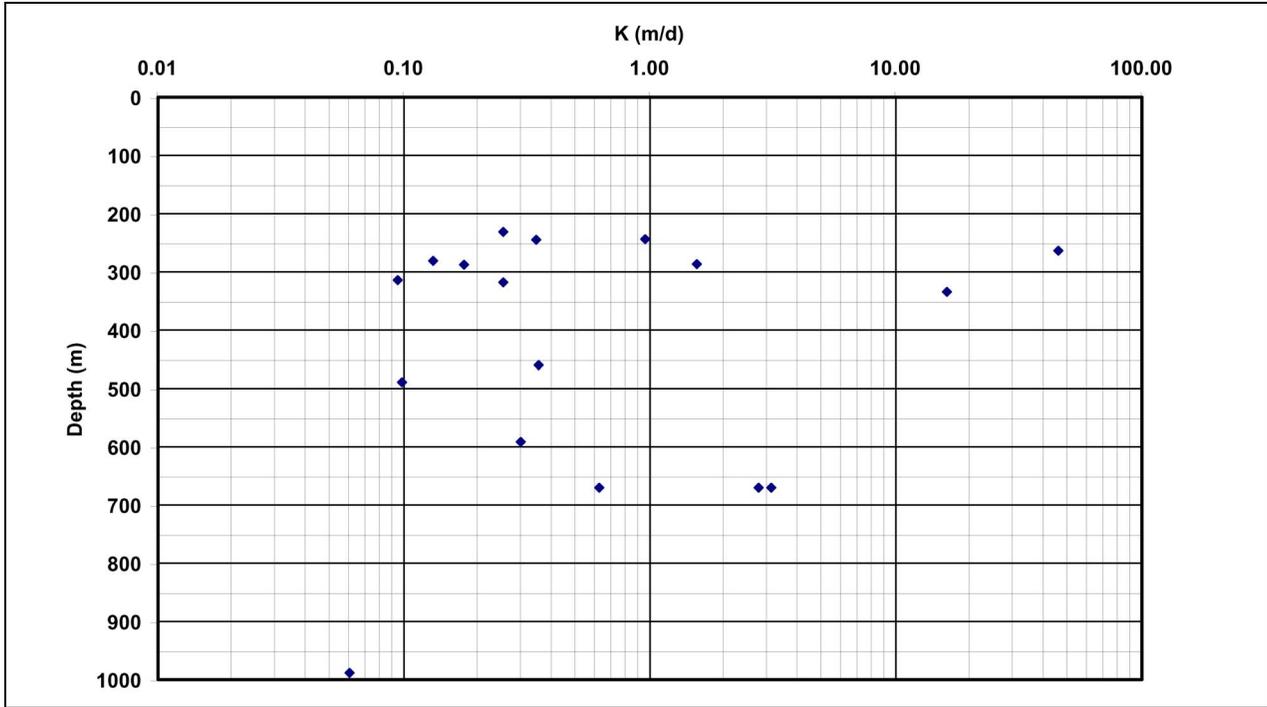


Figure 5-5  
Vertical Distribution of FF AA Pumping-Scale K Values

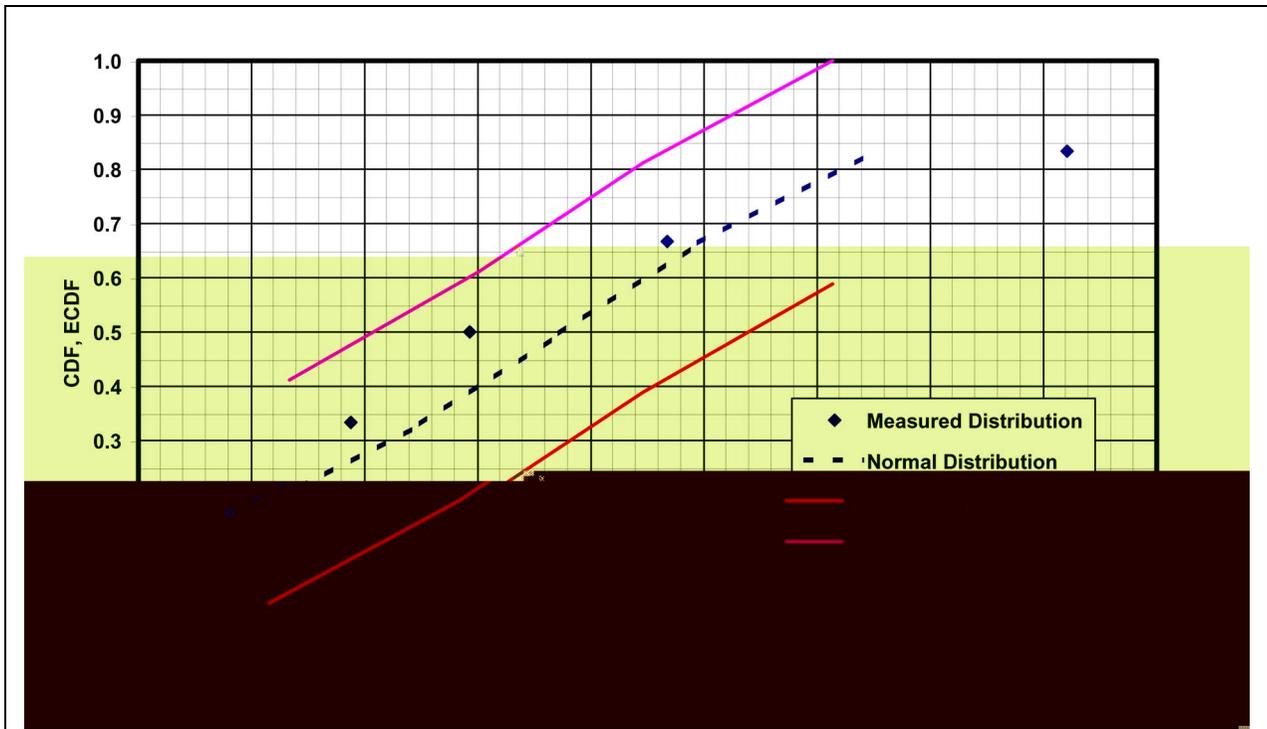


Figure 5-6  
FF LCA Pumping-Scale K-Data Distribution

5.6.1.3 TM-WTA and TM-LVTA combined HSUs

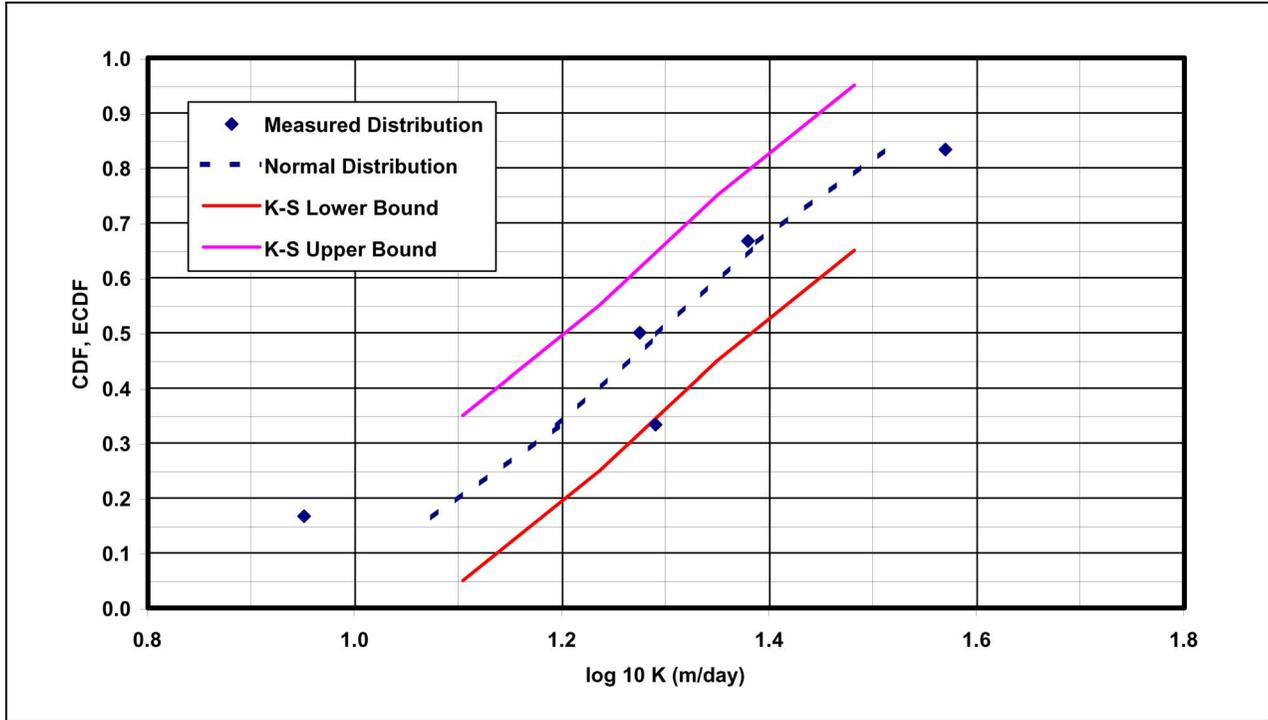


Figure 5-7  
FF TM-WTA, TM-LVTA Pumping-Scale K Values Probability Distribution

5.6.2 NTS Investigation Area K Analyses by HSU

5.6.2.1 AA HSU

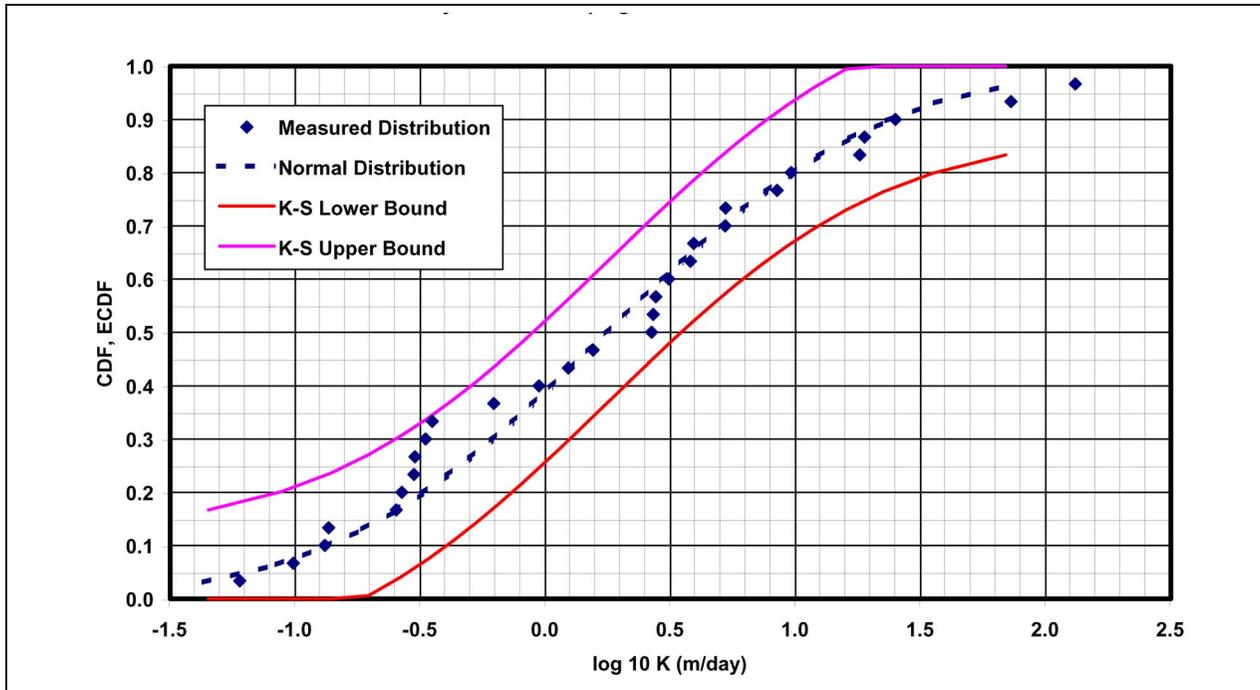
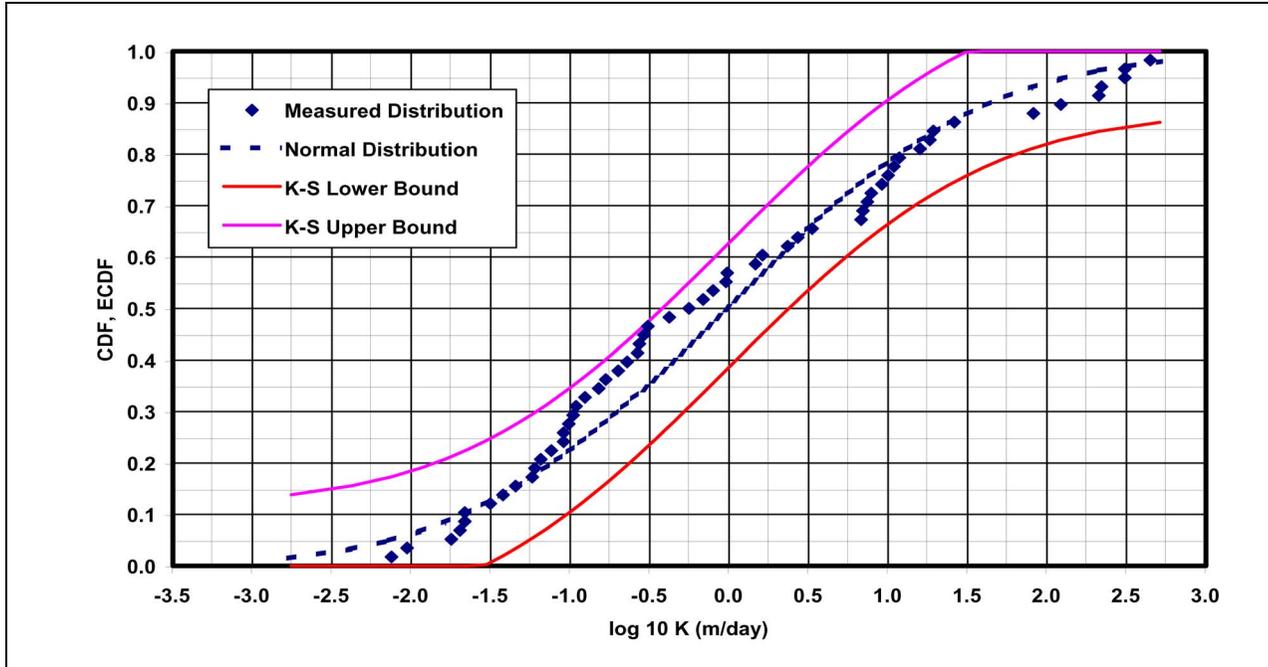


Figure 5-8  
NTS Investigation Area AA Pumping-Scale K Values Probability Distribution

**Table 5-5  
F-Test, T-Test, and K-S Test Comparison of Pumping-Scale AA K  
Distributions for the FF and NTS Investigation Area**

<b>F-Test Two-Sample for Variances</b>		
<b>Level of Significance 0.05</b>		
	<b>FF Area</b>	<b>NTS Investigation Area</b>
Mean	-0.22115	0.24630
Variance	0.63851	0.76776
Observations	17	29
df	16	28
F		1.20243
P(F<=f) one-tail		0.35686
F Critical one-tail		2.20587
<b>t-Test: Two-Sample Assuming Equal Variances</b>		
<b>Level of Significance 0.05</b>		
	<b>FF Area</b>	<b>NTS Investigation Area</b>
Mean	-0.22115	0.24630
Variance	0.63851	0.76776
Observations	17	29
Pooled Variance		0.72076
Hypothesized Mean Difference		0
df		44
t Stat		1.80253
P(T<=t) one-tail		0.03916
t Critical one-tail		1.68023
P(T<=t) two-tail		0.07831
t Critical two-tail		2.01537
<b>K-S Test: Comparison of Two Data Sets</b>		
K-S Statistic - D	0.2921	
P	0.269	

### 5.6.2.2 LCA HSU



**Figure 5-9**  
**NTS Investigation Area LCA Pumping-Scale K Values Probability Distribution**

**Table 5-6**  
**F-Test and T-Test Comparison of Pumping-Scale**  
**LCA K Distributions for the FF and NTS Investigation Area**

<b>F-Test Two-Sample for Variances</b>		
<b>Level of Significance 0.05</b>		
	<b>FF Area</b>	<b>NTS Investigation Area</b>
Mean	-0.13263	-0.022576921
Variance	2.032734	1.681021435
Observations	5	57
df	4	56
F	1.209226	
P(F<=f) one-tail	0.317156	
F Critical one-tail	2.536581	
<b>t-Test: Two-Sample Assuming Equal Variances</b>		
<b>Level of Significance 0.05</b>		
	<b>FF Area</b>	<b>NTS Investigation Area</b>
Mean	-0.13263	-0.022576921
Variance	2.032734	1.681021435
Observations	5	57
Pooled Variance	1.704469	
Hypothesized Mean Difference	0	
df	60	
t Stat	-0.18073	
P(T<=t) one-tail	0.428593	
t Critical one-tail	1.670649	
P(T<=t) two-tail	0.857186	
t Critical two-tail	2.000297	

### 5.6.2.3 LCCU HSU

### 5.6.2.4 LTCU HSU

### 5.6.2.5 TMA HSU

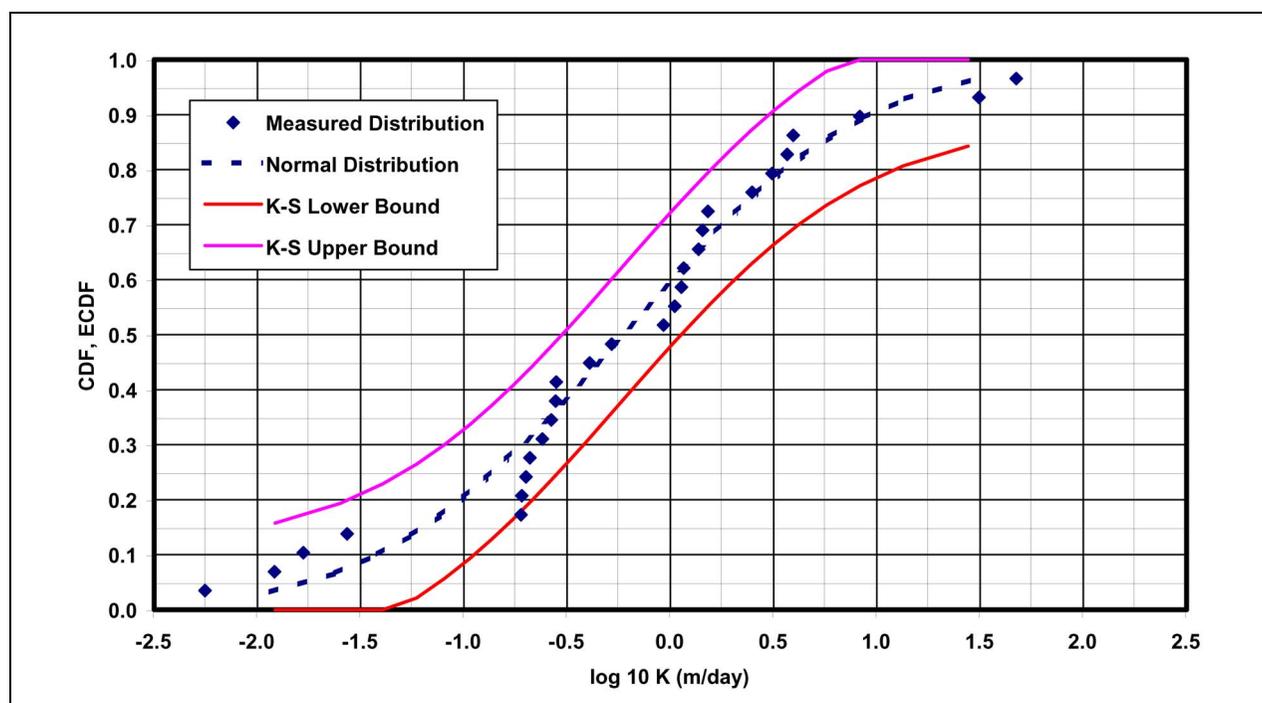


Figure 5-10  
NTS Investigation Area TMA Pumping-Scale K Values Probability Distribution

5.6.2.6 UCCU HSU

5.6.2.7 VA HSU

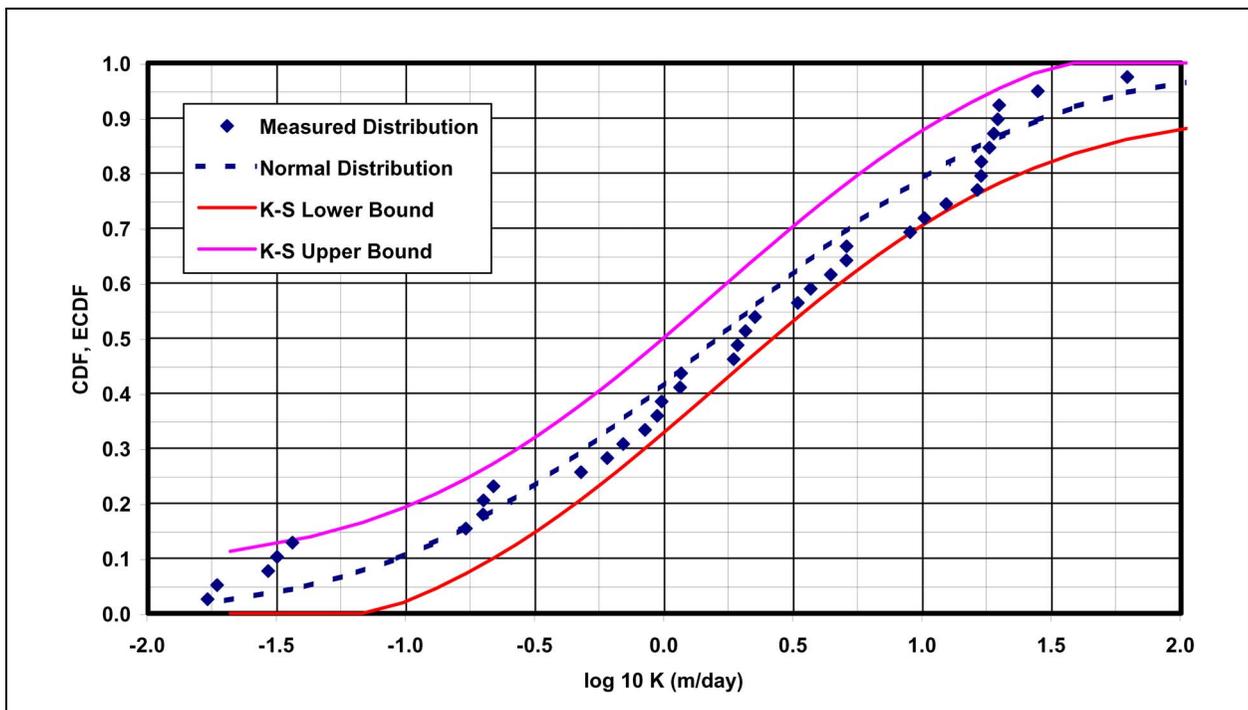
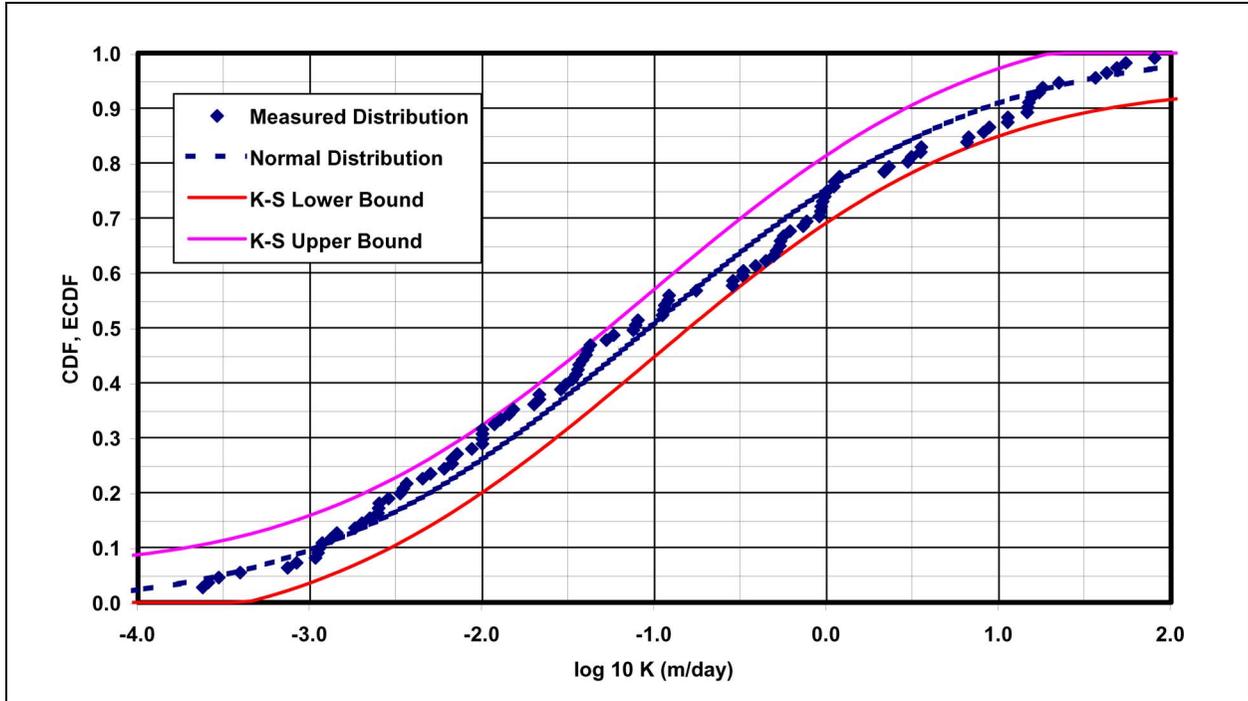


Figure 5-11  
NTS Investigation Area VA Pumping-Scale K Values Probability Distribution

5.6.2.8 VCU HSU



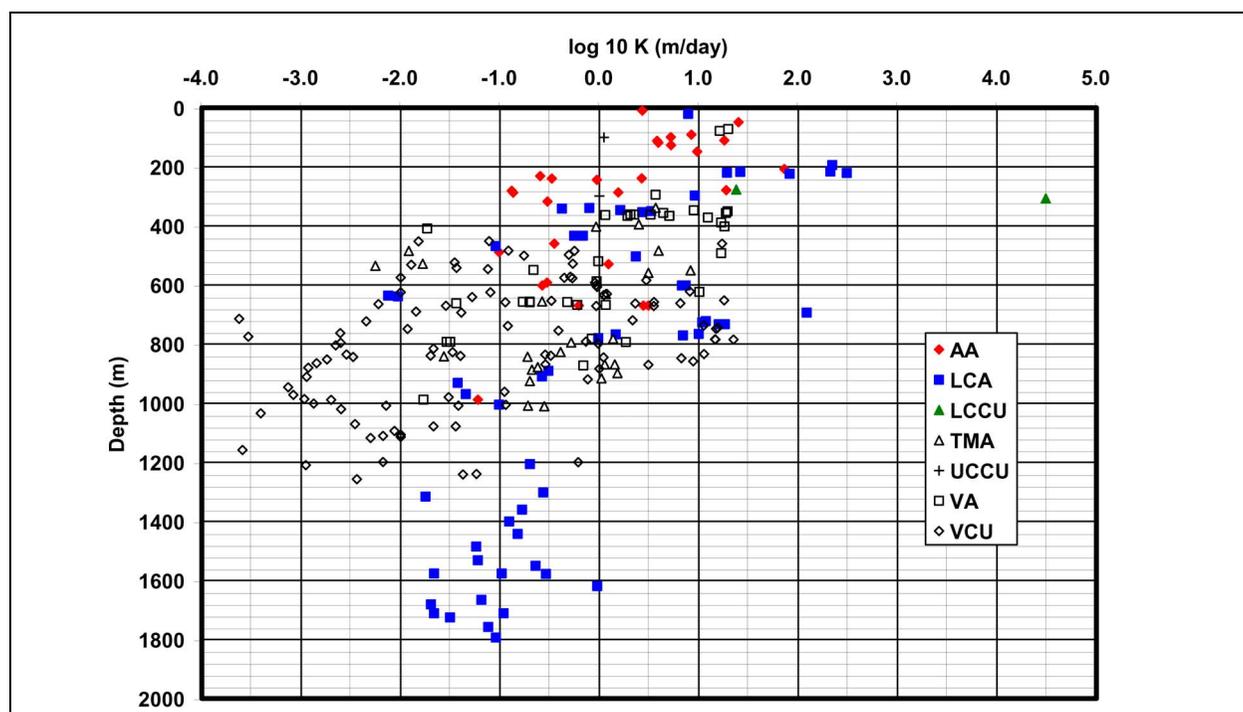
**Figure 5-12**  
**NTS Investigation Area VCU Pumping-Scale K Values Probability Distribution**

**5.6.3 Test-Scale and Spatial Variability**

#### ***5.6.4 Hydraulic Conductivity Versus Depth***

**Table 5-7**  
**Variation of the Mean and Standard Deviation of K Data by Scale of Measurements, by HSU**

Data Analysis HSUs	Data Source	Pumping-Scale Data		Slug-Test-Scale Data		Laboratory-Scale Data	
		Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
AA	FF-Specific	-0.22	0.80	-0.25	N/A	-0.34	0.73
	Study Area	0.25	0.88	-1.11	1.33	-0.37	0.79
TMA	FF-Specific	1.29	0.22	0.08	N/A	-0.47	0.76
	Study Area	-0.24	0.93	-2.27	1.15	N/A	N/A
VA	Study Area	0.21	0.98	-1.67	1.02	-3.67	2.20
VCU	Study Area	-1.03	1.51	-2.16	1.23	-4.41	1.55
LCA	FF-Specific	-0.13	1.43	N/A	N/A	-3.68	1.38
	Study Area	-0.02	1.30	-0.82	0.40	-5.25	1.67
UCCU	Study Area	-2.22	1.26	-1.64	0.79	-5.11	0.41
LCCU	Study Area	0.40	0.36	N/A	N/A	-6.11	0.62



**Figure 5-13**  
**NTS Investigation Area Log 10 K Versus Depth**

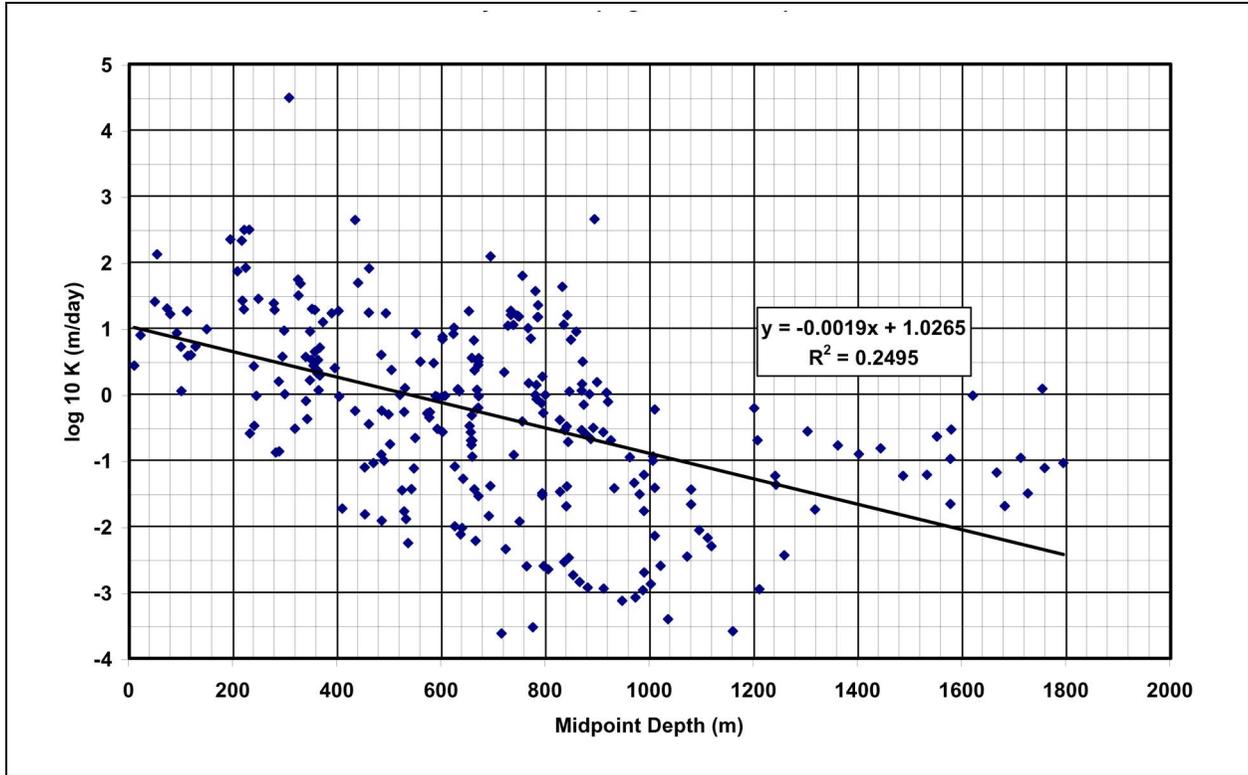
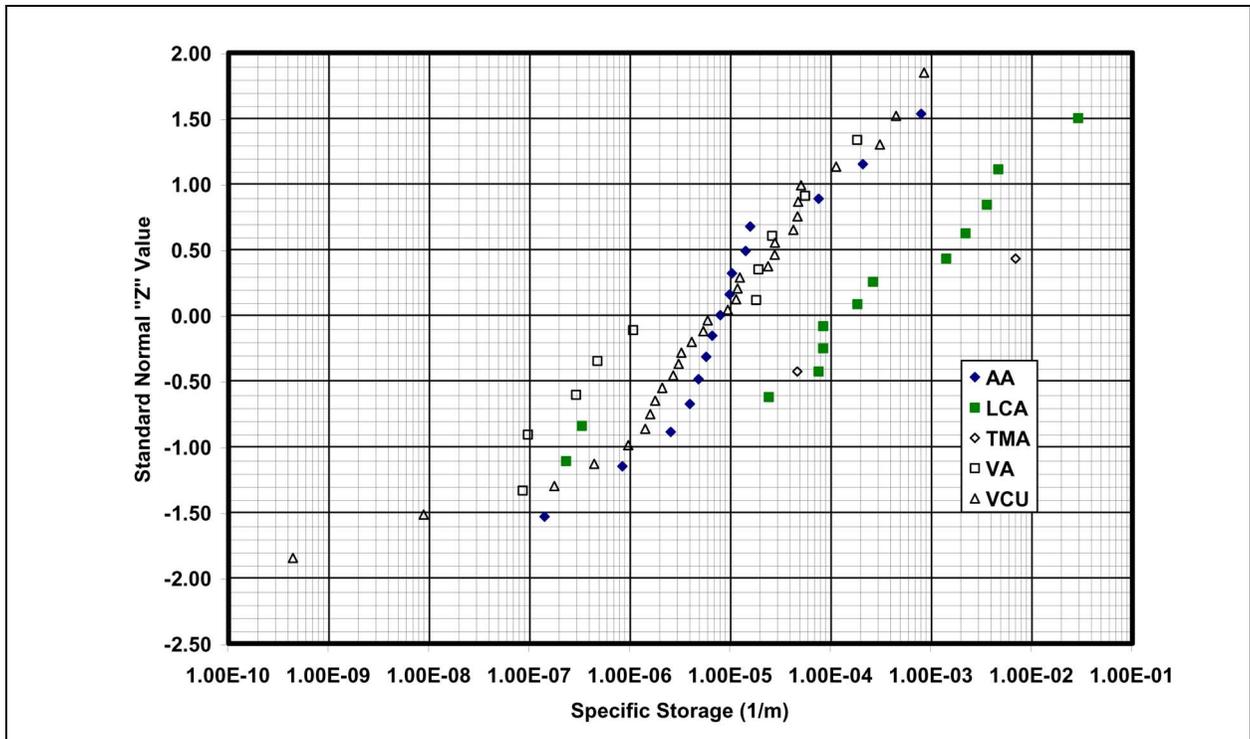


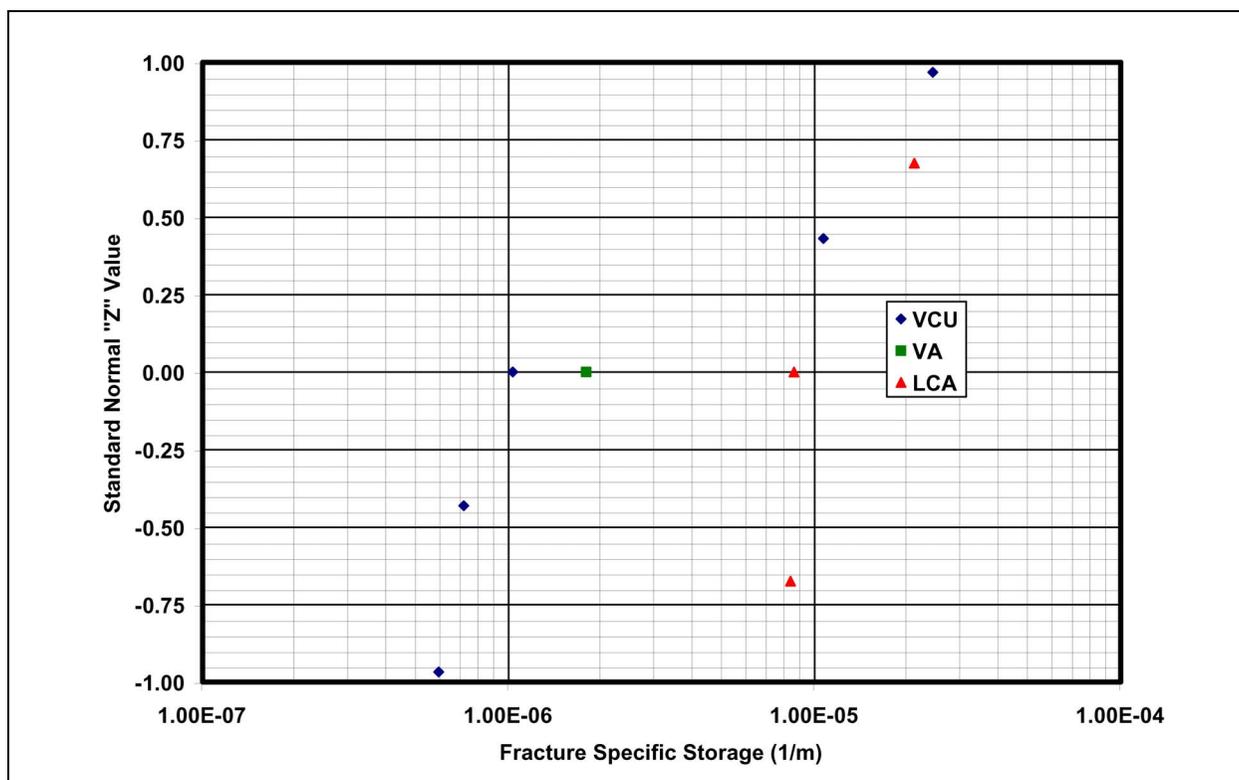
Figure 5-14  
NTS Investigation Area K-Depth Trend

### 5.6.5 Aquifer Unit Versus Confining Unit Results

### 5.7 Aquifer Storage Properties



**Figure 5-15**  
**NTS Investigation Area Specific Storage Probability Distribution**



**Figure 5-16**  
**NTS Investigation Area Fracture Specific Storage Probability Distribution**

### 5.8 *Temperature Dependence of Hydraulic Conductivity Data*

○ ○

μ ρ      μ      ρ

ρ      μ

ρ      μ

**Table 5-8**  
**Variation of Water Properties With Temperature**

Temperature (°C)	ρ - Density gm/cm <sup>3</sup>	μ - Dynamic Viscosity gm/(cm)(sec)(10 <sup>2</sup> )
0	0.99984	1.793
10	0.99970	1.307
20	0.99821	1.002
30	0.99565	0.798
40	0.99222	0.653
50	0.98803	0.547
60	0.98320	0.467
70	0.97778	0.404
80	0.97182	0.354

Data from CRC Handbook of Chemistry and Physics, 73<sup>rd</sup> Edition (CRC, 1992)  
gm/cm<sup>3</sup> = Grams per cubic centimeter

## 5.9 *Anisotropy*

## 5.11 Summary

## **6.0** *Precipitation Recharge*

### **6.1** *Objectives*

### **6.2** *Approach*

### **6.3 Data Types and Prioritization**

### **6.4 Recharge Model Descriptions**

#### **6.4.1 UGTA Original Recharge Model (DOE/NV, 1997; IT, 1996a)**

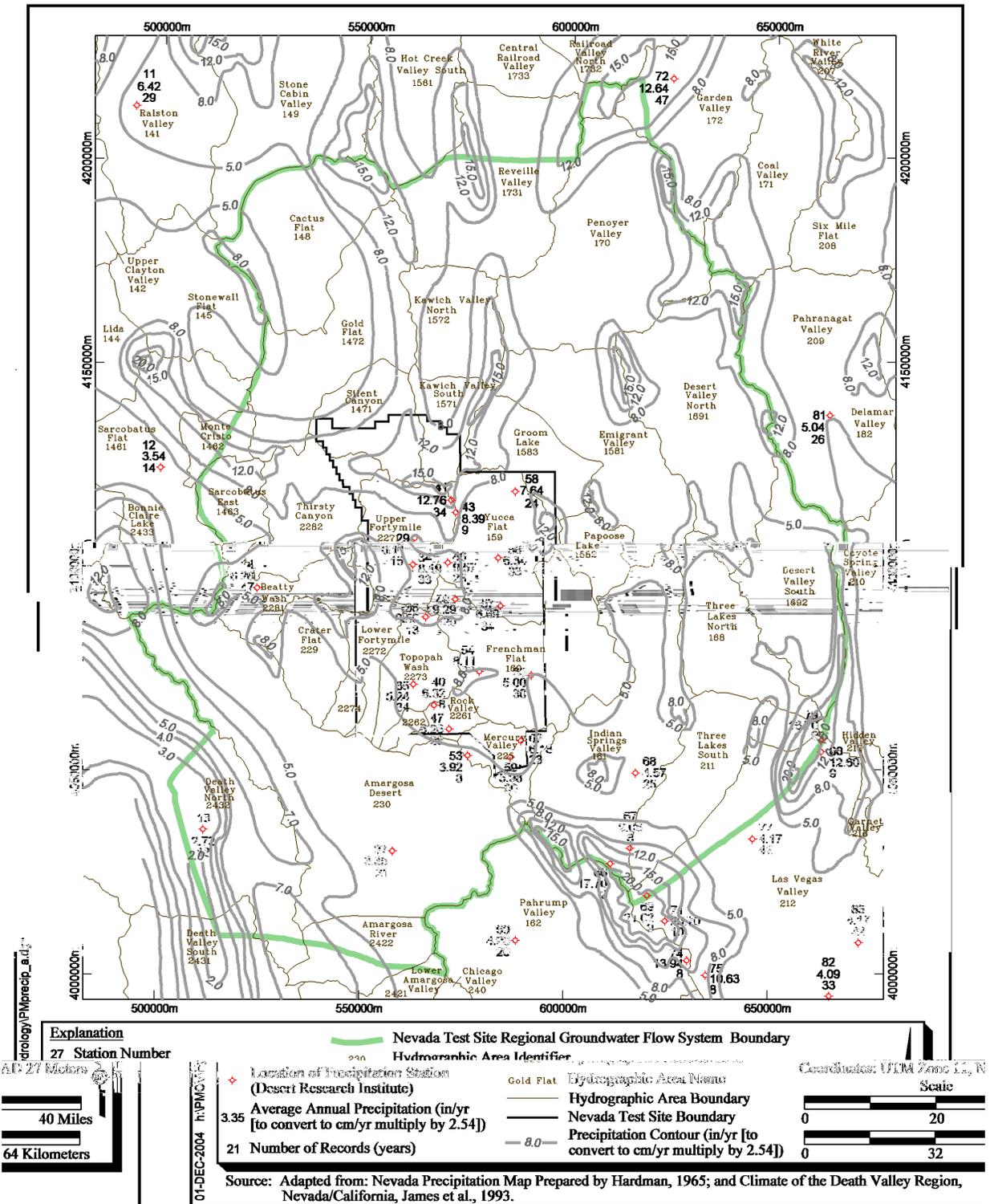
##### **6.4.1.1 Maxey and Eakin Method**

Σ

### **6.4.1.2 Modified ME Method**

#### **6.4.1.2.1 Methodology**

#### **6.4.1.2.2 Construction of the Digital Precipitation Map and Grid File**



**Figure 6-1**  
**Precipitation Map for the Nevada Test Site Region Used for the UGTA Original Recharge Model**

**6.4.1.2.3 *Final Precipitation Distribution***

**Table 6-1**  
**Precipitation Station Data Used for UGTA Original Recharge Model**

Station Number	Station Name	UTM Zone 11, NAD 27		Land Surface Elevation (m)	Average Annual Precipitation	
		Easting (meters [m])	Northing (m)		Depth cm/year (inches/year)	Years Record
11	Tonopah Airport	492,689	4,213,009	1,655	16.3 (6.42)	29
12	Sarcobatus	498,522	4,124,251	1,225	9.0 (3.54)	14
13	Death Valley	511,946	4,035,517	-52	6.9 (2.72)	18
14	Beatty	525,210	4,094,706	1,082	15.9 (6.26)	47
27	Lathrop Wells	558,275	4,030,159	664	8.5 (3.35)	21
29	Little Feller 2	560,698	4,106,882	1,573	20.6 (8.11)	15
34	40 MN	563,341	4,100,364	1,469	20.8 (8.19)	33
35	4JA	563,445	4,071,032	1,043	13.3 (5.24)	34
36	Shoshone Basin	566,464	4,087,547	1,725	21.6 (8.50)	13
40	Skull Mountain Pass	568,500	4,065,887	1,186	16.1 (6.32)	8
41	Area 12 Mesa	569,624	4,116,171	2,283	32.4 (12.76)	34
43	Stockade Pass	570,759	4,113,178	2,053	21.3 (8.39)	9
46	Tippah Spring 2	571,887	4,100,851	1,518	24.3 (9.57)	28
47	RV-1	572,151	4,060,050	1,036	15.9 (6.26)	28
49	Mid Valley	573,701	4,091,914	1,420	23.6 (9.29)	29
53	RV-Wash	576,721	4,053,568	866	10.0 (3.92)	8
54	Cane Springs	579,583	4,074,185	1,219	20.6 (8.11)	29
56	BJY	584,209	4,102,022	1,241	16.1 (6.34)	33
57	Yucca	584,791	4,090,231	1,195	17.0 (6.69)	34
58	PHS Farm	585,301	4,118,280	1,391	19.4 (7.64)	24
59	Desert Rock	587,122	4,053,108	1,005	15.2 (5.98)	30
60	Pahrump	588,385	4,008,227	823	12.6 (4.96)	20
62	Mercury	589,740	4,057,169	1,149	15.7 (6.18)	23
63	Well 5B	592,263	4,073,193	939	12.7 (5.00)	30
66	Trough Spring	610,107	4,026,349	2,512	45.0 (17.70)	9
67	Cold Creek	613,563	4,030,708	1,862	23.0 (9.06)	8
68	Indian Springs	617,793	4,049,256	951	11.6 (4.57)	25
69	Lee Canyon	619,087	4,018,516	2,594	53.4 (21.02)	9
71	Kyle Canyon	623,466	4,012,260	2,365	67.8 (26.70)	10
72	Adaven	624,188	4,219,501	1,905	32.1 (12.64)	47
74	Roberts Ranch	627,418	4,003,163	1,862	35.4 (13.94)	8
75	Red Rock Summit	631,972	3,999,532	1,984	27.0 (10.63)	8
79	Hayford Peak	660,932	4,058,248	2,999	42.4 (16.70)	9
80	Hidden Forest	660,934	4,055,504	2,304	32.0 (12.60)	9
81	Alamo	662,347	4,136,921	1,049	12.8 (5.04)	26
82	Las Vegas Airport	665,072	3,994,546	661	10.4 (4.09)	33
83	Sunrise Manor	672,321	4,007,633	555	10.6 (4.17)	32

Source: Jacobson, 1996; French, 1996

×

#### **6.4.1.2.4 Recharge**

**Table 6-2**  
**Comparison of Precipitation Rates to Published Values by Hydrographic Area**

Hydrographic Area		Total Precipitation Calculated from Distribution <sup>a</sup> (m <sup>3</sup> /d)	Published Precipitation Data (Scott et al., 1971)	
Hydrographic Area No.	Hydrographic Area Name		Total Precipitation within Flow System (m <sup>3</sup> /d)	Total Precipitation in Hydrographic Area (m <sup>3</sup> /d)
145	Stonewall Flat	2,546	4,878	371,737
146	Sarcobatus Flat	202,290	311,556	642,091
147	Gold Flat	889,195	844,856	844,856
148	Cactus Flat	491,956	439,325	439,325
149	Stone Cabin Valley	1,471	2,402	1,182,799
156	Hot Creek Valley	1,846	2,544	1,317,976
157	Kawich Valley	622,296	506,914	506,914
158	Emigrant Valley	1,164,236	959,757	959,757
159	Yucca Flat	461,941	337,942	337,942
160	Frenchman Flat	511,223	506,914	506,914
161	Indian Springs Valley	728,691	912,445	912,445
162	Pahrump Valley	1,531	5,397	1,419,358
168	Three-Lakes Valley North	276,120	371,737	371,737
169	Tikaboo Valley	1,260,641	1,284,181	1,284,181
170	Penoyer Valley	1,127,129	912,445	912,445
171	Coal Valley	835	1,249	574,502
172	Garden Valley	68,283	115,092	777,268
173	Railroad Valley South	681,245	844,856	844,856
209	Pahrangat Valley	1,446	3,564	912,445
210	Coyote Spring Valley	13,005	18,106	743,473
211	Three-Lakes Valley South	359,289	439,325	439,325
212	Las Vegas Valley	248,265	613,223	2,230,420
225	Mercury Valley	104,576	128,418	128,418
226	Rock Valley	85,759	87,865	87,865
227	Fortymile Canyon	715,443	669,126	669,126
228	Oasis Valley	660,013	506,914	506,914
229	Crater Flat	153,895	206,145	206,145
230	Amargosa Desert	1,131,415	811,062	811,062
242	Amargosa River	117,067	117,067 <sup>b</sup>	
243	Death Valley	398,318	398,318 <sup>b</sup>	
<b>Total Precipitation:</b>		<b>12,481,966</b>	<b>12,363,623</b>	

Source: IT, 1996a

<sup>a</sup>Calculation only includes precipitation within the NTS groundwater flow system boundary.

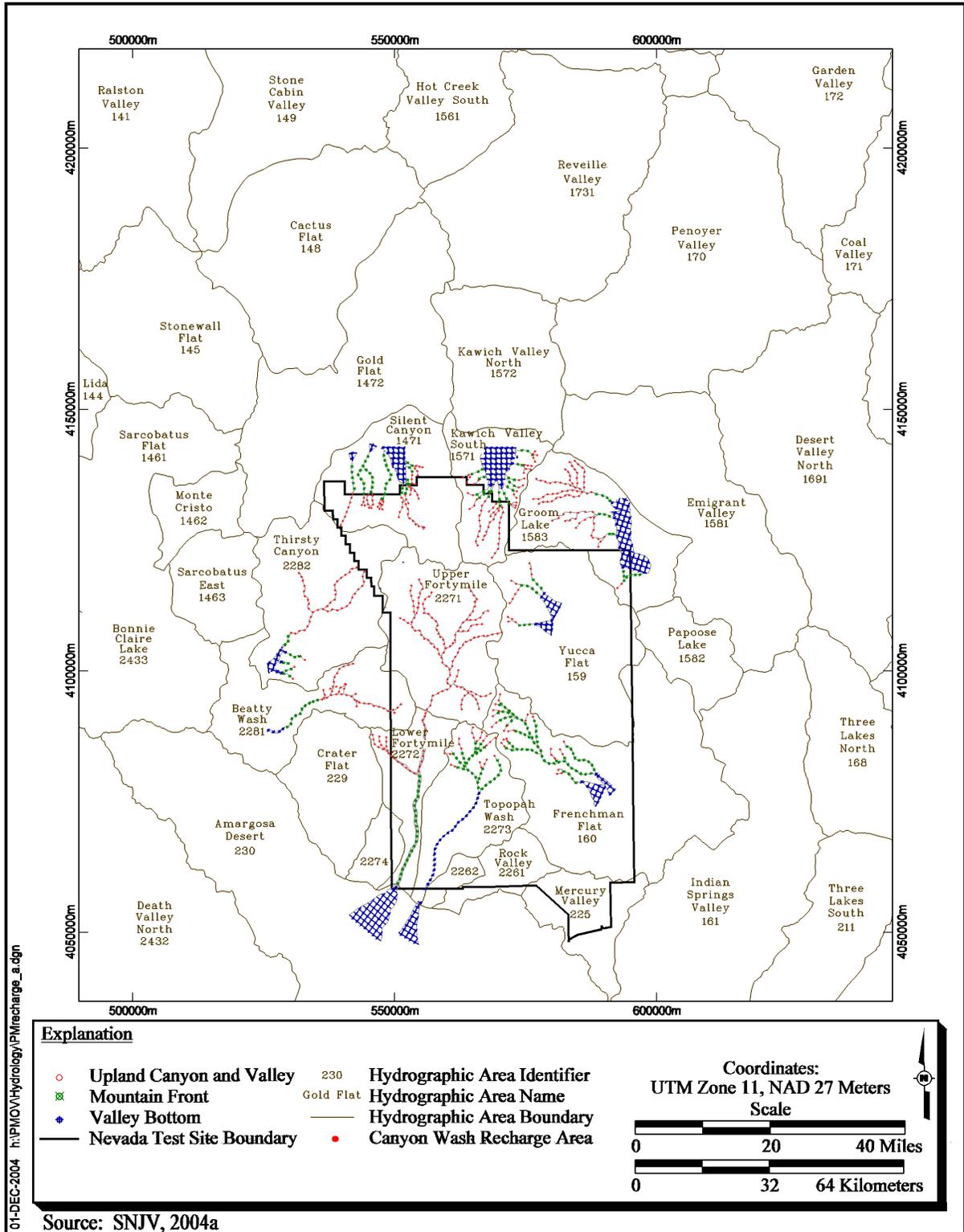
<sup>b</sup>Calculated hydrographic area total included in published precipitation total. Published data for this hydrographic area not available at time of printing.

m<sup>3</sup>/d = Cubic meters per day

***Preliminary Recharge Distribution***

***Recharge Allocation***

$$\alpha = \frac{\alpha}{\beta, \gamma, \delta}$$
$$\alpha = \frac{\alpha}{\beta \gamma \delta}$$
$$\alpha = \frac{\alpha}{\beta \gamma \delta}$$



**Figure 6-2**  
**Potential Recharge Redistribution Areas in the Nevada Test Site Region**

$\alpha \beta, \gamma, \delta$

$\alpha \beta, \gamma, \delta)$

#### **6.4.2 Revised UGTA Recharge Model**

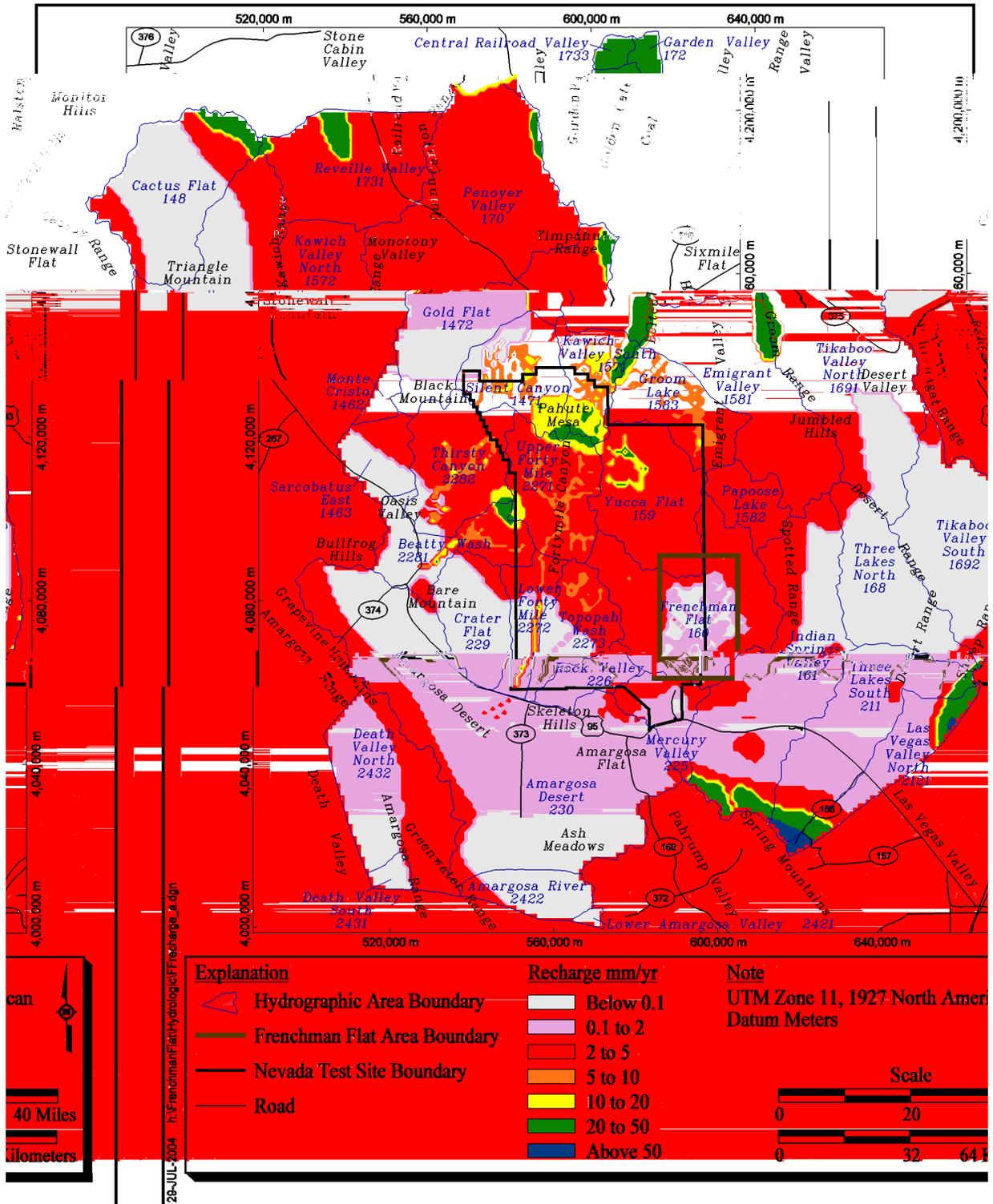


Figure 6-3  
NTS Regional Model Recharge Distribution (UGTA Original Recharge Model)

**Table 6-3  
Precipitation Station Data**

Station Number	Station Name	UTM Zone 11, NAD 27		Land Surface Elevation (m)	Average Annual Precipitation		Percent Change <sup>a</sup>
		Easting (meters [m])	Northing (m)		Depth cm/yr (inches/yr)	Years Record	
11	Tonopah Airport	492,689	4,213,009	1,655	13.5 (5.32)	44	-17.1
12	Sarcobatus	498,522	4,124,251	1,225	9.0 (3.54)	14	NA
13	Death Valley	511,946	4,035,517	-52	5.9 (2.34)	34	-13.8
14	Beatty	525,210	4,094,706	1,082	15.9 (6.26)	47	NA
27	Lathrop Wells	558,275	4,030,159	664	8.5 (3.35)	21	NA
29	Little Feller 2	560,698	4,106,882	1,573	20.1 (7.93)	27	-2.3
34	40 MN	563,341	4,100,364	1,469	20.5 (8.06)	43	-1.5
35	4JA	563,445	4,071,032	1,043	14.1 (5.56)	46	6.2
36	Shoshone Basin	566,464	4,087,547	1,725	21.6 (8.50)	13	NA
40	Skull Mountain Pass	568,500	4,065,887	1,186	16.1 (6.32)	8	NA
41	Area 12 Mesa	569,624	4,116,171	2,283	31.5 (12.42)	41	-2.7
43	Stockade Pass	570,759	4,113,178	2,053	21.3 (8.39)	9	NA
46	Tippiah Spring 2	571,887	4,100,851	1,518	21.6 (8.52)	43	-11.0
47	RV-1	572,151	4,060,050	1,036	15.8 (6.22)	40	-0.7
49	Mid Valley	573,701	4,091,914	1,420	22.8 (8.99)	39	-3.3
53	RV-Wash	576,721	4,053,568	866	10.0 (3.92)	8	NA
54	Cane Springs	579,583	4,074,185	1,219	19.5 (7.68)	39	-5.3
56	BJY	584,209	4,102,022	1,241	16.1 (6.36)	43	0.3
57	Yucca	584,791	4,090,231	1,195	16.8 (6.62)	45	-1.0
58	PHS Farm	585,301	4,118,280	1,391	18.8 (7.41)	39	-3.0
59	Desert Rock	587,122	4,053,108	1,005	14.5 (5.72)	40	-4.4
60	Pahrump	588,385	4,008,227	823	11.6 (4.58)	30	-7.7
62	Mercury	589,740	4,057,169	1,149	14.7 (5.81)	32	-6.1
63	Well 5B	592,263	4,073,193	939	12.4 (4.88)	41	-2.3
66	Trough Spring	610,107	4,026,349	2,512	45.0 (17.70)	9	NA
67	Cold Creek	613,563	4,030,708	1,862	23.0 (9.06)	8	NA
68	Indian Springs	617,793	4,049,256	951	11.6 (4.57)	25	NA
69	Lee Canyon	619,087	4,018,516	2,594	53.4 (21.02)	9	NA
71	Kyle Canyon	623,466	4,012,260	2,365	67.8 (26.70)	10	NA
72	Adaven	624,188	4,219,501	1,905	32.1 (12.64)	47	NA
74	Roberts Ranch	627,418	4,003,163	1,862	35.4 (13.94)	8	NA
75	Red Rock Summit	631,972	3,999,532	1,984	27.0 (10.63)	8	NA
79	Hayford Peak	660,932	4,058,248	2,999	42.4 (16.70)	9	NA
80	Hidden Forest	660,934	4,055,504	2,304	32.0 (12.60)	9	NA
81	Alamo	662,347	4,136,921	1,049	12.8 (5.04)	26	NA
82	Las Vegas Airport	665,072	3,994,546	661	10.5 (4.15)	59	1.5
83	Sunrise Manor	672,321	4,007,633	555	10.6 (4.17)	32	NA

<sup>a</sup>The percent change in precipitation values with the inclusion of the new data for 2004.

Source: Jacobson, 1996; French, 1996; WRCC, 2004; ARL/SORD, 2004

NA = Not Applicable

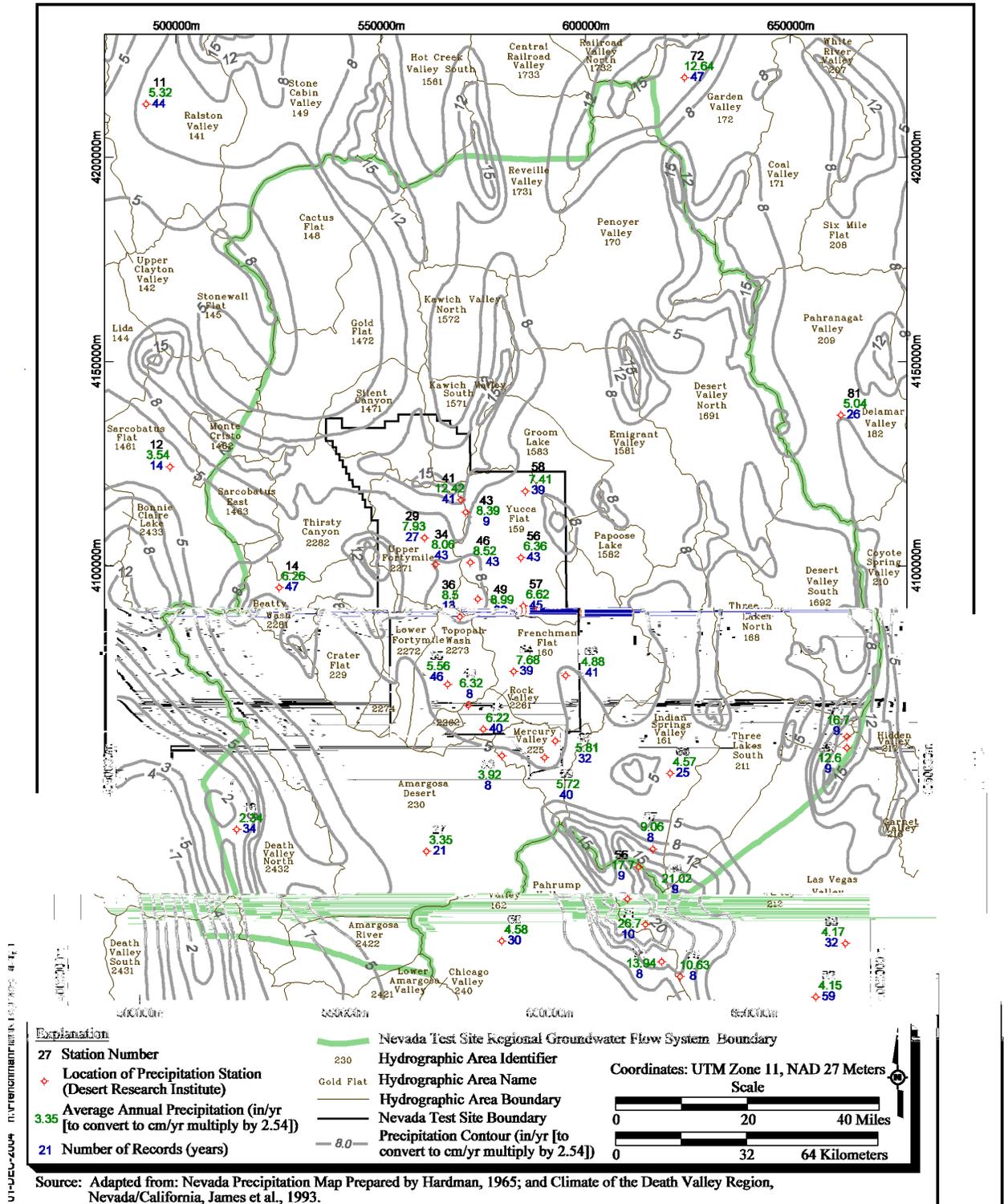


Figure 6-4  
Updated Precipitation Map for the Nevada Test Site Region  
(UGTA Revised Precipitation Distribution)

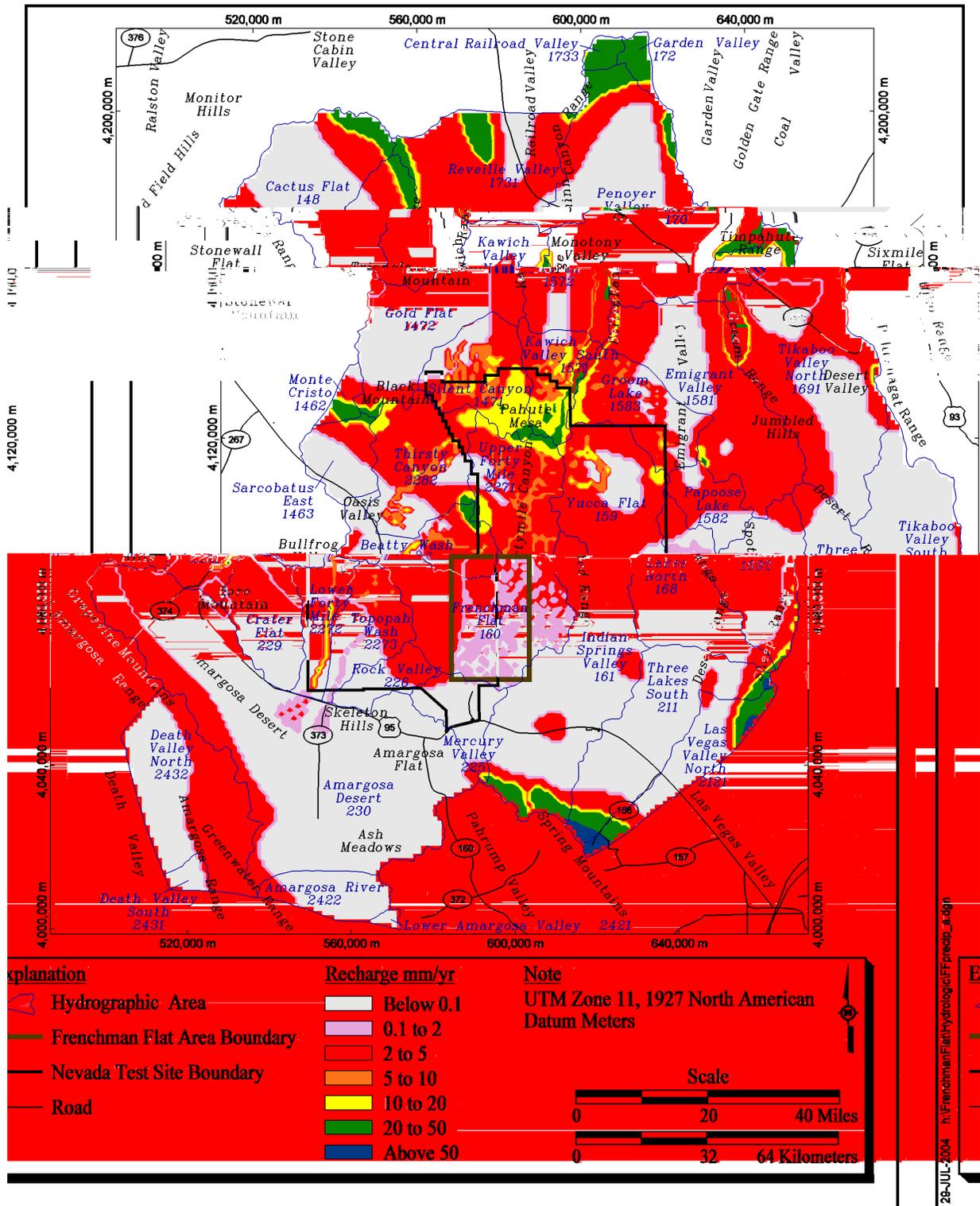


Figure 6-5  
Revised Maxey and Eakin Based Recharge in the NTS Region (UGTA Revised Recharge Model)

### **6.4.3 U.S. Geological Survey Recharge Model (Hevesi et al., 2003)**







**Table 6-4**  
**INFILv3 Input Parameters (as reported by Hevesi et al., 2003)**  
 (Page 1 of 6)

Source Data	Preprocessing	Input File	Parameter Name	Parameter Description	Parameter Use	Units	Parameter Accuracy
<b>DEM and Topographic Parameters Developed Using the DEM</b>							
DEM	GIS Calculated	Watershed File	EIEV(rows,cols)	Land surface elevation	Potential evapotranspiration, spatial interpolation models	m	High
		Watershed File	SLP(rows,cols)	Land surface slope	Potential evapotranspiration, Streamflow routing	u	High
		Watershed File	ASP(rows,cols)	Land surface aspect	Potential evapotranspiration	u	High
		Watershed File	EAST(rows,cols)	DEM grid cell east-west coordinate	Grid cell location, spatial interpolation models	m	High
		Watershed File	NORTH(r,c)	DEM grid cell east-west coordinate	Grid cell location, spatial interpolation models	m	High
		Watershed File	LAT(r,c)	DEM grid cell latitude	Potential evapotranspiration	dd	High
		Watershed File	LON(r,c)	DEM grid cell latitude	Potential evapotranspiration	dd	High
	SKYVIEW Calculated	Watershed File	RIDGE(r,c,36)	36 blocking ridge angles	Potential evapotranspiration	d	Medium
		Watershed File	SKYVIEW(r,c)	Reduction in total skyview	Potential evapotranspiration	u	Medium
	GRDSORT01 Calculated ROUTER03 Calculated	Watershed File	LOCID(r,c)	Location identifier for upstream cell	Streamflow routing	u	Medium
		Watershed File	IROUT(r,c)	Location identifier for downstream cell	Streamflow routing	u	Medium
		Watershed File	UPCELLS(r,c)	Number of upstream cells	Streamflow routing	u	Medium
	<b>Soil Properties Associated with the STATSGO Database</b>						
STATSGO	GIS	Watershed File	SOILTYPE(r,c)	Map code for STATSGO soil units	Spatial distribution of soil properties	u	Medium
		Watershed File	SOILTHCK(r,c)	Estimated soil thickness for root-zone	Root-zone layer thickness	m	Low
	STATSGO34	Soil-Attribute Table	SPOR(soiltype)	Soil porosity	Root-zone storage capacity	u	Medium
		Soil-Attribute Table	SWP(soiltype)	Soil wilting point	Root-zone storage capacity, evapotranspiration model	u	Medium
		Soil-Attribute Table	SKS(soiltype)	Soil saturated hydraulic conductivity	Root-zone infiltration and drainage function	mm/day	Medium
		Soil-Attribute Table	SOILB(soiltype)	Soil drainage function coefficient	Root-zone infiltration and drainage function	u	Medium

**Table 6-4**  
**INFILv3 Input Parameters (as reported by Hevesi et al., 2003)**  
 (Page 2 of 6)

Source Data	Preprocessing	Input File	Parameter Name	Parameter Description	Parameter Use	Units	Parameter Accuracy
<b>Bedrock and Deep Alluvium Properties Associated with the Digital Map of Hydrogeologic Units</b>							
Faunt and others (1997)*	GIS	Watershed File	ROCKTYPE(r,c)	Map code for Hydrogeologic units	Spatial distribution of bedrock and deep properties	u	Medium
User defined		Bedrock Attribute Table	RPOR(rocktype)	Effective root-zone porosity for bedrock layer	Defines storage capacity of root-zone in bedrock layer	u	Low
		Bedrock Attribute Table	RK <sub>LO</sub> (rocktype)	Effective unsaturated hydraulic conductivity for hydrogeologic unit	Defines lower bedrock hydraulic conductivity	mm/day	Low
		Bedrock Attribute Table	RK <sub>HI</sub> (rocktype)	Effective saturated hydraulic conductivity for hydrogeologic unit	Defines upper bedrock and deep alluvium hydraulic conductivity	mm/day	Low
<b>Vegetation and Root-Zone Properties Associated with the GAP Database</b>							
GAP	GIS	Watershed File	VEGTYPE(r,c)	Map code for GAP vegetation units	Spatial distribution of vegetation properties, root zone layer properties	u	Medium
User defined	GIS	Watershed File	VEGCOV(r,c)	Vegetation cover	Evapotranspiration model	%	Medium
User defined	None	Vegetation Attribute Table	RZDEN(vegtype,l)	Root density for layer l	Evapotranspiration model	%	Low
User defined	None	Vegetation Attribute Table	RZDPTH(vegtype,l)	Root-zone layer thickness	Evapotranspiration model, root-zone drainage model	m	Low
<b>Snowmelt and Sublimation Parameters</b>							
Maidment (1993)*	None	Control File	SNODAY1	Day number 1 for snowmelt model	Define timing of early spring snowmelt model	Day no.	Medium
		Control File	SNOPAR1	Snowmelt parameter 1	Degree-day snowmelt rate	mm/day	Medium
		Control File	SNODAY2	Day number 2 for snowmelt model	Define timing of late spring snowmelt model	Day no.	Medium
		Control File	SNOPAR2	Snowmelt parameter 2	Degree-day snowmelt rate	mm/day	Medium
User defined	None	Control File	MELTIME	Duration of daily snowmelt	Controls intensity of snowmelt	Hours	Medium
		Control File	SUBPAR1	Sublimation rate parameter #1	Sublimation	u	Low
		Control File	SUBPAR2	Sublimation rate parameter #2	Sublimation	u	Low

**Table 6-4**  
**INFILv3 Input Parameters (as reported by Hevesi et al., 2003)**  
 (Page 3 of 6)

Source Data	Preprocessing	Input File	Parameter Name	Parameter Description	Parameter Use	Units	Parameter Accuracy
<b>Simulation-Time Parameters</b>							
User defined	None	Control File	YRSTART	Simulation start year	Identifies simulation start date	u	NA
		Control File	MOSTART	Simulation start month	Identifies simulation start date	u	NA
		Control File	DYSTART	Simulation start day	Identifies simulation start date	u	NA
		Control File	YREND	Simulation end year	Identifies simulation end date	u	NA
		Control File	MOEND	Simulation end month	Identifies simulation end date	u	NA
		Control File	DYEND	Simulation end day	Identifies simulation end date	u	NA
<b>Storm Duration Parameters</b>							
User defined	None	Control File	DYSUMBEG	Start day number for summer storms	Defines beginning day number for summer storm events	Day	Medium
		Control File	DYSUMEND	End day number for summer storms	Defines ending day number for summer storm events	Day	Medium
		Control File	STORMSUM	Duration of summer precipitation and streamflow	Defines precipitation and streamflow intensity for summer storms	Hours	Low
User defined	None	Control File	STORMWIN	Duration of winter precipitation and streamflow	Defines precipitation and streamflow intensity for winter storms	Hours	Low
<b>Evapotranspiration Parameters</b>							
Flint and Childs (1987)*	None	Control File	BSEA	Preistley-Taylor model coefficient #1 for bare soil evaporation	ET model coefficient for modified Preistley-Taylor equation, for bare-soil evaporation	u	Medium
		Control File	BSEB	Preistley-Taylor model coefficient #2 for bare soil evaporation	ET model coefficient for modified Preistley-Taylor equation, for bare-soil evaporation	u	Medium
		Control File	HSTEP	POTEVAP time step	Define hourly time-step for potential evapotranspiration model	Hours	NA
		Control File	ETA	Preistley-Taylor model coefficient #1 for transpiration	ET model coefficient for modified Preistley-Taylor equation, for transpiration	u	Medium
User defined	None	Control File	ETB	Preistley-Taylor model coefficient #2 for transpiration	ET model coefficient for modified Preistley-Taylor equation, for transpiration	u	Medium

**Table 6-4**  
**INFILv3 Input Parameters (as reported by Hevesi et al., 2003)**  
 (Page 4 of 6)

Source Data	Preprocessing	Input File	Parameter Name	Parameter Description	Parameter Use	Units	Parameter Accuracy
<b>Stream-Channel Parameters</b>							
User defined	None	Control File	CHAN1	Surface-water minimum wetted area factor	Defines wetted area for stream-channel grid cell	u	Low
		Control File	CHAN2	Surface-water wetted area model coefficient	Defines wetted area for stream-channel grid cell	u	Low
		Control File	CHAN3	Surface-water headwater wetted area factor	Defines wetted area for stream-channel grid cell	u	Low
		Control File	CHAN4	Surface-water maximum wetted area factor	Defines wetted area for stream-channel grid cell	u	Low
		Control File	KSCHN1	Model coefficient for stream channel characteristics	Minimum number of upstream cells for using KSCHN2	u	Low
User defined	None	Control File	KSCHN2	Model coefficient for stream channel characteristics	Scaler for adjusting soil saturated hydraulic conductivity in channels	u	Low
		Control File	KSCHN3	Soil saturated hydraulic conductivity	Maximum soil saturated hydraulic conductivity in channels	u	Low
<b>Daily Climate Inputs Developed From NOAA/NCDC</b>							
NOAA/ NCDC	DAYINP14	Control File	INITOPT	Initial condition option	Defines method for setting initial conditions	u	NA
		Control File	VWCFAC	Scaler for setting initial water content for root-zone	Defines initial water content for soil layers in root zone	u	Low
		Precip. File	PPT(day,st)	Daily precipitation	Daily precipitation input	mm	High
		Maximum Air Temp. File	TMAX(day,st)	Maximum daily air temperature	Snowfall, snowmelt, sublimation, potential evapotranspiration	°C	High
		Minimum Air temp. File	TMIN(day,st)	Minimum daily air temperature	Snowfall, snowmelt, sublimation, potential evapotranspiration	°C	High
User defined	EXCEL	Monthly Climate Model	PPTMOD(month)	Model type for monthly precipitation-elevation regression model	Defines model type for daily precipitation spatial interpolation model	u	Medium

**Table 6-4**  
**INFILv3 Input Parameters (as reported by Hevesi et al., 2003)**  
 (Page 5 of 6)

Source Data	Preprocessing	Input File	Parameter Name	Parameter Description	Parameter Use	Units	Parameter Accuracy
<b>Daily Climate Inputs Developed From NOAA/NCDC - Continued</b>							
		Monthly Climate Model	PPTA(month)	Regression model coefficient for precipitation-elevation regression model	Coefficient for daily precipitation spatial interpolation model	u	Medium
		Monthly Climate Model	PPTB(month)	Regression model coefficient for precipitation-elevation regression model	Coefficient for daily precipitation spatial interpolation model	u	Medium
		Monthly Climate Model	PPTC(month)	Regression model coefficient for precipitation-elevation regression model	Coefficient for daily precipitation spatial interpolation model	u	Medium
		Monthly Climate Model	TMAXMOD(month)	Model type for monthly maximum air temperature-elevation regression model	Defines model type for maximum daily air temperature spatial interpolation model	u	High
		Monthly Climate Model	TMAXA(month)	Regression model coefficient for maximum air temperature-elevation model	Coefficient for maximum daily air temperature spatial interpolation model	u	High
		Monthly Climate Model	TMAXB(month)	Regression model coefficient for maximum air temperature-elevation model	Coefficient for maximum daily air temperature spatial interpolation model	u	High
		Monthly Climate Model	TMAXC(month)	Regression model coefficient for maximum air temperature-elevation model	Coefficient for maximum daily air temperature spatial interpolation model	u	High
		Monthly Climate Model	TMINMOD(month)	Model type for monthly minimum air temperature-elevation regression model	Defines model type for minimum daily air temperature spatial interpolation model	u	High
		Monthly Climate Model	TMINA(month)	Regression model coefficient for minimum air temperature-elevation model	Coefficient for minimum daily air temperature spatial interpolation model	u	High
		Monthly Climate Model	TMINB(month)	Regression model coefficient for minimum air temperature-elevation model	Coefficient for minimum daily air temperature spatial interpolation model	u	High
		Monthly Climate Model	TMINC(month)	Regression model coefficient for minimum air temperature-elevation model	Coefficient for minimum daily air temperature spatial interpolation model	u	High

**Table 6-4**  
**INFILv3 Input Parameters (as reported by Hevesi et al., 2003)**  
 (Page 6 of 6)

Source Data	Preprocessing	Input File	Parameter Name	Parameter Description	Parameter Use	Units	Parameter Accuracy
<b>Monthly Atmospheric Parameters</b>							
NWS	None	Monthly Atmospheric Parameter	OZONE(month)	Ozone layer thickness	Potential evapotranspiration model, incoming solar radiation	cm	Medium
		Monthly Atmospheric Parameter	WP(month)	Precipitable water in atmosphere	Potential evapotranspiration model, incoming solar radiation	cm	Medium
		Monthly Atmospheric Parameter	BETA(month)	Mean atmospheric turbidity	Potential evapotranspiration model, incoming solar radiation, net radiation	u	Medium
		Monthly Atmospheric Parameter	CSR(month)	Circumsolar radiation	Potential evapotranspiration model, incoming solar radiation, net radiation	u	Medium
		Monthly Atmospheric Parameter	PG(month)	Surface reflectivity	Potential evapotranspiration model, incoming solar radiation, net radiation	u	Medium

\*Source: Hevesi et al., 2003

r = Row  
 C = Column  
 m = Meters  
 cm = Centimeters  
 mm = Millimeters  
 % = Percentage  
 u = Unitless  
 dd = Decimal degrees  
 d = Degrees  
 NA = Not applicable

#### **6.4.4 Desert Research Institute Recharge Model (Russell and Minor, 2002)**

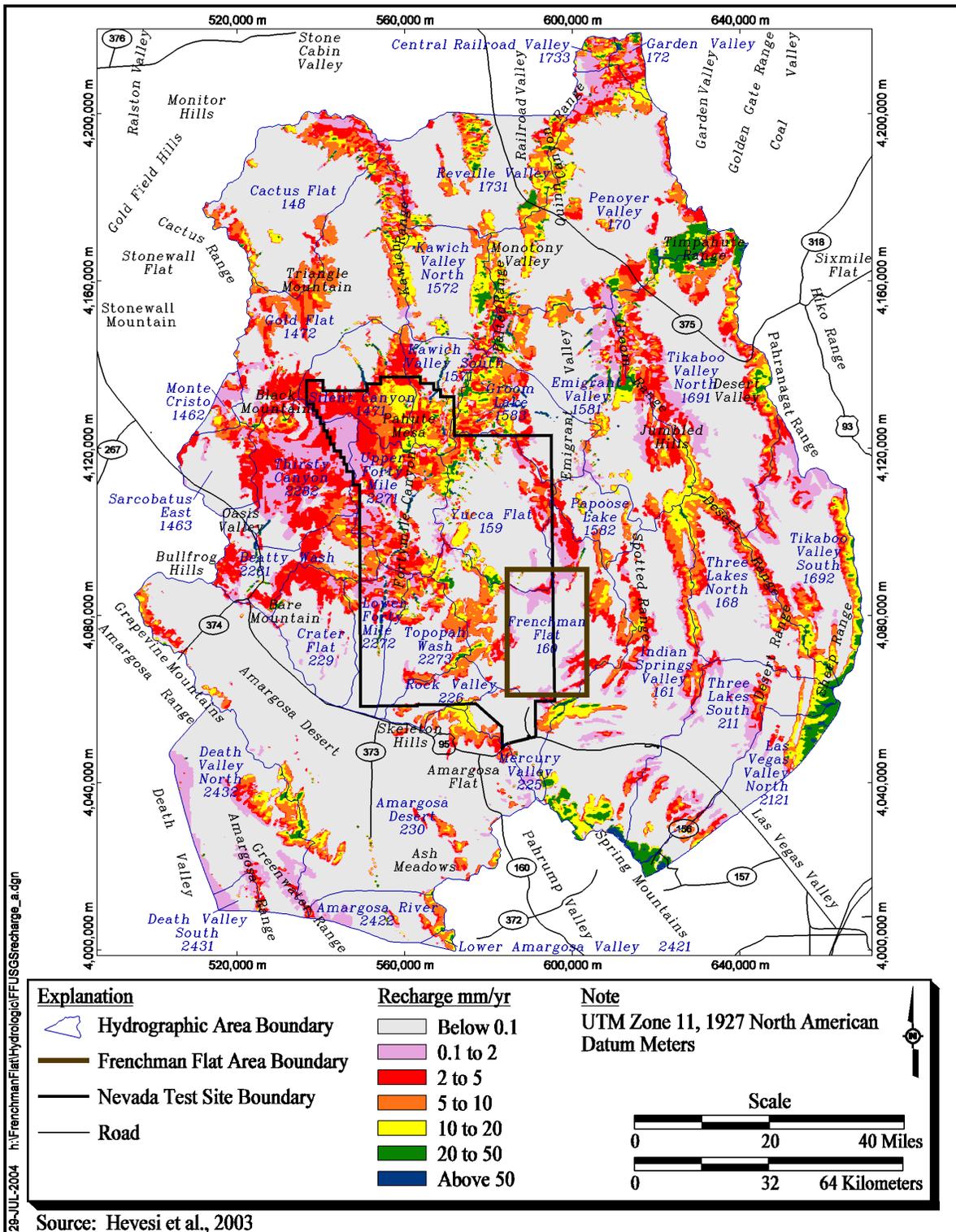


Figure 6-6  
 USGS Recharge Distribution Model 1, No Overland Flow

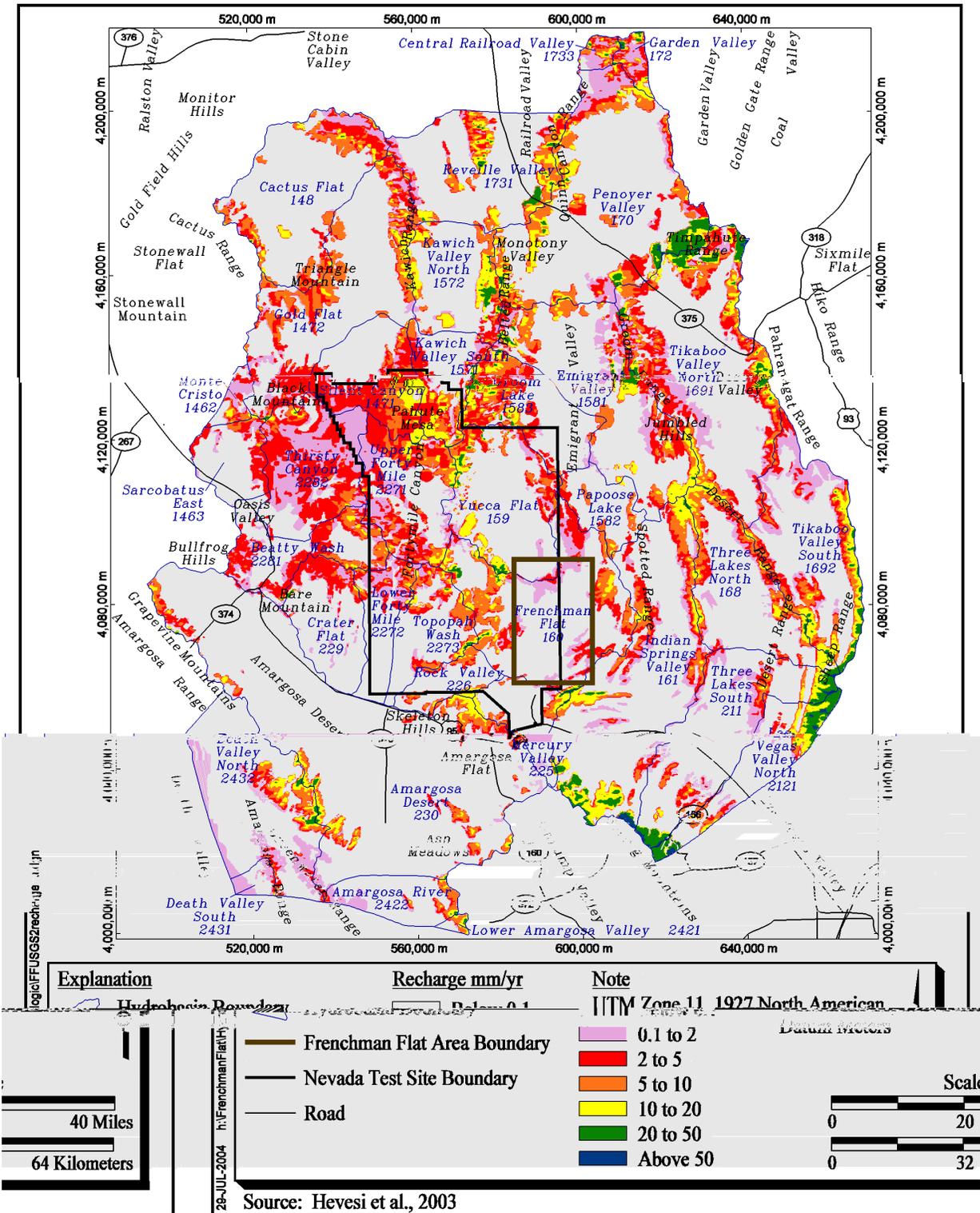


Figure 6-7  
 USGS Recharge Distribution Model 2, Overland Flow



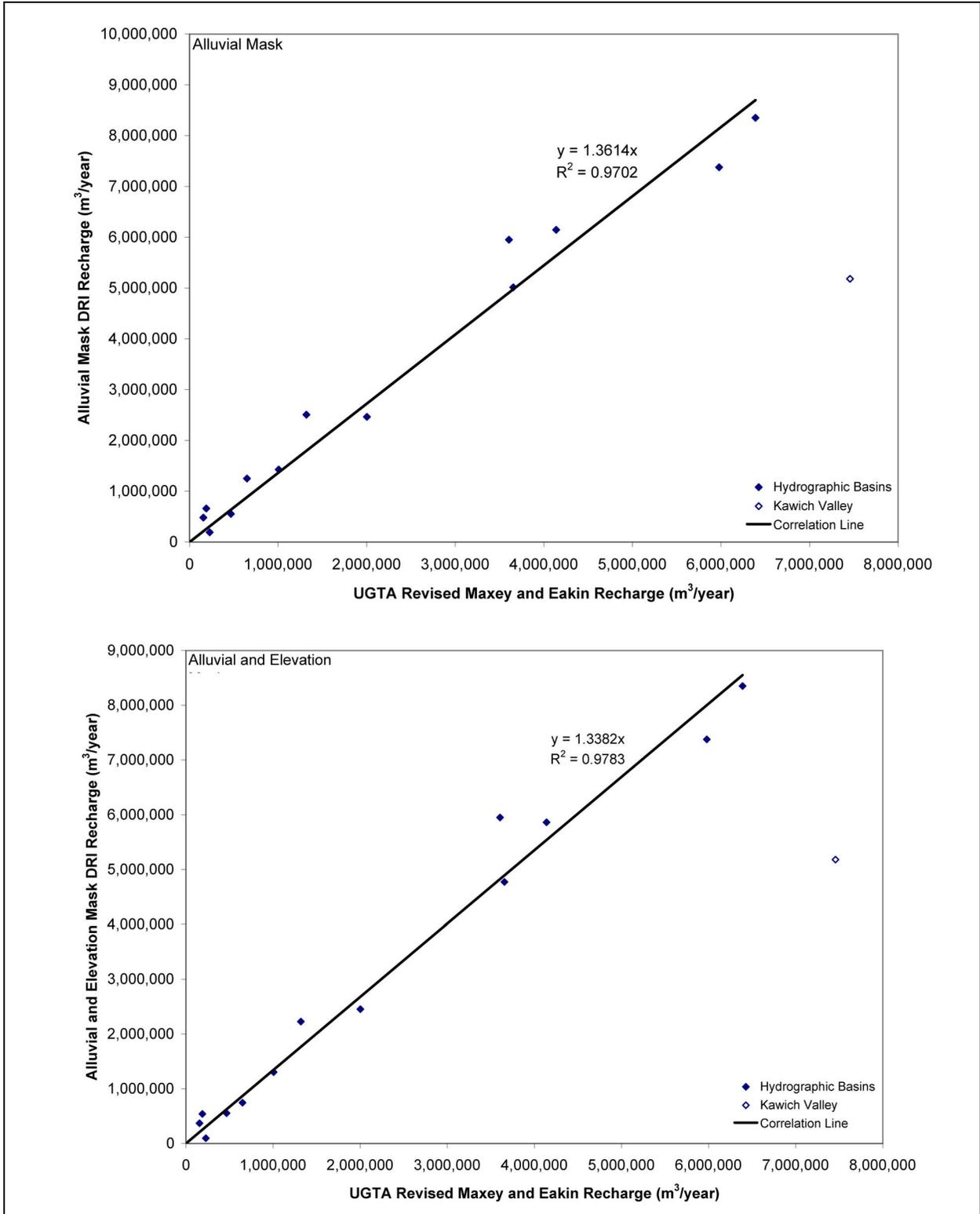
( )/( ) ( )/( )

( / ) ( )

**6.4.5 Nevada Water Resource Study**

*Resources - Reconnaissance Series Report 54*

*Water*



**Figure 6-8**  
**Relationship between UGTA Revised ME Recharge Rate and DRI Models**

**Table 6-5  
Scaled DRI Recharge Rates Using UGTA Revised Maxey and Eakin Model**

Sub-basin Number	Area Name	Secondary Name	UGTA	Alluvial Mask		Alluvial and Elevation Mask	
			Revised Maxey-Eakin Based (m <sup>3</sup> /yr)	50th Percentile DRI (m <sup>3</sup> /yr)	Estimated 50th Percentile Recharge (m <sup>3</sup> /yr)	50th Percentile DRI (m <sup>3</sup> /yr)	Estimated 50th Percentile Recharge (m <sup>3</sup> /yr)
1462	Sarcobatus Flat-2	Monte Cristo	794,532.94		1,081,677.14		1,063,085.07
1463	Sarcobatus Flat-3	Sarcobatus East	568,888.63		774,484.98		761,172.99
148	Cactus Flat		3,304,087.75		4,498,185.06		4,420,869.41
1571 & 1572	Kawich Valley		7,456,053.50	5,176,836	10,150,671.23	5,176,836	9,976,199.58
168	Three Lakes Valley North		319,001.72		434,288.94		426,824.30
1691	Tikaboo Valley-1	Tikaboo Valley North	6,451,646.00		8,783,270.86		8,632,302.35
1692	Tikaboo Valley-2	Tikaboo Valley South	760,359.69		1,035,153.68		1,017,361.27
170	Penoyer Valley		6,487,366.00		8,831,900.07		8,680,095.71
172	Garden Valley		2,476,189.50		3,371,084.39		3,313,141.55
1731	Railroad Valley South-1	Reveille Valley	5,464,048.00		7,438,754.95		7,310,896.22
1733	Railroad Valley South-3	Central Railroad Valley	1,920,031.88		2,613,931.40		2,569,002.66
211	Three Lakes Valley South		4,219,934.50		5,745,018.83		5,646,272.36
2121	Las Vegas Valley-1		5,015,045.00		6,827,482.26		6,710,130.21
2301	Amargosa Desert	NV Portion	648,360.13	1,250,517	882,677.48	743,668	867,505.85
2302	Amargosa Desert	CA Portion	807,342.19		1,099,115.66		1,080,223.85
2421	Amargosa River-1	Lower Amargosa Valley	0.00		0.00		0.00
2422	Amargosa River-2	Amargosa River	103,701.07		141,178.64		138,752.03
2431	Death Valley Central-1	Death Valley South	23,983.49		32,651.12		32,089.91
2432	Death Valley Central-2	Death Valley North	1,559,098.63		2,122,556.87		2,086,073.97
1471 & 1472	Gold Flat		6,389,207.25	8,349,933	8,698,266.75	8,349,933	8,548,759.30
1582	Emigrant Valley		466,867.94	552,945	635,594.01	552,945	624,669.30
1581 & 1583	Emigrant Valley		5,978,079.75	7,376,521	8,138,557.77	7,376,521	7,998,670.71
159	Yucca Flat		2,001,385.63	2,464,376	2,724,686.40	2,454,338	2,677,853.97
160	Frenchman Flat		1,319,063.50	2,506,705	1,795,773.05	2,225,121	1,764,906.96
161	Indian Springs Valley		3,655,435.50	5,014,868	4,976,509.89	4,773,754	4,890,972.70
225	Mercury Valley		154,914.28	480,655	210,900.30	370,761	207,275.31
226	Rock Valley		227,355.69	193,150	309,522.04	94,962	304,201.91
2271	Fortymile Canyon		3,606,419.00	5,951,107	4,909,778.83	5,951,107	4,825,388.62
2272, 2273	Fortymile Canyon		1,006,677.44	1,426,551	1,370,490.67	1,302,880	1,346,934.41
2281 & 2282	Oasis Valley		4,138,336.50	6,145,495	5,633,931.31	5,862,809	5,537,094.24
229	Crater Flat		187,842.58	661,209	255,728.89	540,229	251,333.37

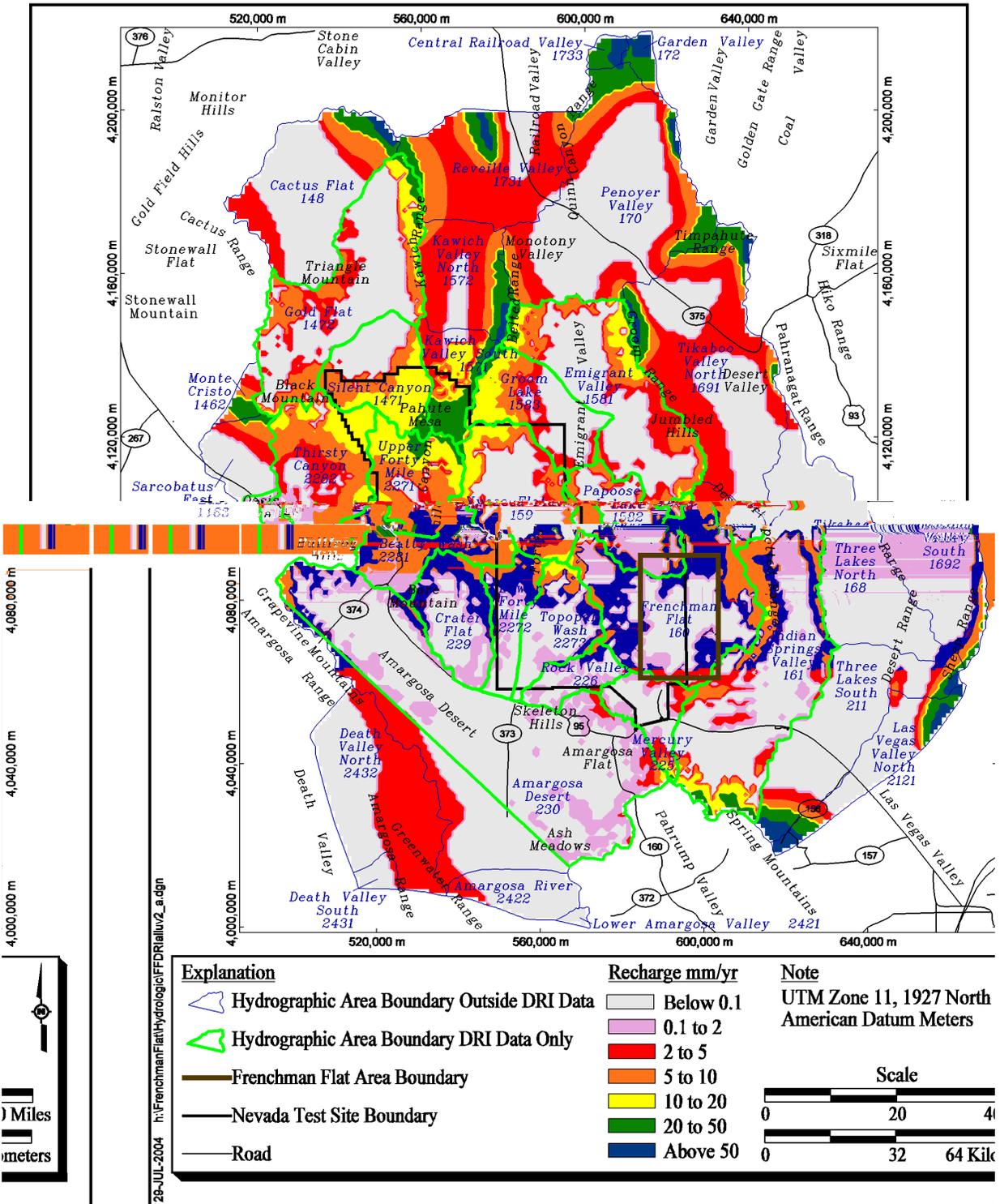


Figure 6-9  
DRI Recharge Distribution with Alluvial Mask  
(Russell and Minor, 2002)

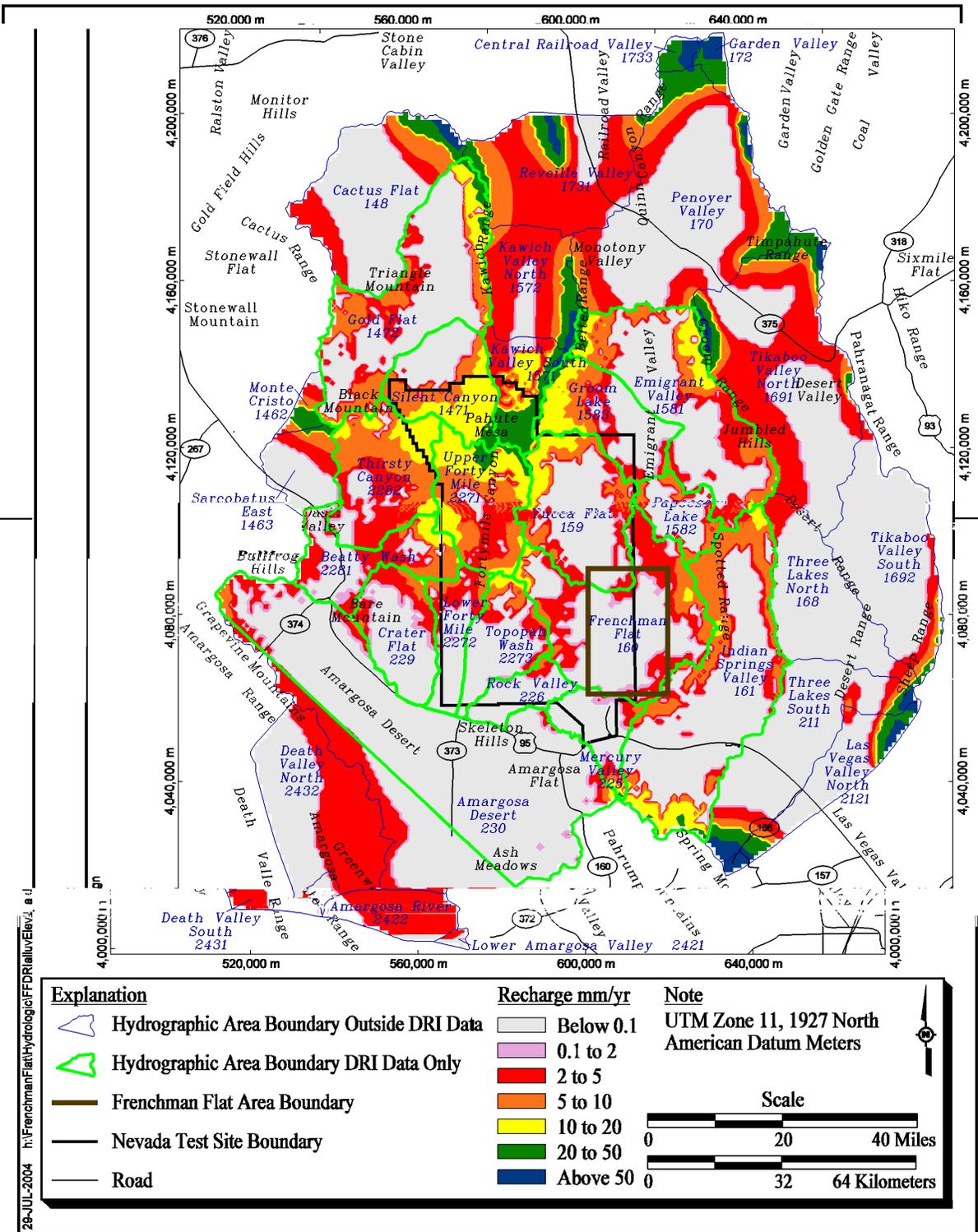


Figure 6-10  
DRI Recharge Distribution with Alluvial and Elevation Mask  
(Russell and Minor, 2002)

## **6.5 Base Recharge Model**

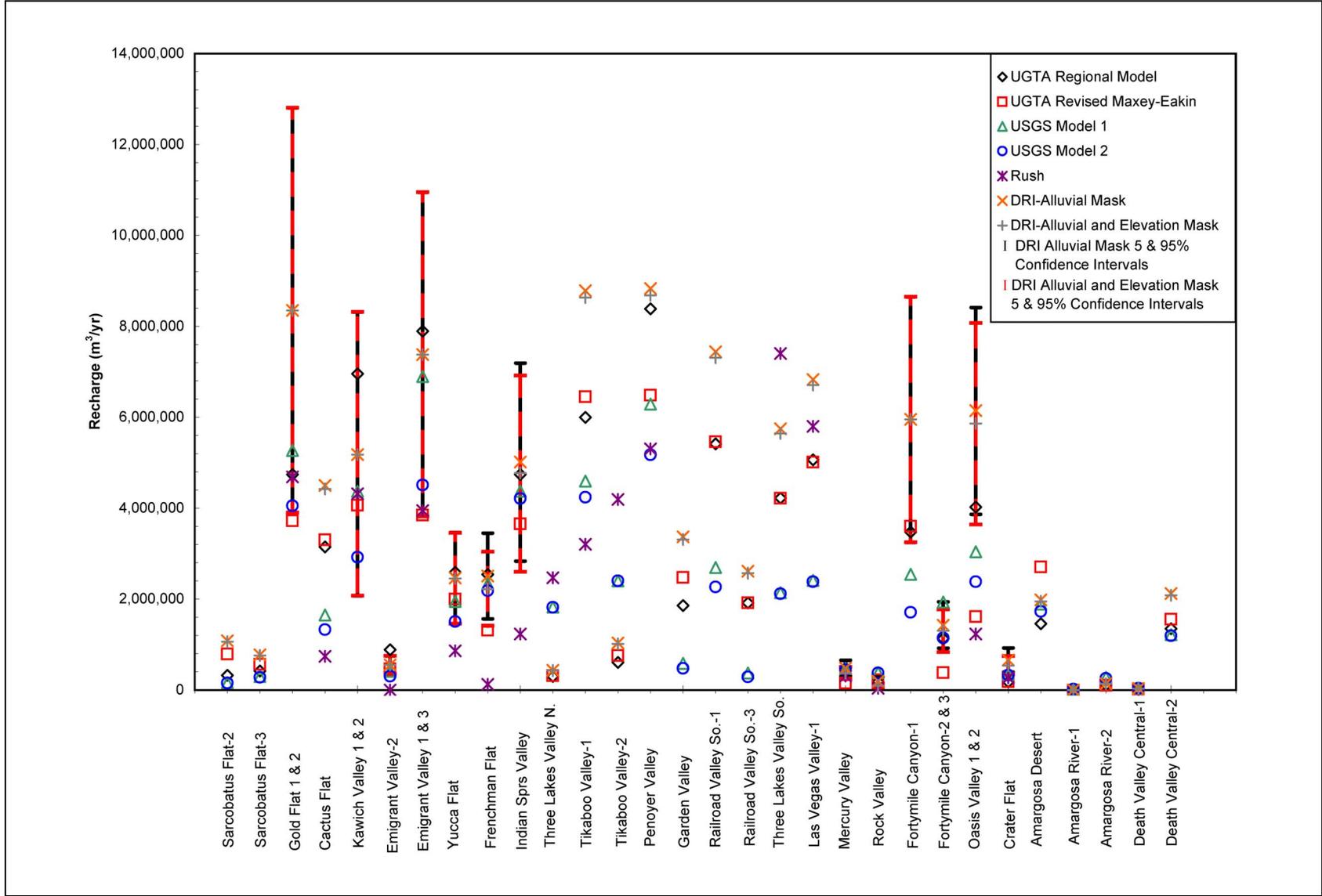


Figure 6-11  
Recharge Rate for all Recharge Models and all HAs

**Table 6-6  
Recharge Rates for HAs for all Recharge Models**

Sub-basin Number	Area Name	Secondary Name	UGTA Original modified ME (m <sup>3</sup> /yr)	UGTA Revised modified ME (m <sup>3</sup> /yr)	USGS Model 1 (m <sup>3</sup> /yr)	USGS Model 2 (m <sup>3</sup> /yr)	Rush (1970) (m <sup>3</sup> /yr)	DRI-Alluvial Mask Only			DRI-Alluvial and Elevation Mask		
								Percentile			Percentile		
								5 <sup>th</sup> (m <sup>3</sup> /yr)	50 <sup>th</sup> <sup>b</sup> (m <sup>3</sup> /yr)	95 <sup>th</sup> (m <sup>3</sup> /yr)	5 <sup>th</sup> (m <sup>3</sup> /yr)	50 <sup>th</sup> <sup>b</sup> (m <sup>3</sup> /yr)	95 <sup>th</sup> (m <sup>3</sup> /yr)
1462	Sarcobatus Flat-2	Monte Cristo	324,700	794532.94	162,400	153,300		<b>1,082,000</b>			<b>1,063,000</b>		
1463	Sarcobatus Flat-3	Sarcobatus East	420,300	568,889	297,400	280,800		<b>774,500</b>			<b>761,200</b>		
1471	Gold Flat-1 & 2	Silent Canyon	4,739,000	3,726,785	5,269,000	4,052,000	4,687,000	3,902,375	8,349,933	12,806,618	3,902,375	8,349,933	12,806,618
148	Cactus Flat		3,147,000	3,304,088	1,653,000	1,326,000	740,100		<b>4,498,000</b>			<b>4,421,000</b>	
1571	Kawich Valley-1 & 2	Kawich Valley South	6,952,000	4,068,436	4,372,000	2,923,000	4,317,000	2,074,601	5,179,836	8,317,501	2,074,601	5,179,836	8,317,501
1582	Emigrant Valley-2	Papoose Lake	887,800	466,868	412,600	305,300	1,233	353,077	552,945	752,863	353,077	552,945	752,863
1581	Emigrant Valley-1 & 3	Emigrant Valley	7,891,000	3,851,189	6,897,000	4,510,000	3,947,000 <sup>a</sup>	3,821,622	7,376,521	10,947,605	3,821,622	7,376,521	10,947,605
159	Yucca Flat		2,589,000	2,001,386	1,950,000	1,508,000	863,500	1,460,381	2,464,376	3,462,957	1,458,825	2,454,338	3,454,159
160	Frenchman Flat		2,542,000	1,319,064	2,340,000	2,183,000	123,400	1,563,499	2,506,705	3,451,927	1,412,403	2,225,121	3,043,080
161	Indian Springs Valley		4,741,000	3,655,436	4,376,000	4,210,000	1,234,000	2,836,248	5,014,868	7,189,613	2,596,903	4,773,754	6,913,761
168	Three Lakes Valley North		300,600	319,002	1,824,000	1,819,000	2,467,000		<b>434,300</b>			<b>426,800</b>	
1691	Tikaboo Valley-1	Tikaboo Valley North	5,997,000	6,451,646	4,595,000	4,241,000	3,207,000		<b>8,783,000</b>			<b>8,632,000</b>	
1692	Tikaboo Valley-2	Tikaboo Valley South	606,700	760,360	2,401,000	2,402,000	4,194,000		<b>1,035,000</b>			<b>1,017,000</b>	
170	Penoyer Valley		8,382,000	6,487,366	6,289,000	5,175,000	5,304,000		<b>8,832,000</b>			<b>8,680,000</b>	
172	Garden Valley		1,859,000	2,476,190	587,500	478,600			<b>3,371,000</b>			<b>3,313,000</b>	
1731	Railroad Valley South-1	Reveille Valley	5,416,000	5,464,048	2,696,000	2,266,000			<b>7,439,000</b>			<b>7,311,000</b>	
1733	Railroad Valley South-3	Central Railroad Valley	1,914,000	1,920,032	373,500	290,000			<b>2,614,000</b>			<b>2,569,000</b>	
211	Three Lakes Valley South		4,221,000	4,219,935	2,143,000	2,117,000	7,401,000		<b>5,745,000</b>			<b>5,646,000</b>	
2121	Las Vegas Valley-1		5,063,000	5,015,045	2,412,000	2,382,000	5,797,000		<b>6,827,000</b>			<b>6,710,000</b>	
225	Mercury Valley		424,800	154,914	475,000	446,400	308,400	307,595	480,655	653,026	235,827	370,761	505,057
226	Rock Valley		176,700	227,356	385,200	374,600	37,010	103,387	193,150	282,715	58,471	94,962	131,371
2271	Fortymile Canyon-1	Upper Fortymile	3,477,000	3,606,419	2,545,000	1,709,000		3,249,834	5,951,107	8,648,052	3,249,834	5,951,107	8,648,052
2272	Fortymile Canyon-2 & 3	Lower Fortymile	1,129,300	383,188	1,932,900	1,146,300		918,752	1,426,551	1,937,465	832,277	1,302,880	1,769,044
2281	Oasis Valley-1 & 2	Beatty Wash	4,022,000	1,616,471	3,041,000	2,380,800	1,234,000	3,865,340	6,145,495	8,411,821	3,638,233	5,862,809	8,069,781
229	Crater Flat		179,800	187,843	347,500	327,500	271,400	395,357	661,209	926,301	337,018	540,229	744,761
2301 & 2302	Amargosa Desert		1,457,000	1,455,702	1,893,000	1,730,000			<b>1,981,700</b>			<b>1,947,500</b>	
2421	Amargosa River-1	Lower Amargosa Valley	0	0	17,920	17,600			<b>0</b>			<b>0</b>	
2422	Amargosa River-2	Amargosa River	105,000	103,701	279,900	257,300			<b>141,000</b>			<b>138,800</b>	
2431	Death Valley Central-1	Death Valley South	15,870	23,983	41,670	37,180			<b>32,650</b>			<b>32,090</b>	
2432	Death Valley Central-2	Death Valley North	1,348,000	1,559,099	1,216,000	1,195,000			<b>2,123,000</b>			<b>2,086,000</b>	

Source: PM Hydrologic Data Document, Final (SNJV, 2004a)

<sup>a</sup> The reported recharge volume from Rush (1970) is only for the Emigrant Valley-3 basin not both.

<sup>b</sup> The data reported in these columns is a composite of direct DRI model calculations where available and values calculated from a regression analysis of the revised UGTA Maxey-Eakin model.

Bold values are calculated values as described in the text, based on extrapolated revised Maxey-Eakin values.

## **6.6 *Alternative Recharge Models***

## **6.7 *Limitations***

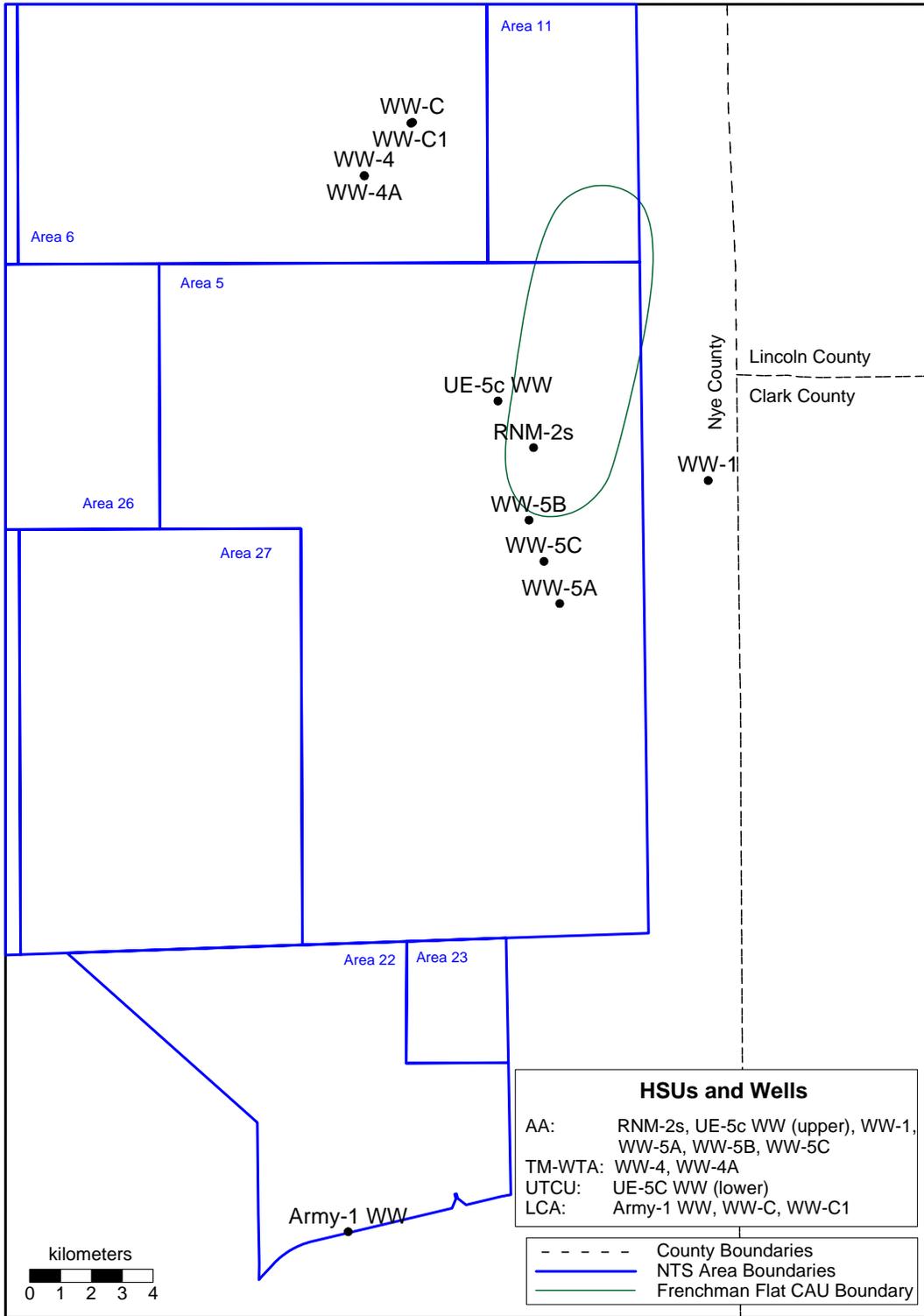
## **6.8 *Summary***



# **7.0** *Surface Groundwater Discharge*

## **7.1** *Objectives*

## ***7.2 Description of Available Data***



**Figure 7-1**  
**Location of Groundwater Pumping Wells in the Frenchman Flat Area and Vicinity**

**Table 7-1**  
**Summary of Pumping Data for Wells in Frenchman Flat**  
**and Selected Wells in CP Basin and Southern Yucca Flat**

Well Name	Period of Record	Average Discharge Rate (million gallons per month)
Army-1 WW	7/1962 to 12/2003	4.9
RNM-2S	10/1975 to 8/1991	23.4
UE-5c WW	2/1967 to 12/2003	unknown <sup>a</sup>
WW-1	2/1964 to 3/1967	2.9
WW-4	1/1983 to 12/2003	3.6
WW-4A	12/1993 to 12/2003	4.2
WW-5A	3/1951 to 12/1970	1.1
WW-5B	5/1951 to 12/2003	2.4
WW-5C	3/1954 to 12/2003	3.3
WW-C	9/1961 to 7/1995	3.4
WW-C1	6/1962 to 12/2003	2.1

Source: USGS, 2004

<sup>a</sup>Insufficient or no data to calculate monthly total from 7/1967 through 12/1982

$$MU_w = \frac{(A_w \sum MK_w)}{MU_n}$$

### 7.3 Well Discharge

#### *Army-1 WW*

**Table 7-2  
Site Information for Pumping Wells Located in the Frenchman Flat Area and Vicinity**

Well Reporting Name	Well Completion Date <sup>a</sup>	UTM Easting (m) <sup>b</sup>	UTM Northing (m) <sup>b</sup>	Land Surface Elevation (m amsl) <sup>c</sup>	Total Depth (m bgs) <sup>d</sup>	Effective Open Interval Top Elevation (m amsl) <sup>e</sup>	Effective Open Interval Bottom Elevation (m amsl) <sup>f</sup>	Primary HSU <sup>g</sup>	Secondary HSU <sup>h</sup>
Army-1 WW	7/15/1962 <sup>i</sup>	586,119.84	4,049,799.54	961.1	595.3 <sup>j</sup>	687.1 <sup>j</sup>	365.8 <sup>j</sup>	LCA	
RNM-2S	4/1/1974 <sup>k</sup>	592,134.10	4,075,477.14	954.2	352.4 <sup>k</sup>	734.6 <sup>j</sup>	601.8 <sup>k</sup>	AA <sup>m</sup>	
UE-5c WW upper	11/1964 <sup>i</sup>	590,978.01	4,077,005.63	980.3	817.5 <sup>k</sup>	645.0 <sup>j</sup>	584.1 <sup>j</sup>	AA <sup>m</sup>	
UE-5c WW lower	11/1964 <sup>i</sup>	590,978.01	4,077,005.63	980.3	817.5 <sup>k</sup>	467.6 <sup>n</sup>	162.8 <sup>n</sup>	UTCU <sup>m</sup>	
WW-1	1950 <sup>o</sup>	597,789.78	4,074,403.55	944.9	265.2 <sup>n</sup>	727.3 <sup>j</sup>	700.5 <sup>n</sup>	AA <sup>m</sup>	
WW-4	11/18/1981 <sup>o</sup>	586,961.76	4,084,575.71	1,097.7	450.8 <sup>j</sup>	824.0 <sup>j</sup>	646.9 <sup>j</sup>	TM-WTA <sup>m</sup>	TSA/LTCU <sup>m</sup>
WW-4A	2/21/1990 <sup>o</sup>	586,647.95	4,084,372.25	1,099.1	462.1 <sup>j</sup>	811.4 <sup>j</sup>	641.3 <sup>j</sup>	TM-WTA <sup>m</sup>	TM-LVTA/TSA <sup>m</sup>
WW-5A	3/23/1951 <sup>o</sup>	592,982.61	4,070,370.54	943.0	277.4 <sup>k</sup>	730.9 <sup>j</sup>	665.6 <sup>p</sup>	AA <sup>m</sup>	
WW-5B	5/7/1951 <sup>q</sup>	591,986.26	4,073,102.55	942.8	274.3 <sup>k</sup>	729.4 <sup>j</sup>	668.5 <sup>j</sup>	AA <sup>m</sup>	
WW-5C	3/24/1954 <sup>o</sup>	592,471.81	4,071,751.81	939.7	365.8 <sup>k</sup>	669.3 <sup>j</sup>	573.9 <sup>j</sup>	AA <sup>m</sup>	
WW-C	3/30/1961 <sup>r</sup>	588,207.91	4,086,129.96	1,196.1	518.5 <sup>j</sup>	721.1 <sup>j</sup>	677.6 <sup>j</sup>	LCA <sup>r</sup>	
WW-C1	6/1962 <sup>j</sup>	588,156.98	4,086,102.86	1,195.9	502.9 <sup>j</sup>	727.6 <sup>j</sup>	693.0 <sup>j</sup>	LCA	

<sup>a</sup>Indicates date completed to HSU for depth-to-water measurements.

<sup>b</sup>Universal Transverse Mercator Zone 11, North American Datum 1927 in meters; source is the UGTA Borehole Index Database.

<sup>c</sup>Land-surface elevation in meters above mean sea level; source is the UGTA Borehole Index Database (NNSA/NSO, 2004).

<sup>d</sup>Total drilled depth in meters below ground surface.

<sup>e</sup>Effective open interval top elevation in meters above mean sea level; calculated as land-surface elevation minus depth to top of effective open interval.

<sup>f</sup>Effective open interval bottom in meters above mean sea level; calculated as land-surface elevation minus depth to bottom of effective open interval.

<sup>g</sup>Primary hydrostratigraphic unit.

<sup>h</sup>Secondary hydrostratigraphic unit.

<sup>i</sup>*Hydrogeologic Data from Selected Wells and Test Holes In and Adjacent to the Nevada Test Site, Nye County, Nevada, Through 1986.* Freddy E. Arteaga, Charles S. Savard, Michael E. Johnson, and J. Christopher Stone. USGS Open File Report 87-536 (USGS, 1991).

<sup>j</sup>*Nevada Test Site Water-Supply Wells.* David Gillespie, Dee Donithan, and Paul Seaber (Gillespie et al., 1996).

<sup>k</sup>*Integrated Analysis Report for Single Multiple-Well Aquifer Testing at Frenchman Flat, Well Cluster RNM-2s, Nevada Test Site, Nevada.* Rev. No: 0. Stoller-Navarro, (SNJV, 2004d).

<sup>l</sup>Defined as the elevation of the steady-state water-level (see [Section 8.0](#)).

<sup>m</sup>Hydrostratigraphic Database for Drill Holes in Frenchman Flat Area.

<sup>n</sup>*Records of Wells and Test Holes in the Nevada Test Site and Vicinity (through December 1966).* William Thordarson, R.Q. Young, and I.J. Winograd. December 1967. USGS TEI-872 (Thordarson et al., 1967).

<sup>o</sup>*Ground-Water Data for the Nevada Test Site and Selected Other Areas in South-Central Nevada, 1992-1993.* Steven R. Reiner, Glenn L. Locke, and Leanne S. Robie. USGS Open-File Report 95-160 (USGS, 1995).

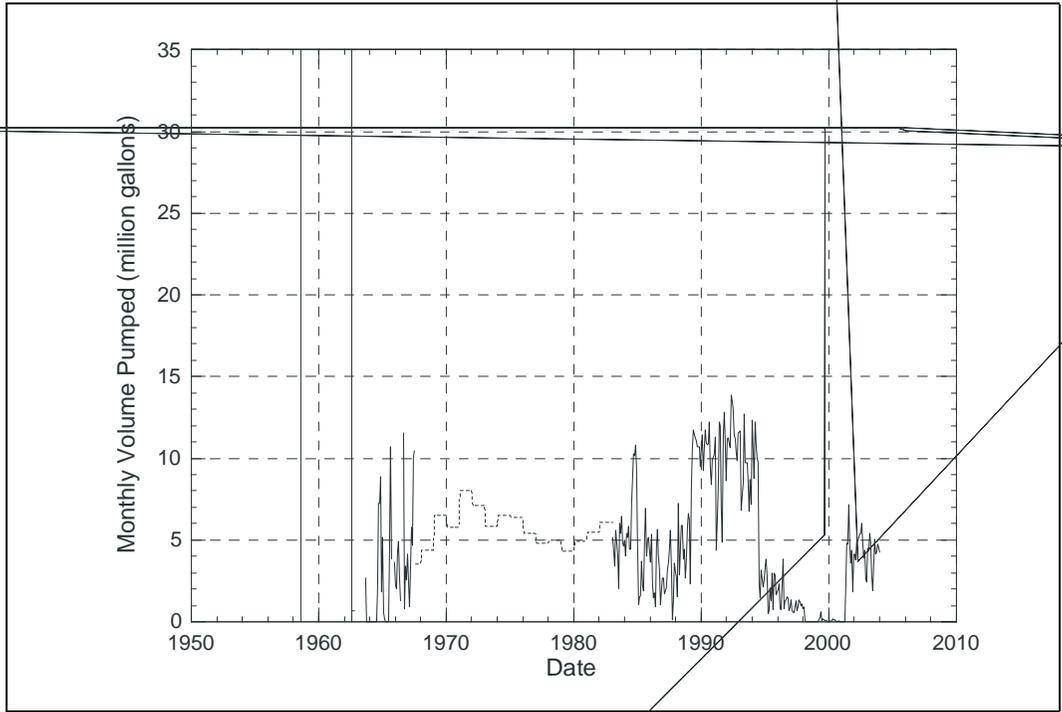
<sup>p</sup>*Well Recompletion Report For Water Well 5a Groundwater Characterization Project* (IT, 1993).

<sup>q</sup>*Water Wells in Frenchman and Yucca Valleys, Nevada Test Site; Nye County, Nevada.* J.W. Hood. 1961. USGS Trace Elements Investigations Report 788 (USGS, 1961).

<sup>r</sup>*Ground Water Test Well C, Nevada Test Site, Nye County, Nevada.* M.S. Garber and William Thordarsen. 1962. USGS Report TEI-818 (USGS, 1962).

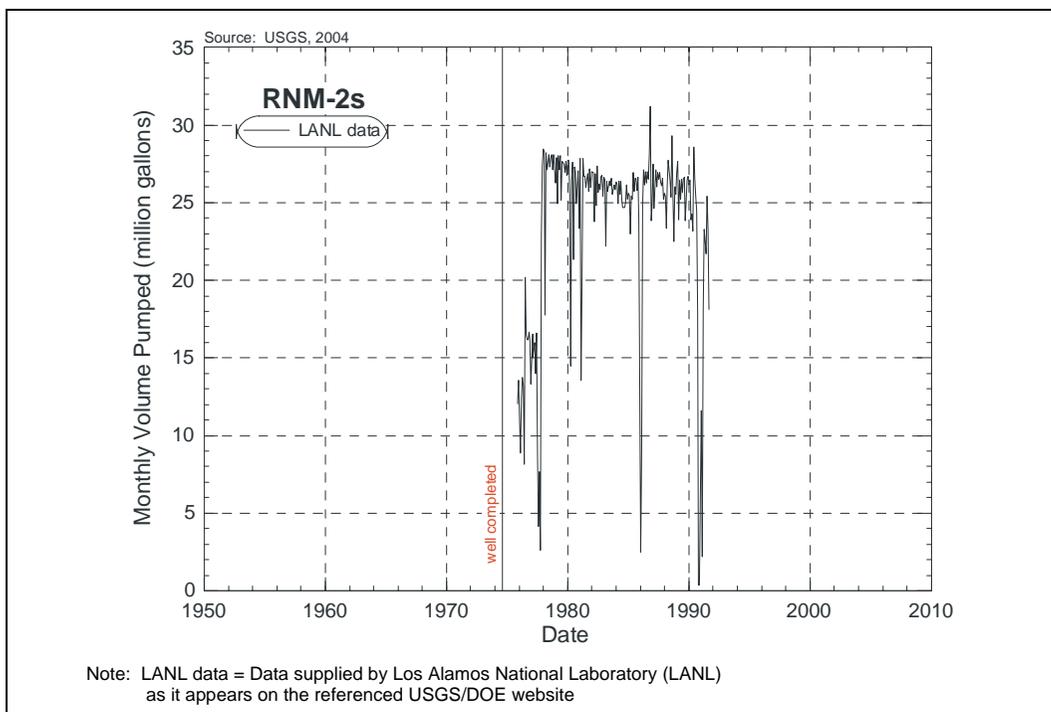
amsl = Above mean sea level

bgs = Below ground surface



**Figure 7-2**  
**Army-1 WW Monthly Pumping History**

**RNM-2S**



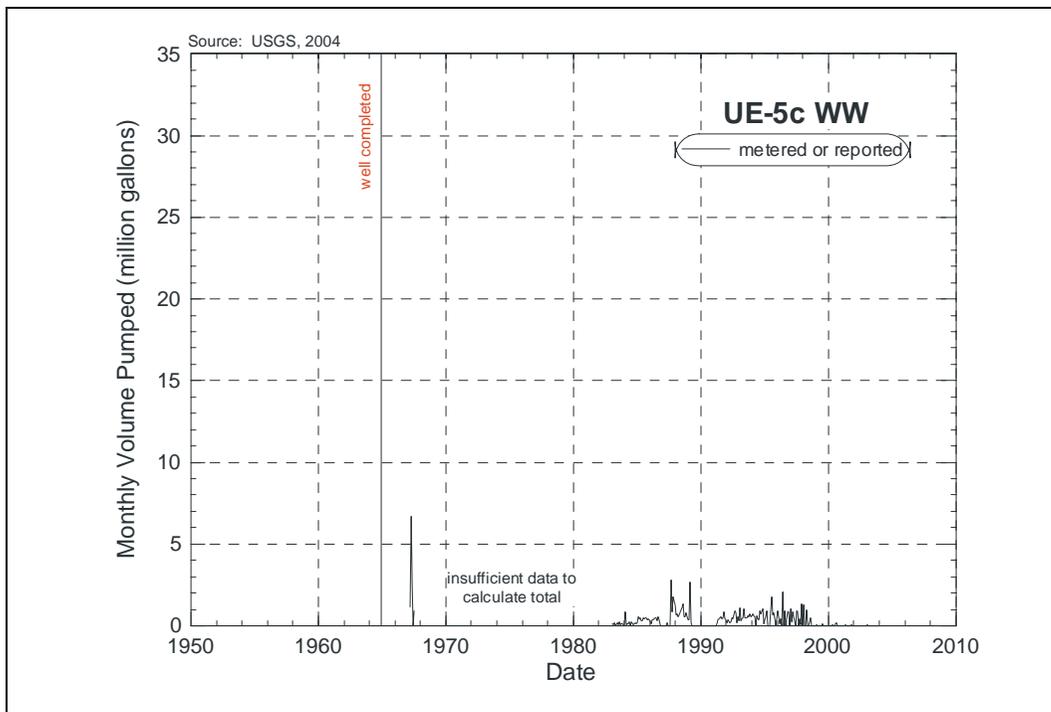
**Figure 7-3**  
**RNM-2S Monthly Pumping History**

**Table 7-3**  
**Pump Shut-Down Dates for RNM-2S During the CME**

Date Pump Turned Off	Date Pump Turned On	Number of Days Pump Off
3/7/1980	3/24/1980	17
6/6/1980	6/16/1980	10
11/10/1980	11/19/1980	9
1/13/1981	2/10/1981	28

Source: Bryant, 1992

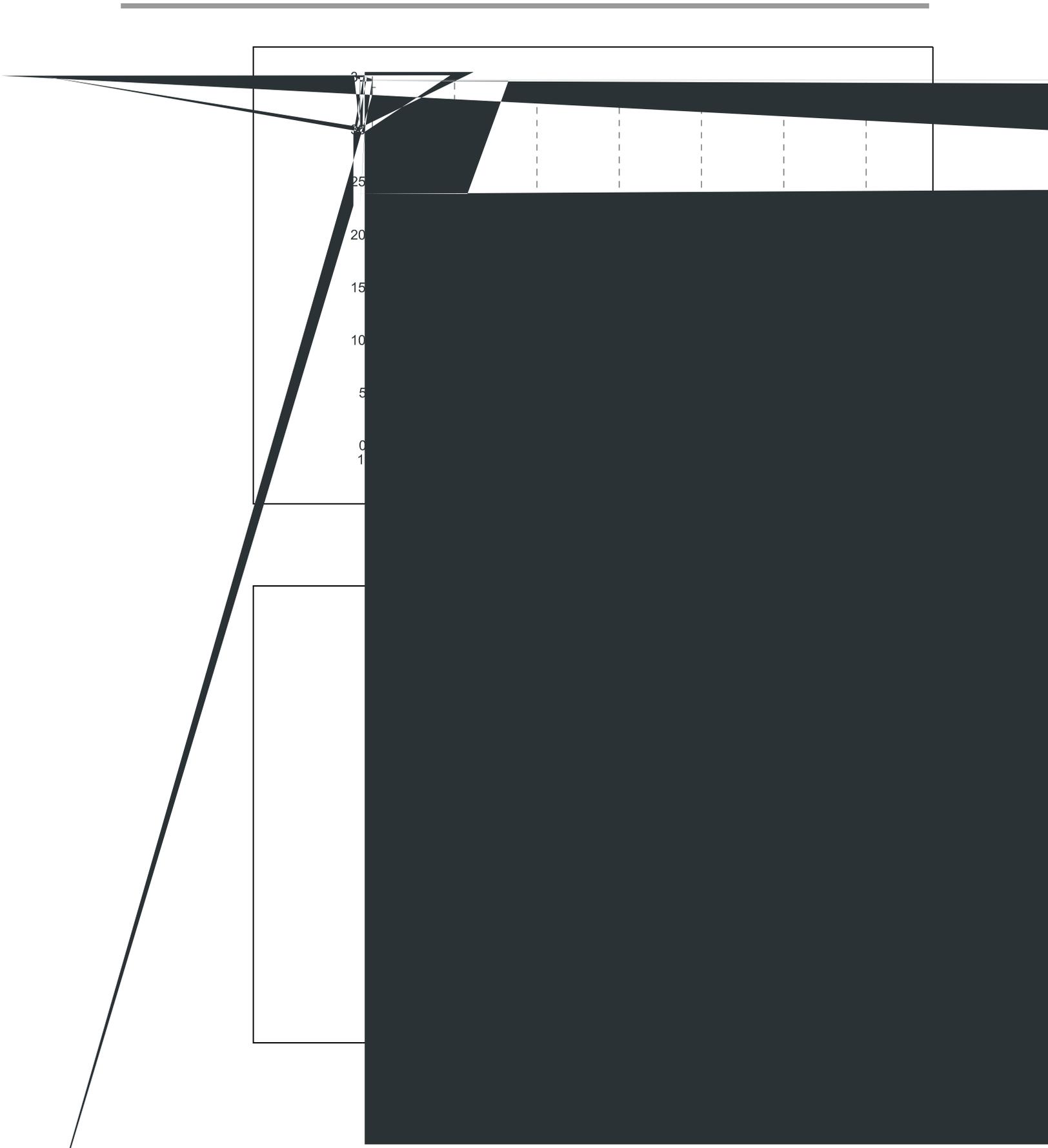
**UE-5c WW**



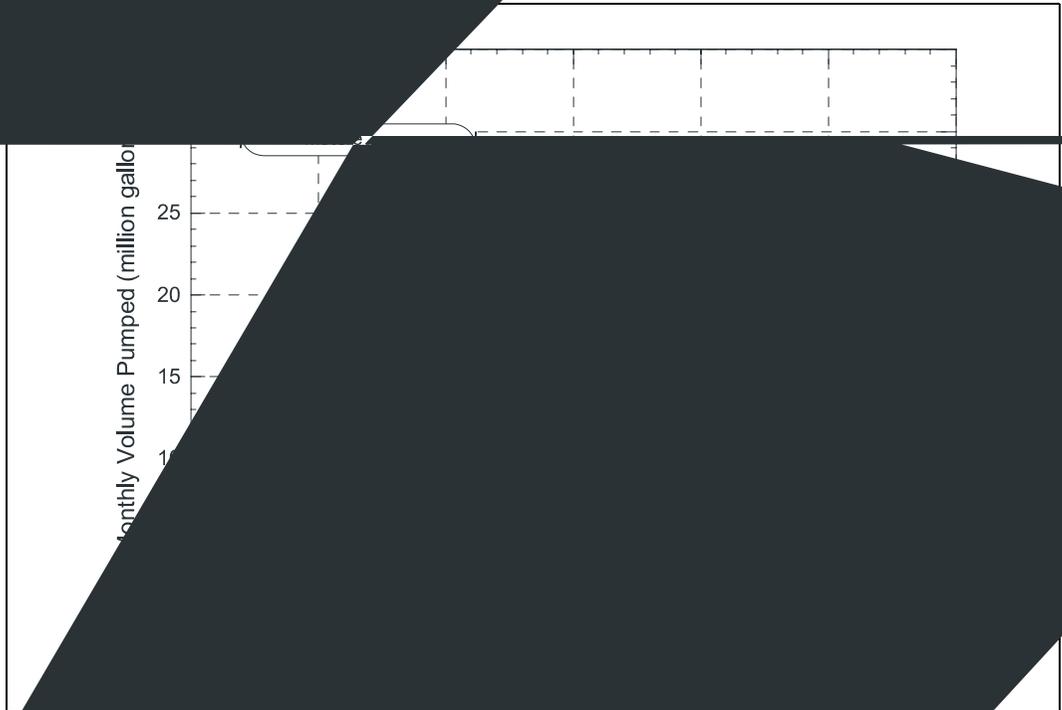
**Figure 7-4**  
**UE-5c WW Monthly Pumping History**

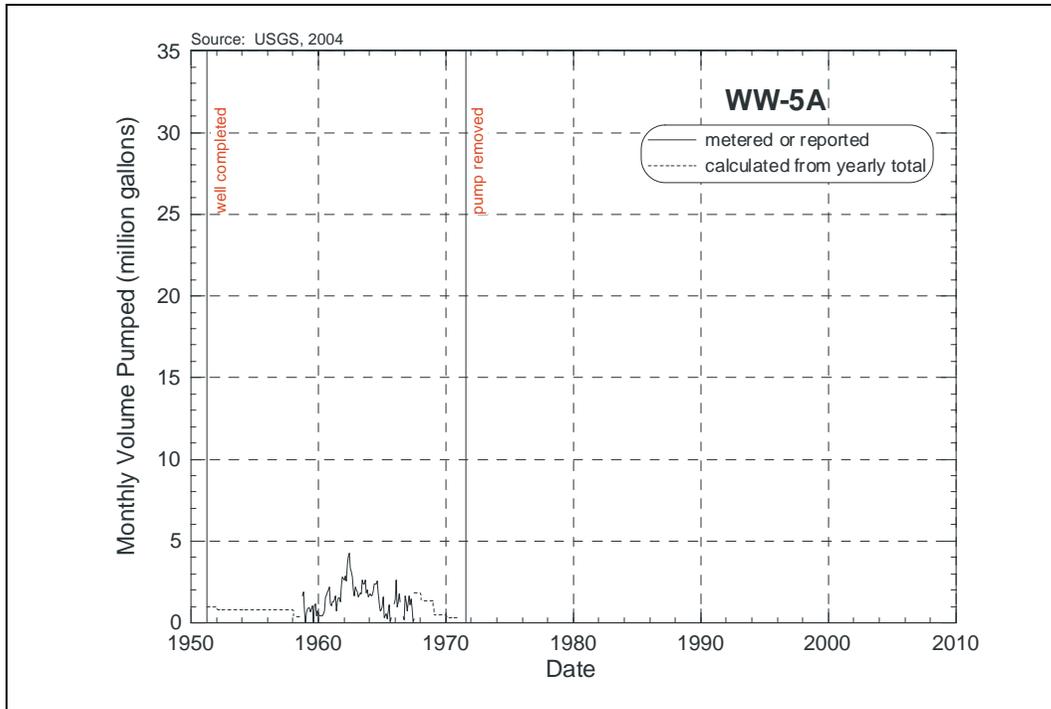
**WW-1**

**WW-4**



WW-4A



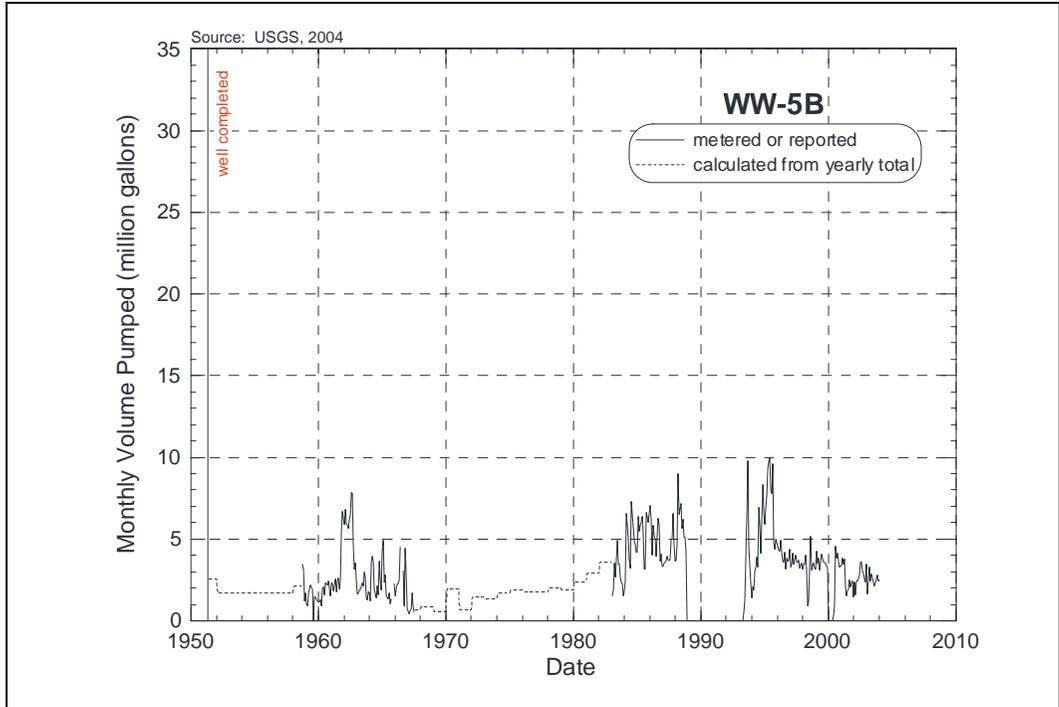


**Figure 7-8**  
**WW-5A Monthly Pumping History**

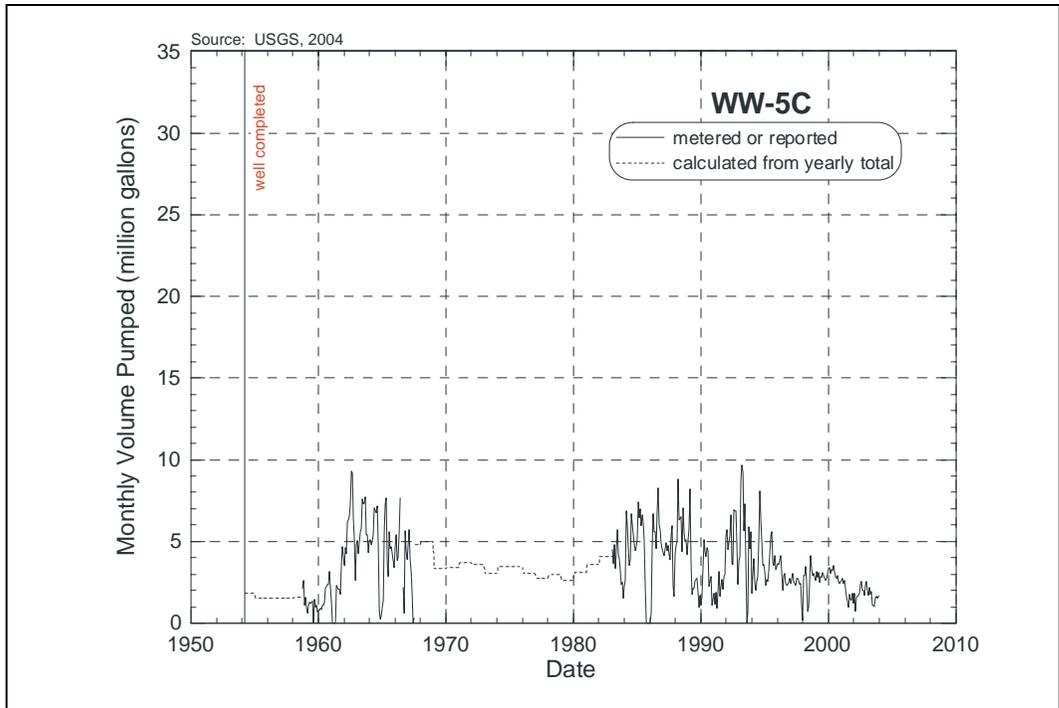
**WW-5B**

**WW-5C**

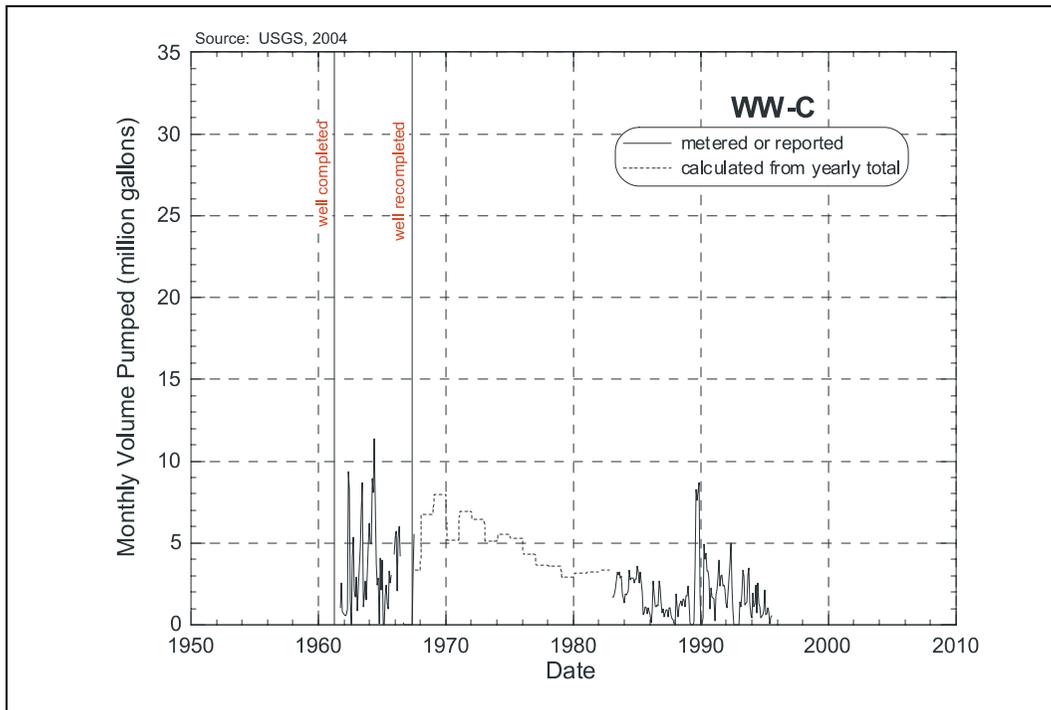
**WW-C**



**Figure 7-9**  
**WW-5B Monthly Pumping History**



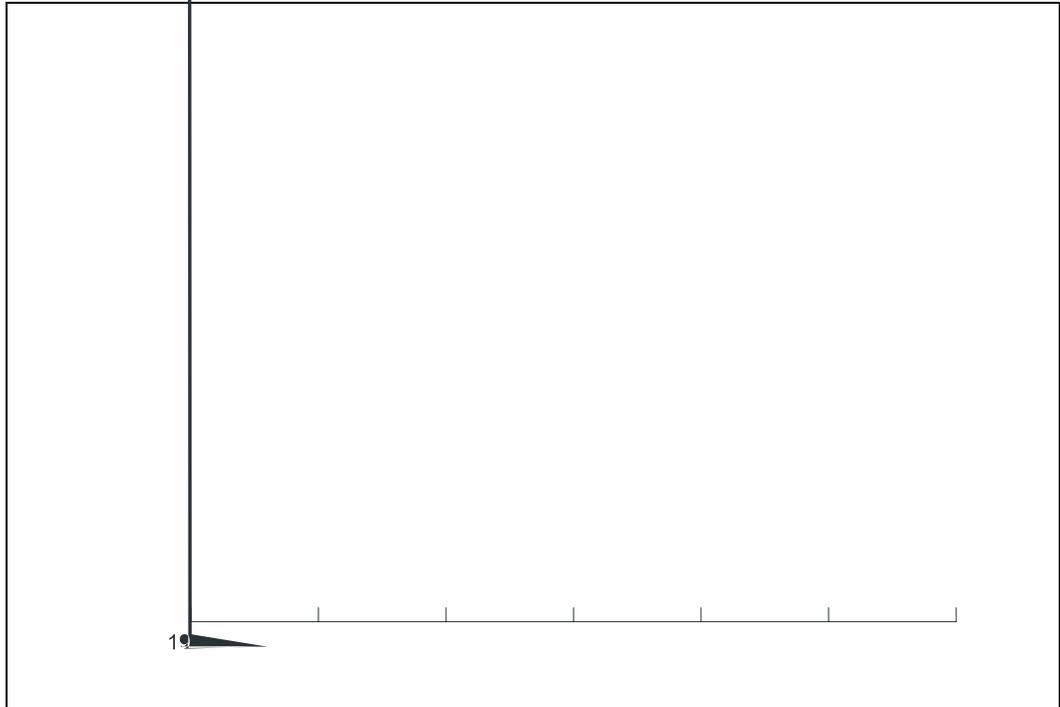
**Figure 7-10**  
**WW-5C Monthly Pumping History**



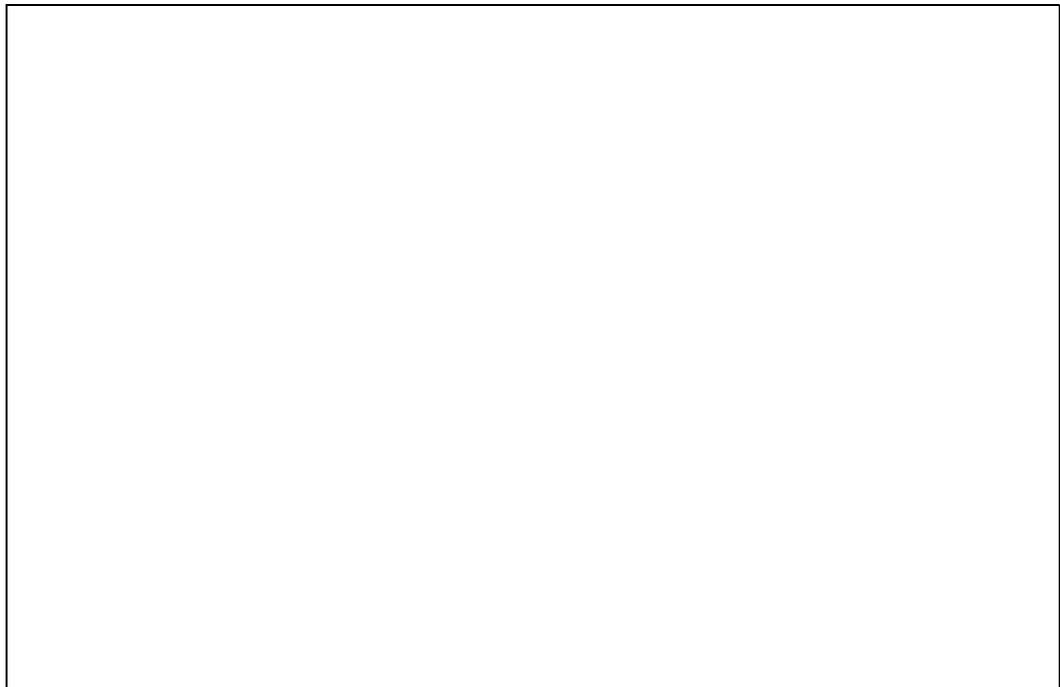
**Figure 7-11**  
**WW-C Monthly Pumping History**

**WW-C1**

**All Wells**



**Figure 7-12**  
**WW-C1 Monthly Pumping Data**



**Figure 7-13**  
**Total Water Withdrawal from Wells in the Frenchman Flat Area and Vicinity**

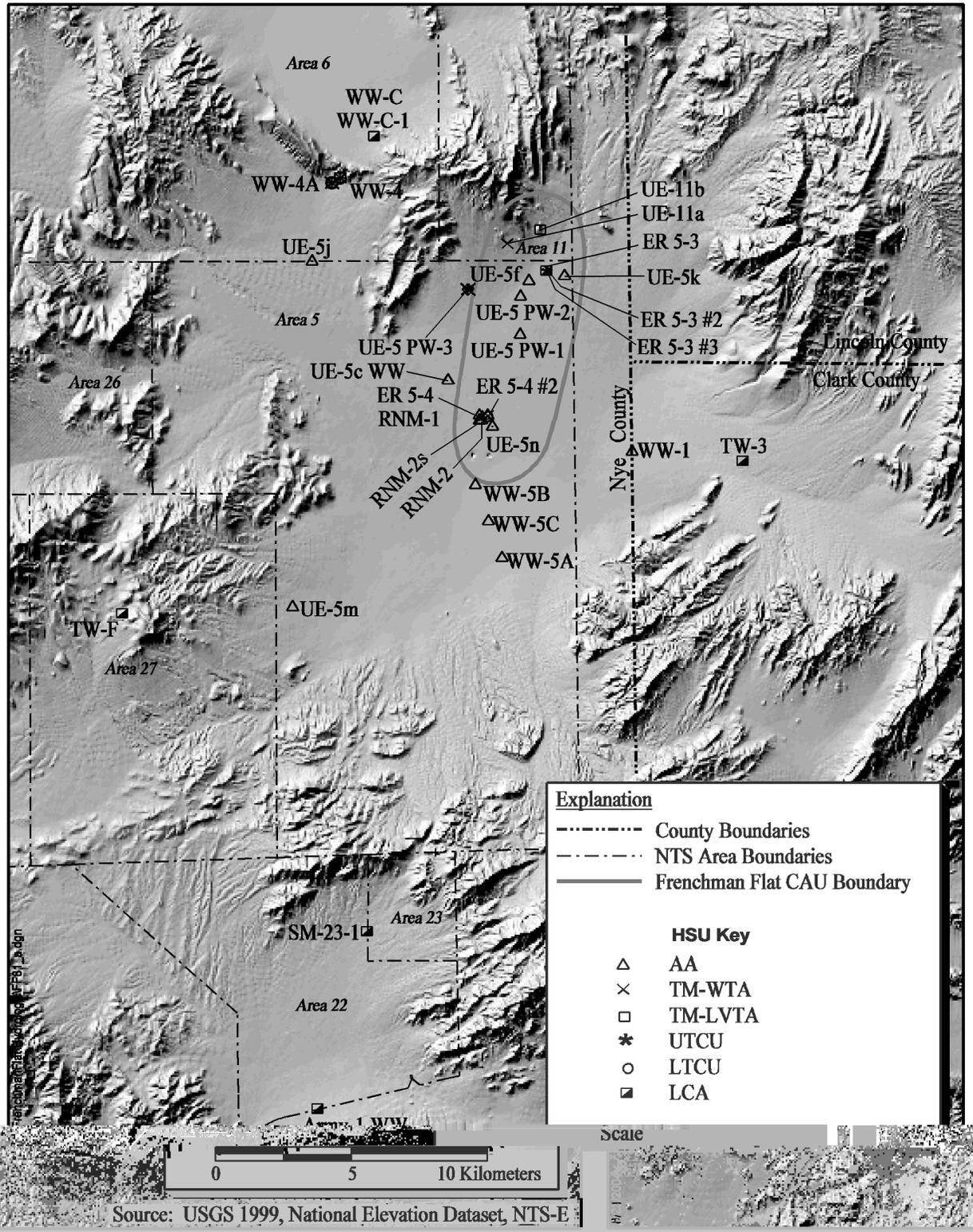
## **7.4 Limitations**

## **7.5 Summary**



## **8.0** *Hydraulic Heads*

### **8.1** *Objectives*



**Figure 8-1**  
Location of Wells in the Frenchman Flat Area and Vicinity

## **8.2 Approach**

## **8.3 Data Types and Prioritization**

***General Site Information***

***Depth-to-Water Data***

***Well Construction Information***

***Stratigraphic/Hydrostratigraphic Data***

***8.4 Data Compilation and Evaluation***

***8.4.1 Depth-to-Water Data***

## **8.4.2 General Site Information**

### **8.4.2.1 Land-Surface Elevation**

### **8.4.2.2 Effective Open Interval Definition**

**Table 8-1**  
**Site Information for Selected Wells and Boreholes Located in the Frenchman Flat Area and Vicinity**  
 (Page 1 of 2)

Well Reporting Name	Well Completion Date <sup>a</sup>	UTM Easting (m) <sup>b</sup>	UTM Northing (m) <sup>b</sup>	Land-Surface Elevation. (m amsl) <sup>c</sup>	Total Depth (m bgs) <sup>d</sup>	Effective Open Interval Top Elevation (m amsl) <sup>e</sup>	Effective Open Interval Bottom Elevation (m amsl) <sup>f</sup>	Primary HSU <sup>g</sup>	Secondary HSU <sup>h</sup>
Army-1 WW	7/15/1962 <sup>p</sup>	586,119.84	4,049,799.54	961.13	595.3 <sup>l</sup>	687.1 <sup>l</sup>	365.8 <sup>l</sup>	LCA	
ER 5-3 (3" deep)	3/16/2000 <sup>k</sup>	594,575.20	4,081,314.60	1,017.24	681.2 <sup>k</sup>	409.1 <sup>k</sup>	336.0 <sup>k</sup>	TM-WTA <sup>l</sup>	AA <sup>l</sup>
ER 5-3 (3" shallow)	3/16/2000 <sup>k</sup>	594,575.20	4,081,314.60	1,017.24	329.2 <sup>k</sup>	734.7 <sup>m</sup>	688.0 <sup>k</sup>	AA <sup>l</sup>	BLFA <sup>l</sup>
ER 5-3 upper (main)	3/16/2000 <sup>k</sup>	594,575.20	4,081,314.60	1,017.24	794.3 <sup>k</sup>	576.5 <sup>k</sup>	474.0 <sup>k</sup>	OAA <sup>l</sup>	
ER 5-3 lower (main)	3/16/2000 <sup>k</sup>	594,575.20	4,081,314.60	1,017.24	794.3 <sup>k</sup>	294.2 <sup>k</sup>	240.3 <sup>k</sup>	TM-WTA <sup>l</sup>	
ER 5-3 #2	5/19/2000 <sup>k</sup>	594,544.70	4,081,317.00	1,017.24	1,732.2 <sup>k</sup>	-407.3 <sup>k</sup>	-715.0 <sup>k</sup>	LCA <sup>l</sup>	
ER 5-3 #3	2/6/2001 <sup>n</sup>	594,643.00	4,081,151.00	1,017.24	548.6 <sup>n</sup>	587.2 <sup>n</sup>	468.6 <sup>n</sup>	OAA <sup>l</sup>	
ER 5-4 upper (main)	3/31/2001 <sup>n</sup>	592,450.00	4,075,696.00	954.54	1,137.5 <sup>n</sup>	431.8 <sup>n</sup>	286.4 <sup>n</sup>	AA <sup>l</sup>	
ER 5-4 lower (main)	3/31/2001 <sup>n</sup>	592,450.00	4,075,696.00	954.54	1,137.5 <sup>n</sup>	35.8 <sup>n</sup>	-183.0 <sup>n</sup>	AA <sup>l</sup>	TM-WTA <sup>l</sup>
ER 5-4 (piezometer)	3/31/2001 <sup>n</sup>	592,450.00	4,075,696.00	954.54	247.8 <sup>n</sup>	733.5 <sup>m</sup>	706.7 <sup>n</sup>	AA <sup>l</sup>	
ER 5-4 #2	9/18/2002 <sup>n</sup>	592,450.00	4,075,665.00	954.54	2,113.6 <sup>n</sup>	-1,022.5 <sup>n</sup>	-1,074.8 <sup>n</sup>	LTCU <sup>l</sup>	
RNM-1	5/10/1974 <sup>n</sup>	592,131.76	4,075,692.84	955.60	396.8 <sup>n</sup>	675.5 <sup>n</sup>	627.9 <sup>n</sup>	AA <sup>l</sup>	
RNM-2	8/21/1974 <sup>n</sup>	592,221.27	4,075,528.53	953.66	285.0 <sup>n</sup>	733.6 <sup>m</sup>	668.7 <sup>n</sup>	AA <sup>l</sup>	
RNM-2S	4/1/1974 <sup>n</sup>	592,134.10	4,075,477.14	954.16	352.4 <sup>n</sup>	734.6 <sup>m</sup>	601.8 <sup>n</sup>	AA <sup>l</sup>	
SM-23-1	1/29/1996 <sup>y</sup>	587,943.71	4,056,449.43	1,079.91	672.09 <sup>w</sup>	683.06 <sup>w</sup>	673.92 <sup>w</sup>	LCA <sup>x</sup>	
TW-3	5/1962 <sup>l</sup>	601,938.92	4,074,016.96	1,061.96	566.9 <sup>n</sup>	698.7 <sup>o</sup>	497.2 <sup>o</sup>	LCA <sup>n</sup>	
TW-F	6/12/1962 <sup>p</sup>	578,870.02	4,068,348.73	1,262.69	1,036.3 <sup>i</sup>	305.6 <sup>o</sup>	226.4 <sup>o</sup>	LCA <sup>l</sup>	
UE-11a	9/4/1982 <sup>p</sup>	593,170.64	4,082,194.90	1,078.48	426.7 <sup>l</sup>	733.8 <sup>m</sup>	651.8 <sup>o</sup>	TM-WTA <sup>l</sup>	
UE-11b	10/1965 <sup>i</sup>	594,393.85	4,082,708.07	1,093.01	397.2 <sup>l</sup>	743.7 <sup>m</sup>	700.4 <sup>o</sup>	TM-LVTA <sup>l</sup>	TM-WTA/TSA <sup>l</sup>
UE-5 PW-1	9/29/1992 <sup>p</sup>	593,655.59	4,078,714.21	968.73	255.7 <sup>q</sup>	733.8 <sup>m</sup>	713.0 <sup>p</sup>	AA <sup>l</sup>	
UE-5 PW-2	2/19/1993 <sup>p</sup>	593,669.53	4,080,138.47	989.54	280.4 <sup>q</sup>	733.7 <sup>m</sup>	709.2 <sup>p</sup>	AA <sup>l</sup>	
UE-5 PW-3	1/5/1993 <sup>p</sup>	591,708.10	4,080,410.46	1,004.50	291.1 <sup>q</sup>	733.8 <sup>m</sup>	713.4 <sup>p</sup>	TM-WTA <sup>l</sup>	
UE-5c WW upper	11/1964 <sup>l</sup>	590,978.01	4,077,005.63	980.32	817.5 <sup>n</sup>	645.0 <sup>l</sup>	584.1 <sup>l</sup>	AA <sup>l</sup>	
UE-5c WW lower	11/1964 <sup>l</sup>	590,978.01	4,077,005.63	980.32	817.5 <sup>n</sup>	467.6 <sup>o</sup>	162.8 <sup>o</sup>	LTCU <sup>l</sup>	
UE-5f	6/1965 <sup>i</sup>	593,974.25	4,080,786.51	1,006.09	335.3 <sup>l</sup>	734.8 <sup>m</sup>	670.8 <sup>o</sup>	AA <sup>l</sup>	
UE-5j	3/1966 <sup>l</sup>	585,926.56	4,081,520.84	1,090.57	378.6 <sup>l</sup>	Unknown <sup>f</sup>	712.0 <sup>l</sup>	AA <sup>l</sup>	TM-WTA <sup>l</sup>
UE-5k	2/1968 <sup>l</sup>	595,297.94	4,080,972.44	1,020.65	526.7 <sup>l</sup>	Unknown <sup>f</sup>	494.0 <sup>l</sup>	AA <sup>l</sup>	BLFA/TM-WTA <sup>l</sup>
UE-5m	4/1966 <sup>l</sup>	585,209.92	4,068,567.15	1,066.80	458.4 <sup>l</sup>	Unknown <sup>f</sup>	608.4 <sup>l</sup>	AA <sup>l</sup>	AA/LTCU/VCU <sup>l</sup>
UE-5n	3/1/1976 <sup>p</sup>	592,626.58	4,075,285.05	948.95	514.2 <sup>n</sup>	729.5 <sup>n</sup>	726.5 <sup>n</sup>	AA <sup>l</sup>	
WW-1	1950 <sup>o</sup>	597,789.78	4,074,403.55	944.88	265.2 <sup>o</sup>	727.3 <sup>m</sup>	700.5 <sup>o</sup>	AA <sup>l</sup>	

**Table 8-1**  
**Site Information for Selected Wells and Boreholes Located in the Frenchman Flat Area and Vicinity**  
 (Page 2 of 2)

Well Reporting Name	Well Completion Date <sup>a</sup>	UTM Easting (m) <sup>b</sup>	UTM Northing (m) <sup>b</sup>	Land-Surface Elevation. (m amsl) <sup>c</sup>	Total Depth (m bgs) <sup>d</sup>	Effective Open Interval Top Elevation (m amsl) <sup>e</sup>	Effective Open Interval Bottom Elevation (m amsl) <sup>f</sup>	Primary HSU <sup>g</sup>	Secondary HSU <sup>h</sup>
WW-4	11/18/1981 <sup>P</sup>	586,961.76	4,084,575.71	1,097.74	450.8 <sup>l</sup>	824.0 <sup>l</sup>	646.9 <sup>j</sup>	TM-WTA <sup>l</sup>	TSA/LTCU <sup>l</sup>
WW-4A	2/21/1990 <sup>P</sup>	586,647.95	4,084,372.25	1,099.11	462.1 <sup>l</sup>	811.4 <sup>l</sup>	641.3 <sup>j</sup>	TM-WTA <sup>l</sup>	TM-LVTA/TSA <sup>l</sup>
WW-5A	3/23/1951 <sup>P</sup>	592,982.61	4,070,370.54	942.97	277.4 <sup>n</sup>	730.9 <sup>m</sup>	665.6 <sup>s</sup>	AA <sup>l</sup>	
WW-5B	5/7/1951 <sup>t</sup>	591,986.26	4,073,102.55	942.83	274.3 <sup>n</sup>	729.4 <sup>l</sup>	668.5 <sup>j</sup>	AA <sup>l</sup>	
WW-5C	3/24/1954 <sup>P</sup>	592,471.81	4,071,751.81	939.73	365.8 <sup>n</sup>	669.3 <sup>l</sup>	573.9 <sup>j</sup>	AA <sup>l</sup>	
WW-C	3/30/1961 <sup>u</sup>	588,207.91	4,086,129.96	1,196.08	518.5 <sup>l</sup>	721.1 <sup>l</sup>	677.6 <sup>j</sup>	LCA <sup>u</sup>	
WW-C1	6/1962 <sup>i</sup>	588,156.98	4,086,102.86	1,195.93	502.9 <sup>l</sup>	727.6 <sup>m</sup>	693.0 <sup>j</sup>	LCA	

<sup>a</sup> Indicates date completed to HSU for depth-to-water measurements.

<sup>b</sup> Universal Transverse Mercator Zone 11, North American Datum 1927 in meters; source is the UGTA Borehole Index Database.

<sup>c</sup> Land-surface elevation in meters above mean sea level; source is the UGTA Borehole Index Database.

<sup>d</sup> Total drilled depth in meters below ground surface.

<sup>e</sup> Effective open interval top elevation in meters above mean sea level; calculated as land-surface elevation minus depth to top of effective open interval.

<sup>f</sup> Effective open interval bottom in meters above mean sea level; calculated as land-surface elevation minus depth to bottom of effective open interval.

<sup>g</sup> Primary hydrostratigraphic unit.

<sup>h</sup> Secondary hydrostratigraphic unit.

<sup>i</sup> *Hydrogeologic Data from Selected Wells and Test Holes In and Adjacent to the Nevada Test Site, Nye County, Nevada, Through 1986* (Arteaga et al., Charles S. Savard, Michael E. Johnson, and J. Christopher Stone. USGS Open File Report 87-536 (USGS, 1991).

<sup>j</sup> *Nevada Test Site Water-Supply Wells*. David Gillespie, Dee Donithan, and Paul Seaber. May 1996 (Gillespie et al., 1996).

<sup>k</sup> *Frenchman Flat Well Cluster ER-5-3 Data Report for Development and Hydraulic Testing*. Preliminary, Rev. No: 0. (IT, 2001c).

<sup>l</sup> Hydrostratigraphic Database for Drill Holes in Frenchman Flat Area.

<sup>m</sup> Defined as the elevation of the steady-state water-level.

<sup>n</sup> *Integrated Analysis Report for Single and Multiple-Well Aquifer Testing at Frenchman Flat Well Cluster RNM-2s, Nevada Test Site, Nevada*. Rev. No: 0. (SNJV, 2004d).

<sup>o</sup> *Records of Wells and Test Holes in the Nevada Test Site and Vicinity (through December 1966)*. William Thordarson, R.Q. Young, and I.J. Winograd. December 1967. USGS TEI-872 (USGS, 1967).

<sup>p</sup> *Ground-Water Data for the Nevada Test Site and Selected Other Areas in South-Central Nevada, 1992-1993*. Steven R. Reiner, Glenn L. Locke, and Leanne S. Robie. USGS Open-File Report 95-160 (USGS, 1995).

<sup>q</sup> *Analysis of Water Levels in the Frenchman Flat Area, Nevada Test Site*. Daniel J. Bright, Sharon A. Watkins, and Barbara A. Lisle. 2001. USGS Water-Resources Investigations Report 00-4272 (USGS, 2001).

<sup>r</sup> The borehole is open from near ground surface to total depth so the top of the open interval would be defined as the location of the steady-state hydraulic head. Since a steady-state hydraulic head could not be determined, the top of the effective open interval could not be determined.

<sup>s</sup> *Well Recompletion Report For Water Well 5a Groundwater Characterization Project*. (IT, 1993).

<sup>t</sup> *Water Wells in Frenchman and Yucca Valleys, Nevada Test Site; Nye County, Nevada*. J.W. Hood. 1961. USGS Trace Elements Investigations Report 788 (USGS, 1961).

<sup>u</sup> *Ground Water Test Well C, Nevada Test Site, Nye County, Nevada*. M.S. Garber and William Thordarsen. 1962. USGS Report TEI-818 (USGS, 1962).

<sup>v</sup> UGTA Borehole Index Database.

<sup>w</sup> USGS Website [http://nwis.waterdata.usgs.gov/vsa/nwis/gwlevels/?site\\_no=363905116005801](http://nwis.waterdata.usgs.gov/vsa/nwis/gwlevels/?site_no=363905116005801) (USGS, 2001).

<sup>x</sup> Sig Drellack, personal communication, July 8, 2004 (Drellack, 2004).

Note: Blank cells indicate no data are available.

AMSL = Above mean sea level

bgs = Below ground surface

### **8.4.2.3 HSU Assignment**

## **8.5 Water-Level Evaluation Method**

### 8.5.1 Effects of Temperature

◦ ◦ )  
◦ ◦ )

◦ ◦ ◦ )

o o

$$\eta' = \eta\left(\frac{\rho}{\rho'}\right)$$

$$\begin{aligned} \eta' &= \\ \eta &= \\ \rho &= \\ \rho' &= \end{aligned}$$

o o

### 8.5.2 Effects of Borehole Deviation

$$\left( \quad \right) \times \Delta \quad / \Delta$$

△

△

**Table 8-2**  
**Equations Used to Adjust Measured Depth to Water for Borehole Deviation**  
**(after Bright et al., 2001)**

Well Reporting Name	Deviation Survey Depth Interval (m)	Equation Used for Adjustment <sup>a</sup>	Average Adjustment <sup>b</sup> (m)
Army-1 WW	0 to 593.1	$V_d = M_d * 0.99923$	0.18
RNM-1 <sup>c</sup>	NA	$V_d = M_d * \cos (21^\circ)$	16
UE-5 PW-1	234.7 to 236.2	$V_d = M_d * 0.998 + 0.387 \text{ m}$	0.08
UE-5 PW-2	254.5 to 257.6	$V_d = M_d * 0.999 + 0.05 \text{ m}$	0.20
UE-5 PW-3	269.7 to 271.3	$V_d = M_d - 0.02 \text{ m}$	0.02
TW-F	525.8 to 533.4	$V_d = M_d * 0.9996 + 0.15 \text{ m}$	0.06
UE-5c	243.8 to 251.5	$V_d = M_d - 0.006 \text{ m}$	0.01
UE-11a	342.9 to 350.5	$V_d = M_d * 0.9996 + 0.11 \text{ m}$	0.03
WW-4	243.8 to 304.8	$V_d = M_d - 0.015$	0.02
WW-C	0 to 469.4	$V_d = M_d * 0.99959$	0.19
WW-C1	464.8 to 472.4	$V_d = M_d * 0.9848 + 5.856 \text{ m}$	1.3
ER 5-4 #2	7.6 to 373.4	$V_d = M_d * 0.9999 + 0.0008$	0.02

<sup>a</sup>  $V_d$  = True vertical depth to water (m)

$M_d$  = Measured depth to water (m)

<sup>b</sup> Average adjustments are an increase in water-level elevation

<sup>c</sup> Estimated based on design deviation of 21 degrees since no borehole deviation survey was found

NA = Not applicable

## **8.6 *Steady-State Hydraulic Heads***



**Table 8-3**  
**Summary of Hydraulic Heads at Sites with the Frenchman Flat Area and Vicinity**  
 (Page 1 of 2)

Well Reporting Name	Historical Steady-State Water-Level Elevation (m amsl)	Contemporary Steady-State Water-Level Elevation (m amsl)	Count	Minimum Water-Level Elevation (m amsl)	Maximum Water-Level Elevation (m amsl)	Standard Deviation (m)	Total Uncertainty (m)	Primary HSU	Type Correction <sup>a</sup>
Army-1 WW	721.87		12	721.43	722.26	0.24	1.15	LCA	BD
ER-5-3 (3" shallow)		734.57	17	734.46	734.70	0.06	1.06	AA	
ER-5-3 (3" deep)		734.08	15	733.76	734.56	0.19	1.19	TM-WTA	
ER-5-3 (main/composite)		734.55	18	734.42	734.68	0.07	1.07	AA and TM-WTA	
ER-5-3 #2	could not be determined							LCA	
ER-5-3 #3		734.59	13	734.49	734.67	0.06	1.05	AA	
ER-5-4 (piezometer)		733.49	6	733.35	733.54	0.07	0.43	AA	
ER-5-4 (main/composite)		733.34	7	733.28	733.44	0.06	0.43	AA	
ER 5-4 #2	could not be determined							LTCU	BD
RNM-1	731.31		6	730.90	731.94	0.36	1.60	AA	BD
RNM-2	733.58		1	733.58	733.58		0.88	AA	
RNM-2S	734.60		1	734.60	734.60		1.16	AA	
		733.64	24	733.49	733.78	0.07	0.46		
SM-23-1		725.01	20	724.91	725.10	0.04	0.68	LCA	
TW-3	725.52		26	725.10	726.13	0.23	1.21	LCA	
TW-F	730.51		25	730.05	730.80	0.17	1.24	LCA	BD, WT
UE-11a		733.79	1	733.79	733.79		1.21	TM-WTA	BD
UE-11b	743.71		1	743.71	743.71		1.16	TM-LVTA	
UE-5 PW-1		733.79	71	733.65	734.01	0.05	0.71	AA	BD
UE-5 PW-2		733.74	88	733.63	733.98	0.07	0.75	AA	BD
UE-5 PW-3		733.75	44	733.62	733.88	0.07	0.71	TM-WTA	BD

**Table 8-3**  
**Summary of Hydraulic Heads at Sites with the Frenchman Flat Area and Vicinity**  
 (Page 2 of 2)

Well Reporting Name	Historical Steady-State Water-Level Elevation (m amsl)	Contemporary Steady-State Water-Level Elevation (m amsl)	Count	Minimum Water-Level Elevation (m amsl)	Maximum Water-Level Elevation (m amsl)	Standard Deviation (m)	Total Uncertainty (m)	Primary HSU	Type Correction <sup>a</sup>
UE-5c WW	734.50		5	734.35	734.84	0.21	0.62	AA	BD
		733.28	1	733.28	733.28		0.91		
UE-5f	734.82		1	734.82	734.82		1.43	AA	
UE-5j	could not be determined							AA	
UE-5k	could not be determined							AA	
UE-5m	could not be determined							AA	
UE-5n		733.84	15	733.70	734.04	0.08	0.47	AA	
WW-1	727.25		1	727.25	727.25		4.40	AA	
WW-4	844.62		2	844.62	844.63	0.01	2.02	TM-WTA	BD
WW-4A	844.59		6	844.42	844.72	0.12	1.21	TM-WTA	
WW-5A	730.91		1	730.91	730.91		1.14	AA	
		726.17	98	725.31	726.68	0.26	0.90		
WW-5B	734.68		24	734.33	735.14	0.23	1.15	AA	
		733.31	6	733.20	733.43	0.08	1.00		
WW-5C	729.68		1	729.68	729.68		1.29	AA	
		720.59	1	720.59	720.59		1.29		
WW-C	726.00		13	725.25	727.83	0.70	1.45	LCA	BD
WW-C1	727.62		13	727.40	728.06	0.22	1.02	LCA	BD

<sup>a</sup>BD = Corrected for borehole deviation  
 WT = Corrected for water temperature



**Table 8-4**  
**Summary of Uncertainty in Estimated Steady-State Head**  
 (Page 1 of 2)

Well Reporting Name <sup>a</sup>	Accuracy of the Reference Point Elevation (m) <sup>b</sup>	Uncertainty in Estimated Steady-State Water-Level Elevation (m) <sup>c</sup>	Accuracy of Depth to Water Measurements (m) <sup>b</sup>	Uncertainty Due to Barometric Effects (m) <sup>d</sup>	Accuracy of Borehole Deviation Correction (m)	Accuracy Due to Data Frequency (m) <sup>e</sup>	Total Uncertainty (m)
Army 1 WW	0.30 <sup>f</sup>	0.24	0.03	0.30	0.08 <sup>k</sup>	0.20	1.15
ER 5-3 (3" shallow)	0.67 <sup>g</sup>	0.06	0.03	0.30	0.00 <sup>l</sup>	0.00	1.06
ER 5-3 (3" deep)	0.67 <sup>g</sup>	0.19	0.03	0.30	0.00 <sup>l</sup>	0.00	1.19
ER- 5-3 (main)	0.67 <sup>g</sup>	0.07	0.03	0.30	0.00 <sup>l</sup>	0.00	1.07
ER 5-3 #2	No steady-state head determined						
ER 5-3 #3	0.66 <sup>g</sup>	0.06	0.03	0.30	0.00 <sup>l</sup>	0.00	1.05
ER 5-4 (piezometer)	0.04 <sup>g</sup>	0.07	0.03	0.30	0.00 <sup>l</sup>	0.00	0.44
ER 5-4 (main)	0.04 <sup>g</sup>	0.06	0.03	0.30	0.00 <sup>l</sup>	0.00	0.43
ER 5-4 #2	No steady-state head determined						
RNM-1	0.06 <sup>g</sup>	0.36	0.03 <sup>j</sup>	0.30	0.75 <sup>k</sup>	0.10	1.60
RNM-2	0.03 <sup>g</sup>	i	0.03 <sup>j</sup>	0.30	0.02 <sup>m</sup>	0.50	0.88
RNM-2S (historical)	0.04 <sup>g</sup>	i	0.30	0.30	0.02 <sup>m</sup>	0.50	1.16
RNM-2S (contemporary)	0.04 <sup>g</sup>	0.07	0.03	0.30	0.02 <sup>m</sup>	0.00	0.46
SM-23-1	0.30 <sup>f</sup>	0.04	0.03	0.30	0.01 <sup>n</sup>	0.00	0.68
TW-3	0.30 <sup>f</sup>	0.23	0.30	0.30	0.03 <sup>m</sup>	0.05	1.21
TW-F	0.30 <sup>f</sup>	0.17	0.30	0.30	0.07 <sup>k</sup>	0.10	1.24
UE-11a	0.07 <sup>g</sup>	i	0.30	0.30	0.04 <sup>k</sup>	0.50	1.21
UE-11b	0.30 <sup>f</sup>	i	0.03 <sup>j</sup>	0.30	0.03 <sup>m</sup>	0.50	1.16
UE-5 PW-1	0.30 <sup>f</sup>	0.05	0.03	0.30	0.03 <sup>o</sup>	0.00	0.71
UE-5 PW-2	0.30 <sup>f</sup>	0.07	0.03	0.30	0.05 <sup>o</sup>	0.00	0.75
UE-5 PW-3	0.30 <sup>f</sup>	0.07	0.03	0.30	0.01 <sup>o</sup>	0.00	0.71
UE-5c WW (historical)	0.06 <sup>g</sup>	0.21	0.03 <sup>j</sup>	0.30	0.02 <sup>k</sup>	0.00	0.62
UE-5c WW (contemporary)	0.06 <sup>g</sup>	i	0.03 <sup>j</sup>	0.30	0.02 <sup>k</sup>	0.50	0.91
UE-5f	0.08 <sup>g</sup>	i	0.03 <sup>j</sup>	0.30	0.02 <sup>m</sup>	1.00	1.43
UE-5j	No steady-state head determined						
UE-5k	No steady-state head determined						
UE-5m	No steady-state head determined						

**Table 8-4**  
**Summary of Uncertainty in Estimated Steady-State Head**  
 (Page 2 of 2)

Well Reporting Name <sup>a</sup>	Accuracy of the Reference Point Elevation (m) <sup>b</sup>	Uncertainty in Estimated Steady-State Water-Level Elevation (m) <sup>c</sup>	Accuracy of Depth to Water Measurements (m) <sup>b</sup>	Uncertainty Due to Barometric Effects (m) <sup>d</sup>	Accuracy of Borehole Deviation Correction (m)	Accuracy Due to Data Frequency (m) <sup>e</sup>	Total Uncertainty (m)
UE-5n	0.04 <sup>g</sup>	0.08	0.03	0.30	0.02 <sup>m</sup>	0.00	0.47
WW-1	3.05 <sup>h</sup>	i	0.03 <sup>j</sup>	0.30	0.02 <sup>m</sup>	1.00	4.40
WW-4	0.89 <sup>g</sup>	0.01	0.30	0.30	0.02 <sup>k</sup>	0.50	2.02
WW-4A	0.48 <sup>g</sup>	0.12	0.30	0.30	0.005 <sup>n</sup>	0.00	1.21
WW-5A (historical)	0.29 <sup>g</sup>	i	0.03	0.30	0.02 <sup>m</sup>	0.50	1.14
WW-5A (contemporary)	0.29 <sup>g</sup>	0.26	0.03	0.30	0.02 <sup>m</sup>	0.00	0.90
WW-5B (historical)	0.30 <sup>f</sup>	0.23	0.30	0.30	0.02 <sup>m</sup>	0.00	1.15
WW-5B (contemporary)	0.30 <sup>f</sup>	0.08	0.30	0.30	0.02 <sup>m</sup>	0.00	1.00
WW-5C (historical)	0.44 <sup>g</sup>	i	0.03	0.30	0.02 <sup>m</sup>	0.50	1.29
WW-5C (contemporary)	0.44 <sup>g</sup>	i	0.03	0.30	0.02 <sup>m</sup>	0.50	1.29
WW-C	0.30 <sup>f</sup>	0.70	0.03 <sup>j</sup>	0.30	0.12 <sup>k</sup>	0.00	1.45
WW-C-1	0.07 <sup>g</sup>	0.22	0.03 <sup>j</sup>	0.30	0.30 <sup>k</sup>	0.10	1.02

<sup>a</sup> When both a historical and a contemporary steady-state head was determined for a well, historical indicates this is the uncertainty for the historical steady-state head and contemporary indicates this is the uncertainty for the contemporary steady-state head.

<sup>b</sup> Source is UGTA Borehole Index Database

<sup>c</sup> Standard deviation of water-level measurements used to determine the steady-state head

<sup>d</sup> Accuracy assumed to be 1 ft based on discussion in Bright et al. (2001)

<sup>e</sup> The uncertainty was assumed to be zero for cases when many measurements of nearly the same value over a significant time period were used to estimate the steady-state head, was assumed to be 0.5 m when only one measurement was used to estimate the steady-state head, was assumed to be between 0.1 and 0.25 m when several measurements were used to estimate the steady-state head but those measurements constituted single measurements or only a few measurements at different time periods, and was assumed to be 1.0 m for wells having only a single water-level measurement

<sup>f</sup> Uncertainty assumed to be 0.30 m, which is slightly higher than the average difference between recently obtained land-surface elevation measurements made with high precision GPS (not yet published) and the land-surface elevations used in this analysis

<sup>g</sup> Uncertainty is the difference between recently obtained land-surface elevation measurements made with high precision GPS (not yet published) and the land-surface elevations used in this analysis

<sup>h</sup> The accuracy of the reference point elevation measurement as given in the UGTA Borehole Index Database

<sup>i</sup> Steady-state head determined from only one measurement

<sup>j</sup> No accuracy available in UGTA Borehole Index Database and uncertainty is estimated

<sup>k</sup> The accuracy of the borehole deviation survey conducted in the well was assumed to be 0.5 degrees

<sup>l</sup> The borehole deviation survey was assumed to be 100 percent accurate

<sup>m</sup> No borehole deviation was conducted in the well and an uncertainty in deviation of 1.0 degrees was assumed

<sup>n</sup> No borehole deviation was conducted in the well and an uncertainty in deviation of 0.5 degrees was assumed

<sup>o</sup> The accuracy of the borehole deviation survey conducted in the well was assumed to be 0.25 degrees

*Army-1 WW*

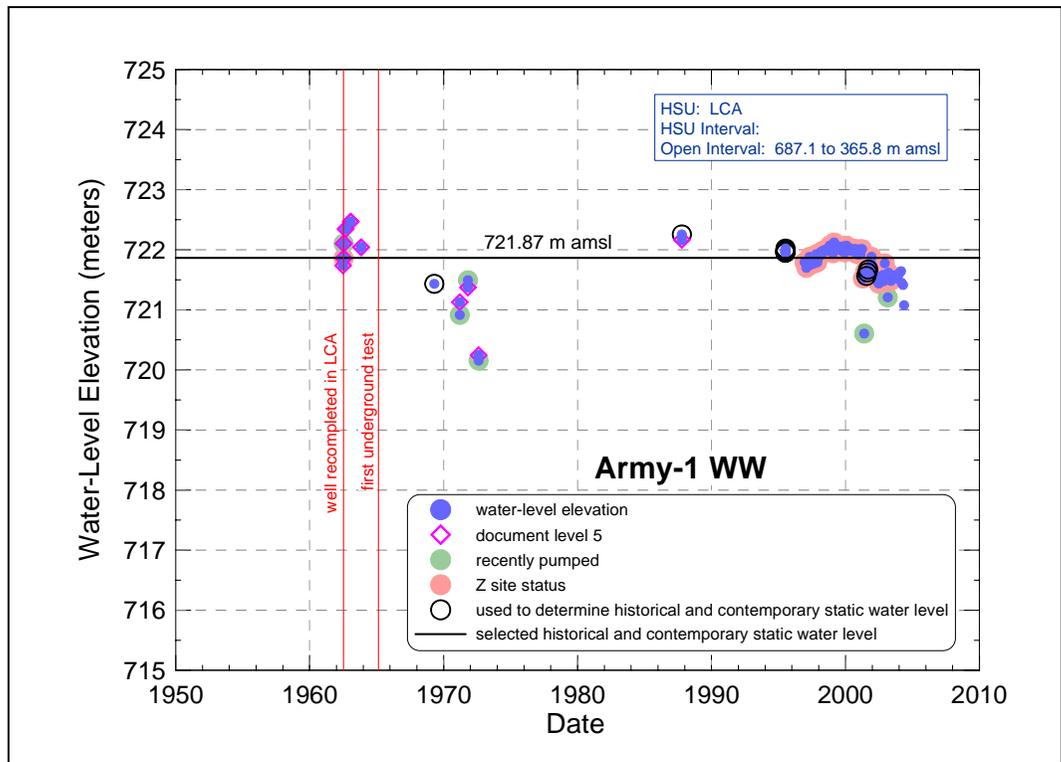
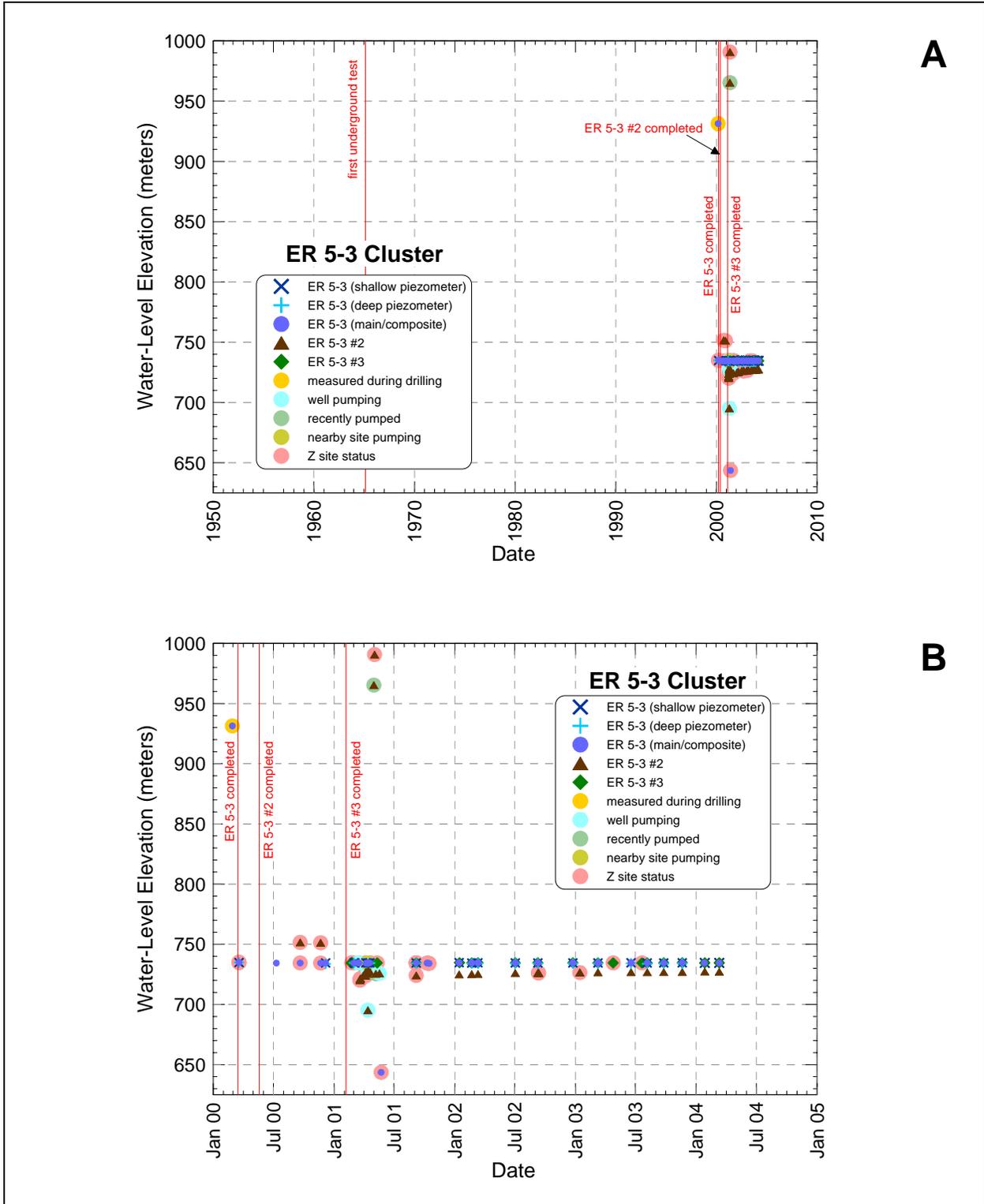
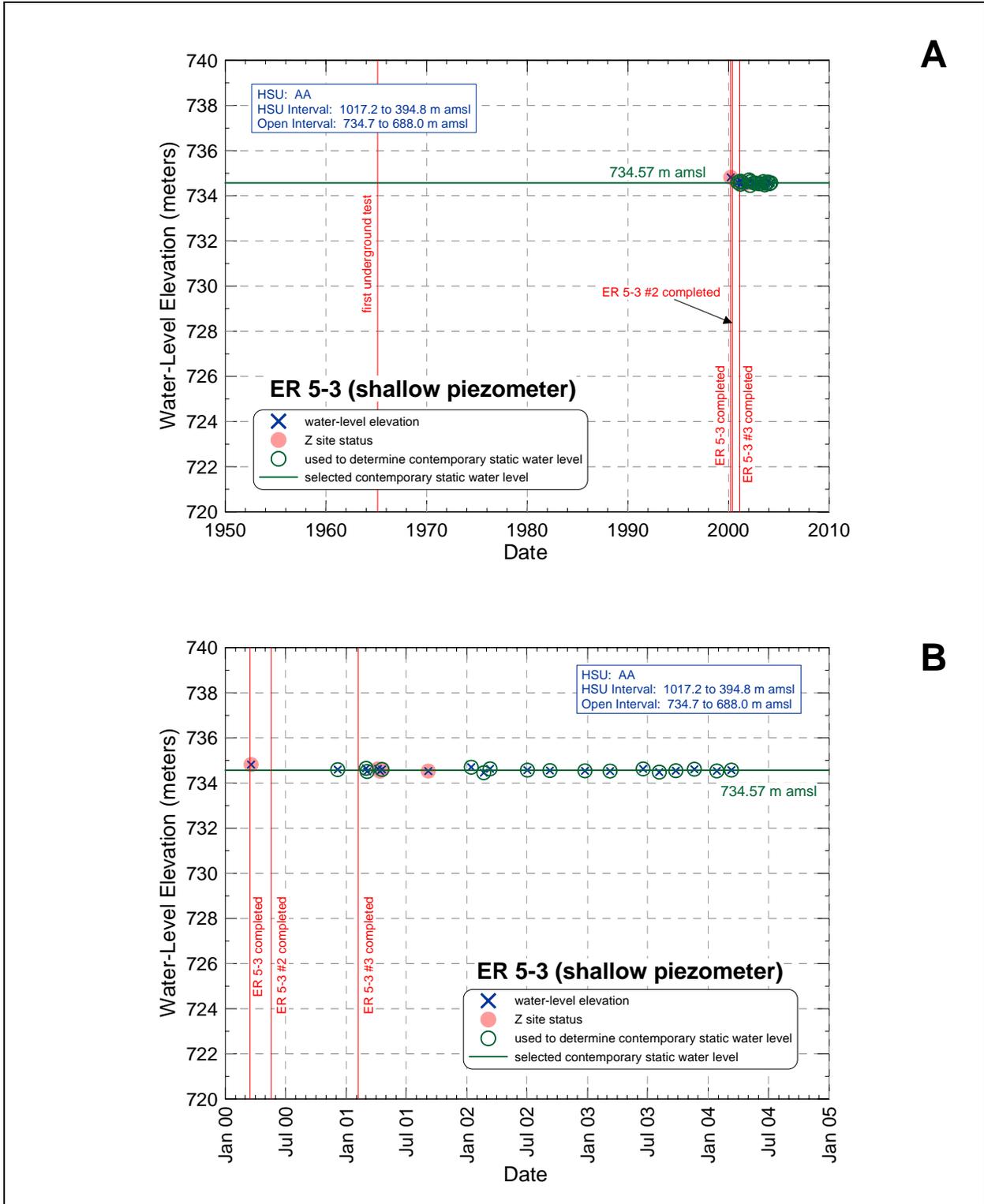


Figure 8-2  
Army-1 WW Water-Level History

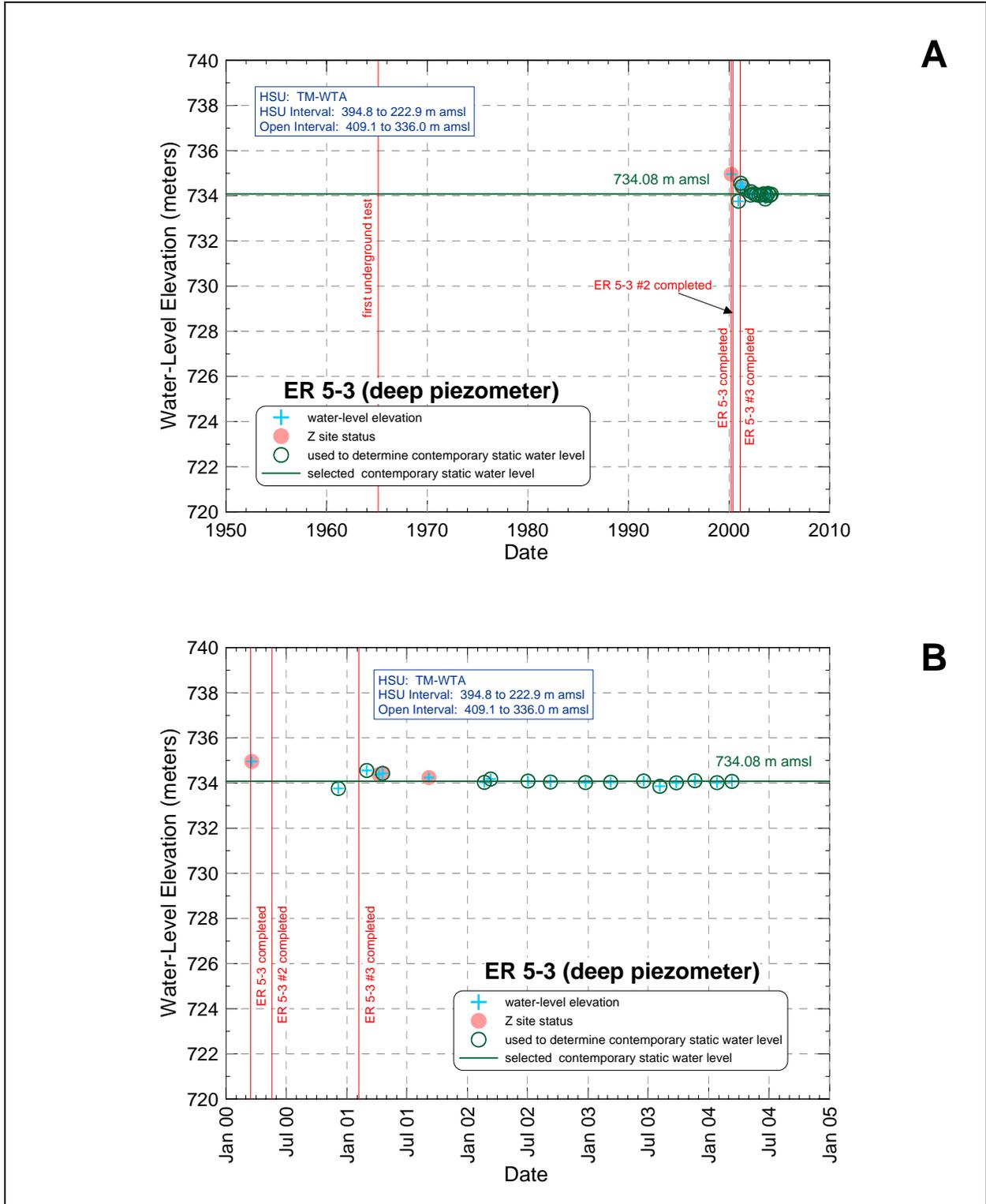
***ER-5-3 Well Cluster***



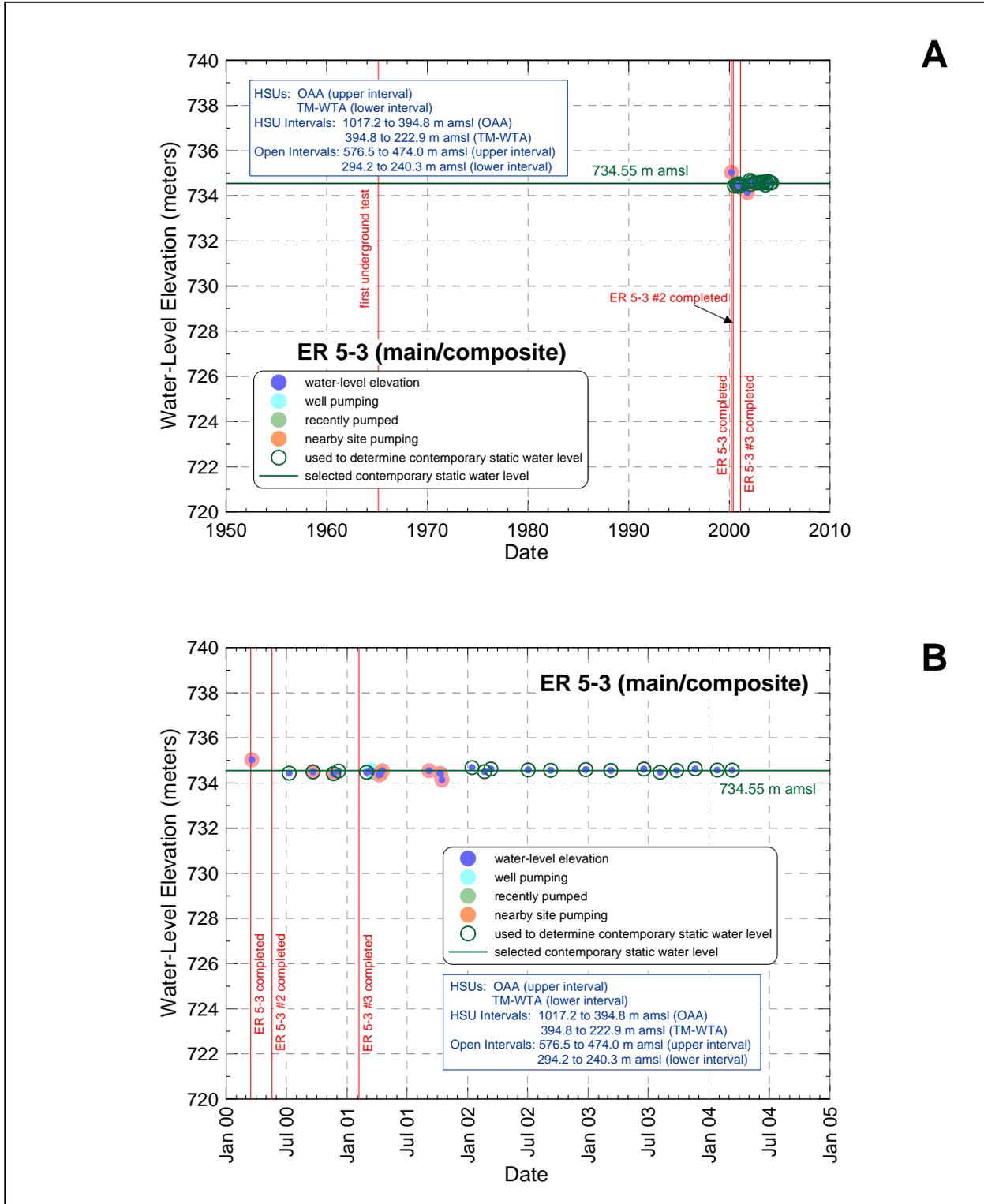
**Figure 8-3**  
Well Cluster ER-5-3 Water-Level History



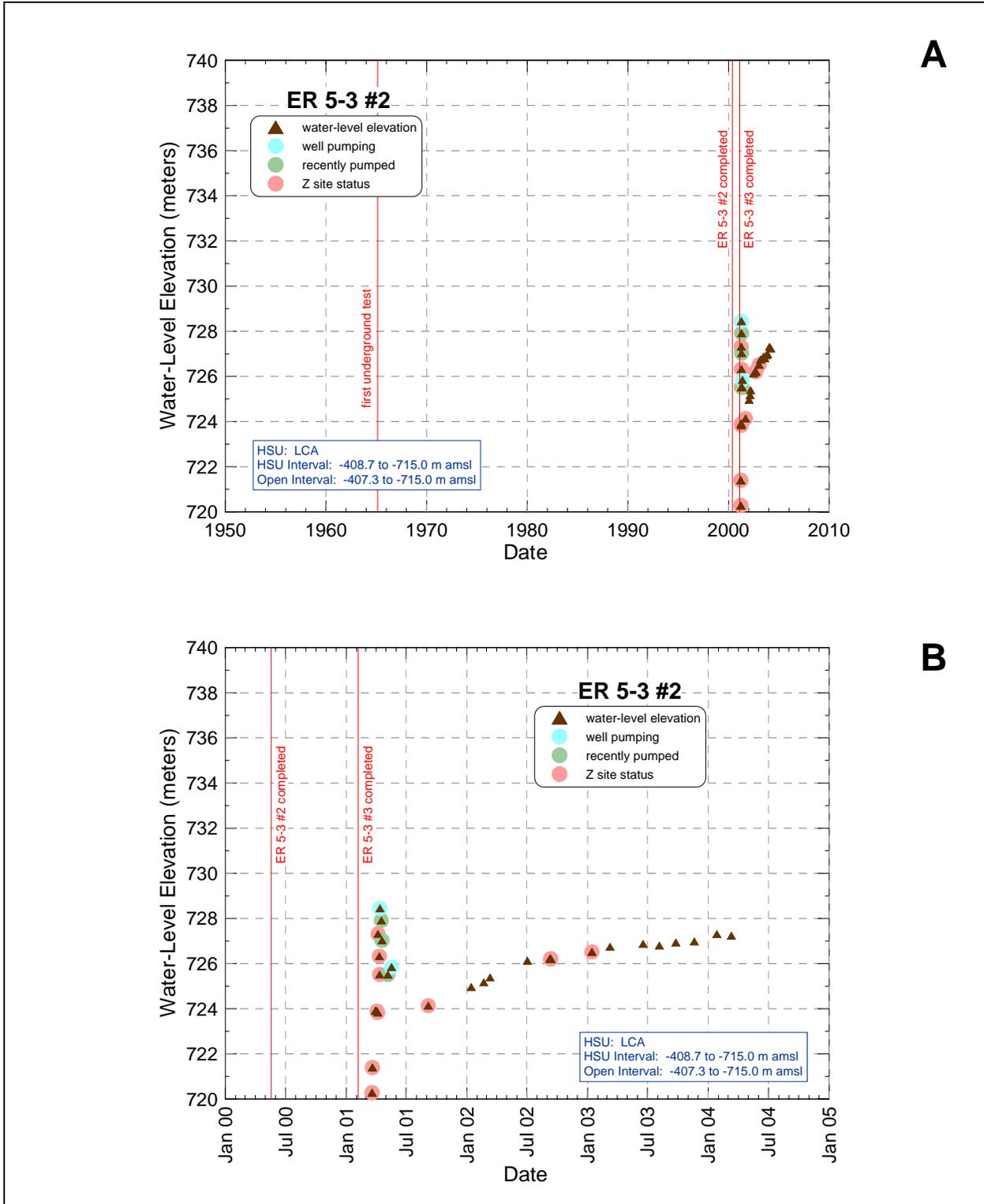
**Figure 8-4**  
**Well ER-5-3 (Shallow Piezometer) Water-Level History**



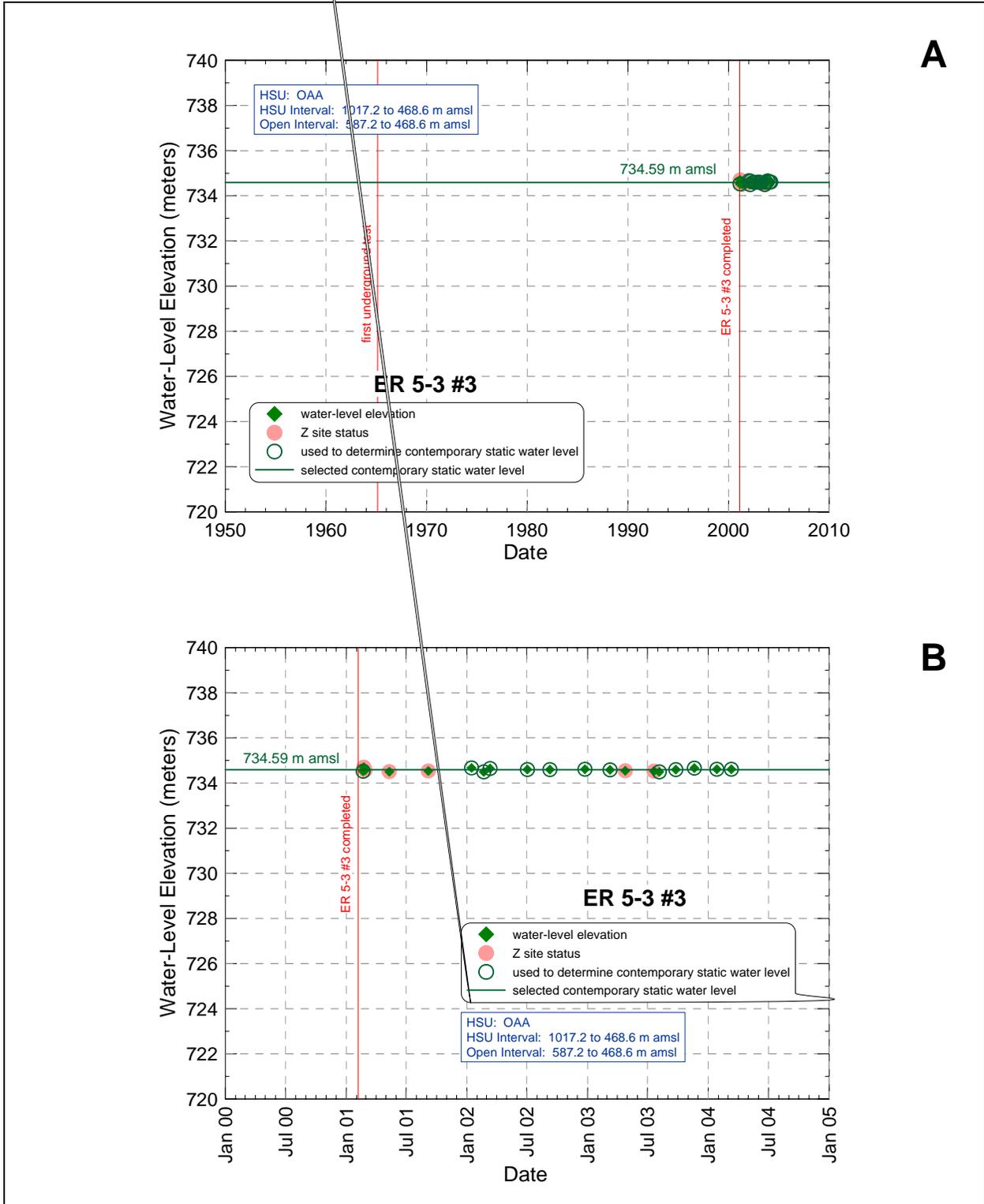
**Figure 8-5**  
**Well ER-5-3 (Deep Piezometer) Water-Level History**



**Figure 8-6**  
**Well ER-5-3 (Main/Composite) Water-Level History**

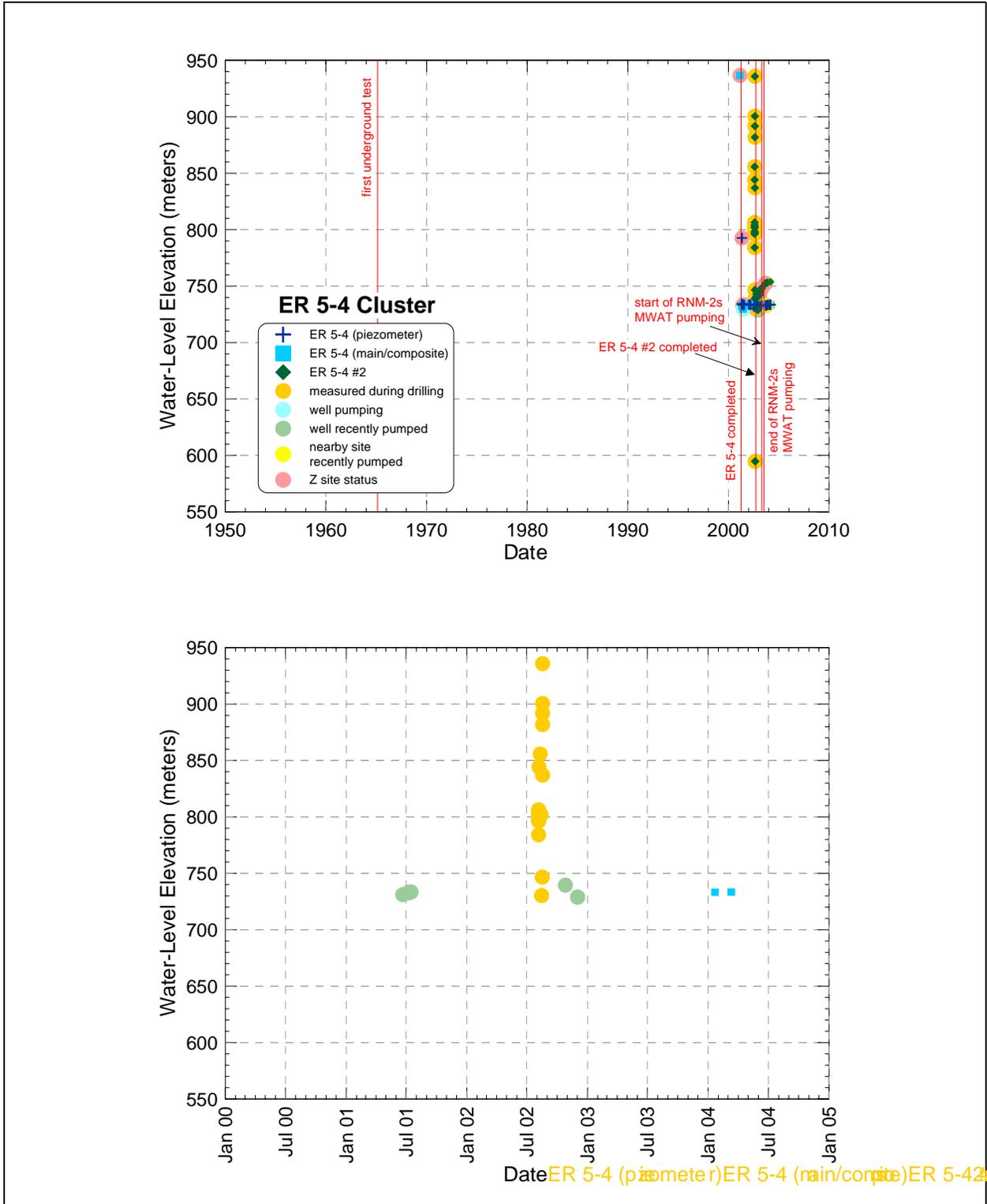


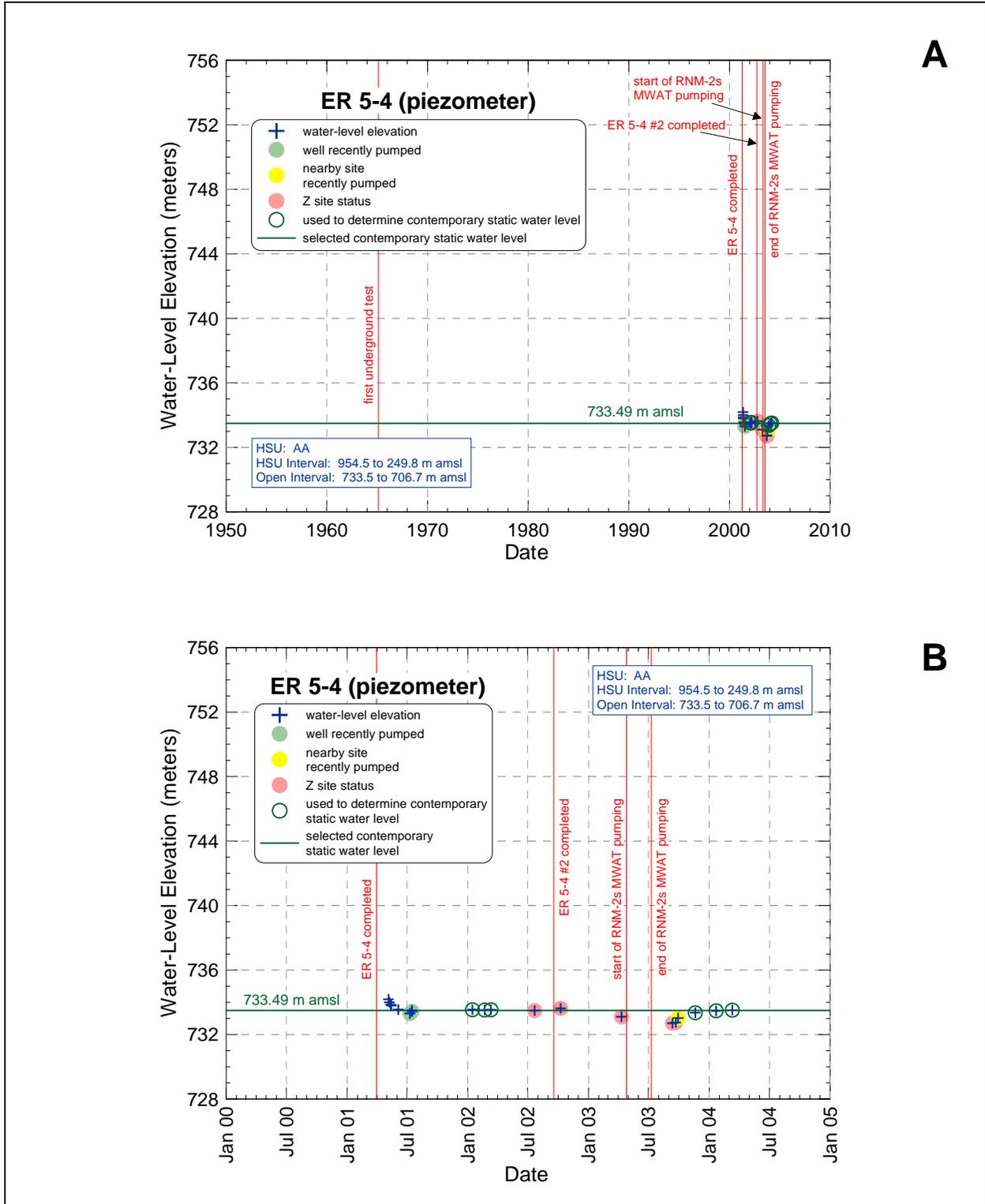
**Figure 8-7**  
**Well ER-5-3 #2 Water-Level History**



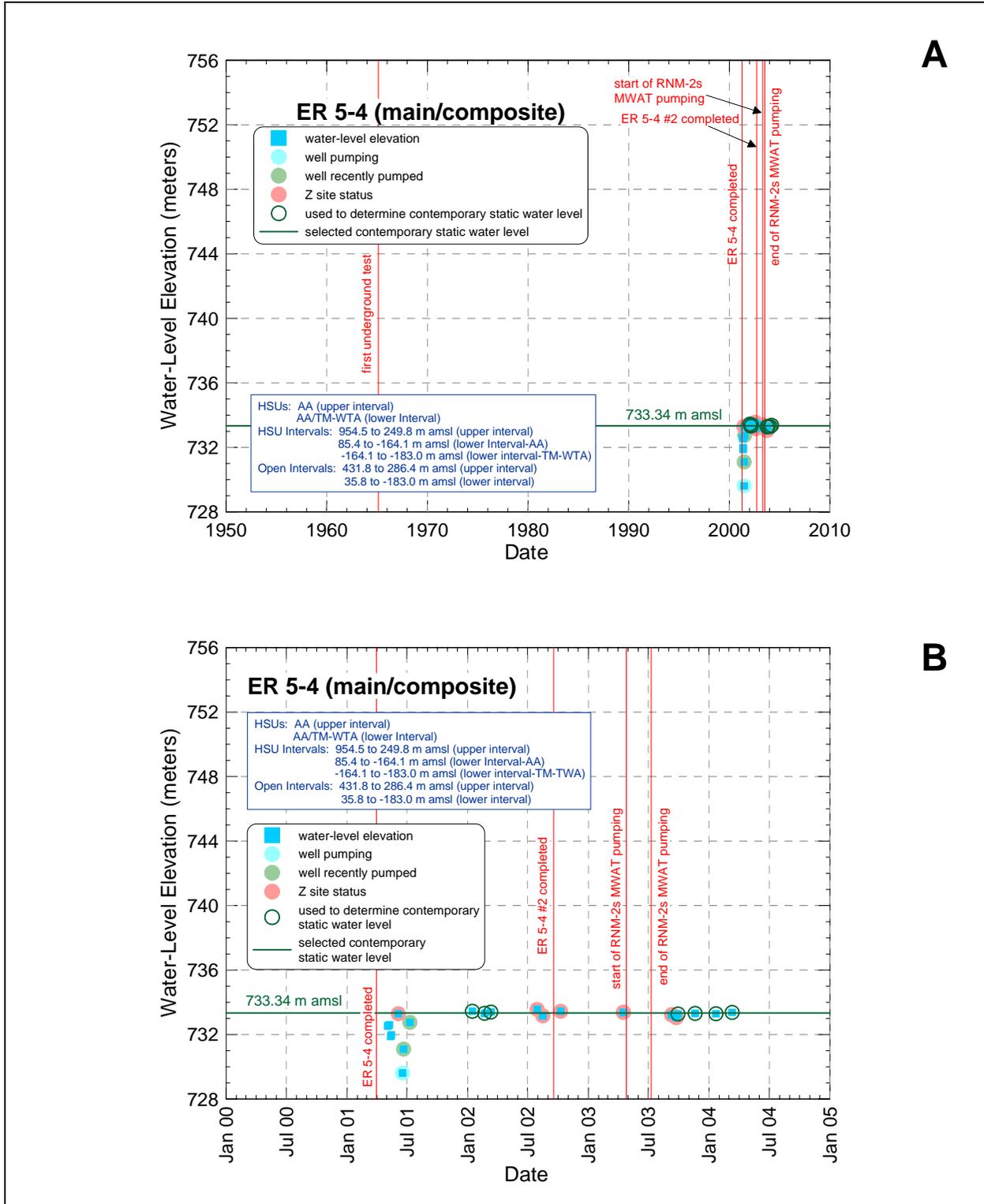
**Figure 8-8**  
Well ER 5-3 #3 Water-Level History

***ER-5-4 Well Cluster***

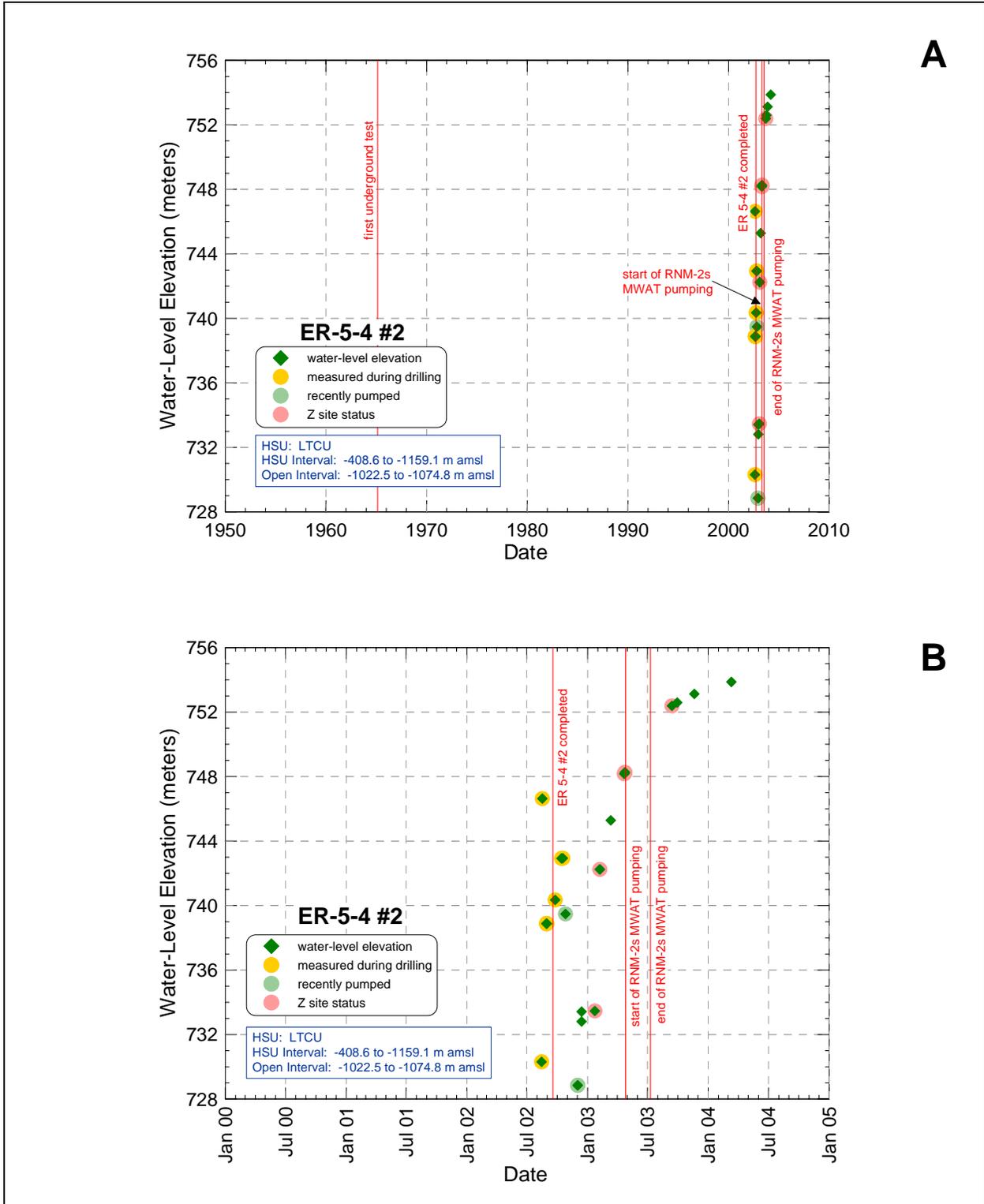




**Figure 8-10**  
**Well ER-5-4 (Piezometer) Water-Level History**



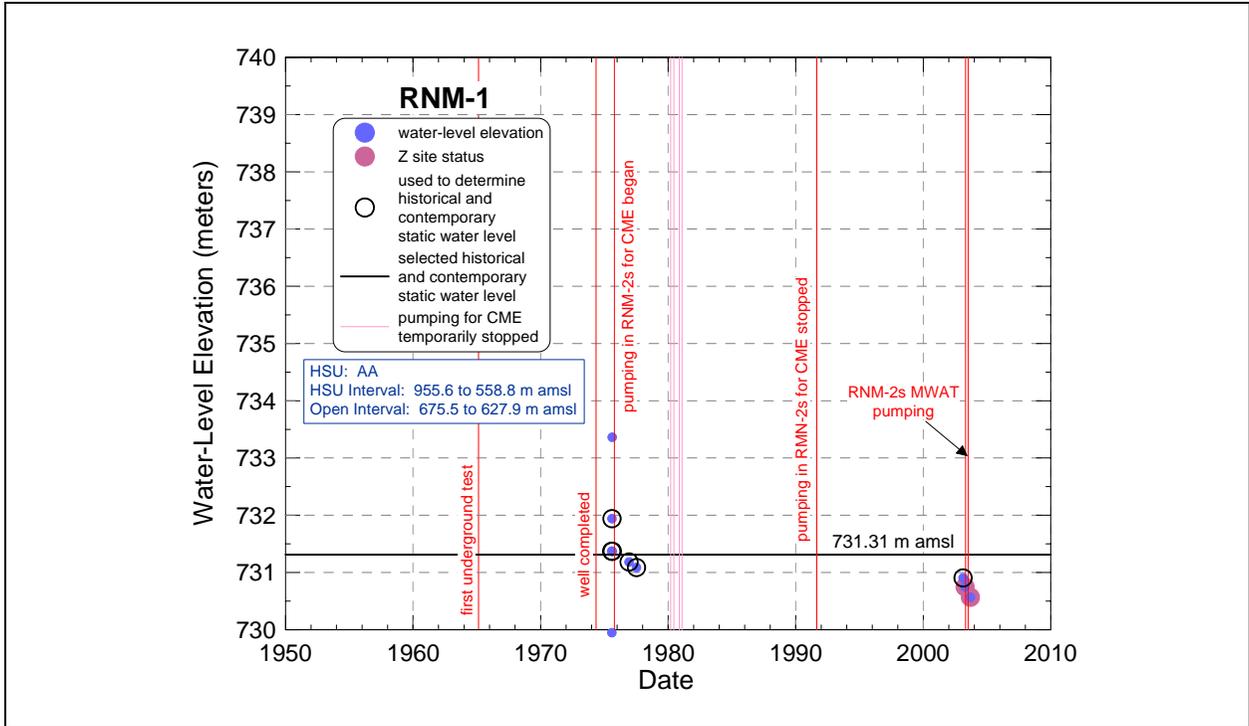
**Figure 8-11**  
**Well ER-5-4 (Main/Composite) Water-Level History**



**Figure 8-12**  
**Well ER-5-4 #2 Water-Level History**

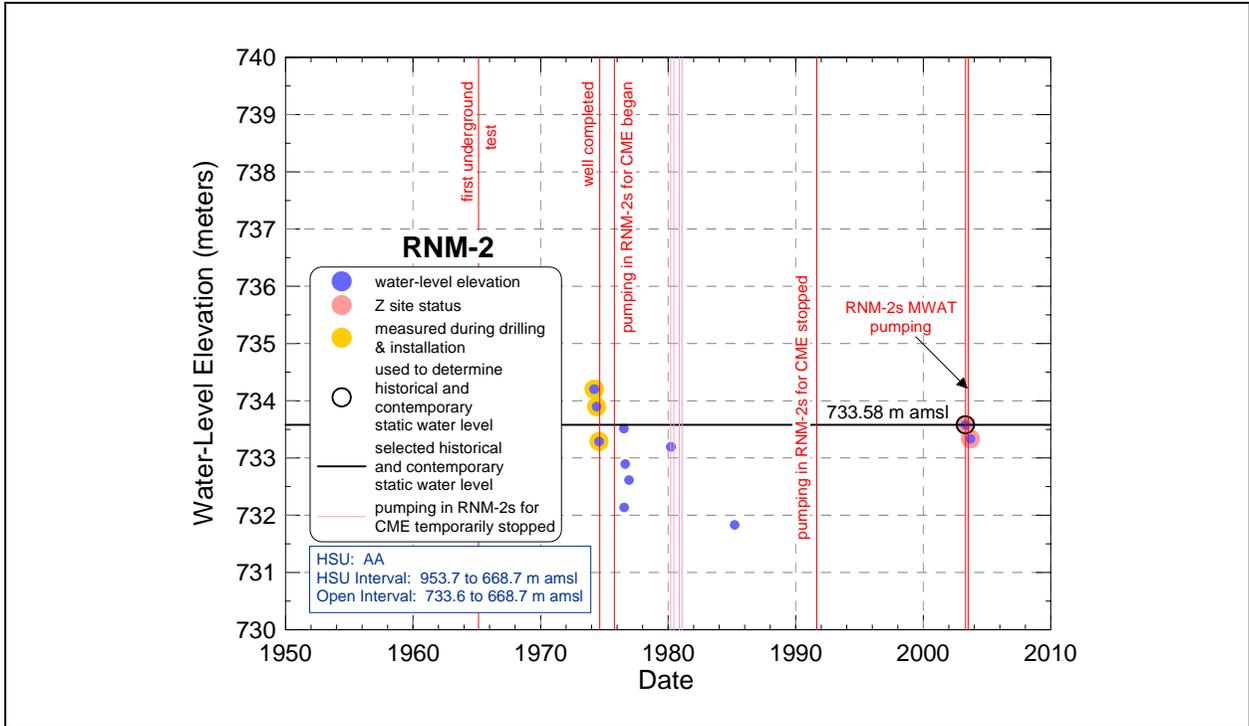
***RNM-1***

***RNM-2***



**Figure 8-13**  
**Well RNM-1 Water-Level History**

**RNM-2S**



**Figure 8-14**  
**Well RNM-2 Water-Level History**

SM-23-1

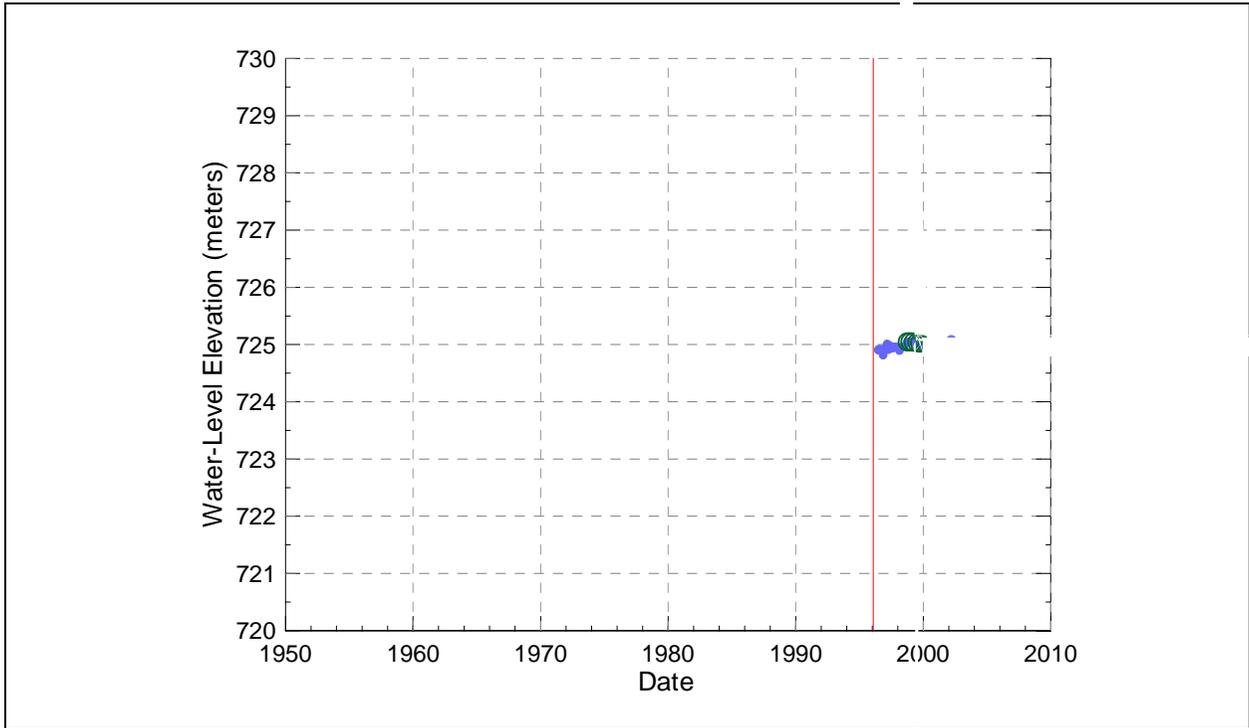
Opetake 736 (0138 mans)

1960 1970

w aētāhira ecent ly pum p

1970 1980 1990 2000  
Date

Figure 8-15  
Water-Level History

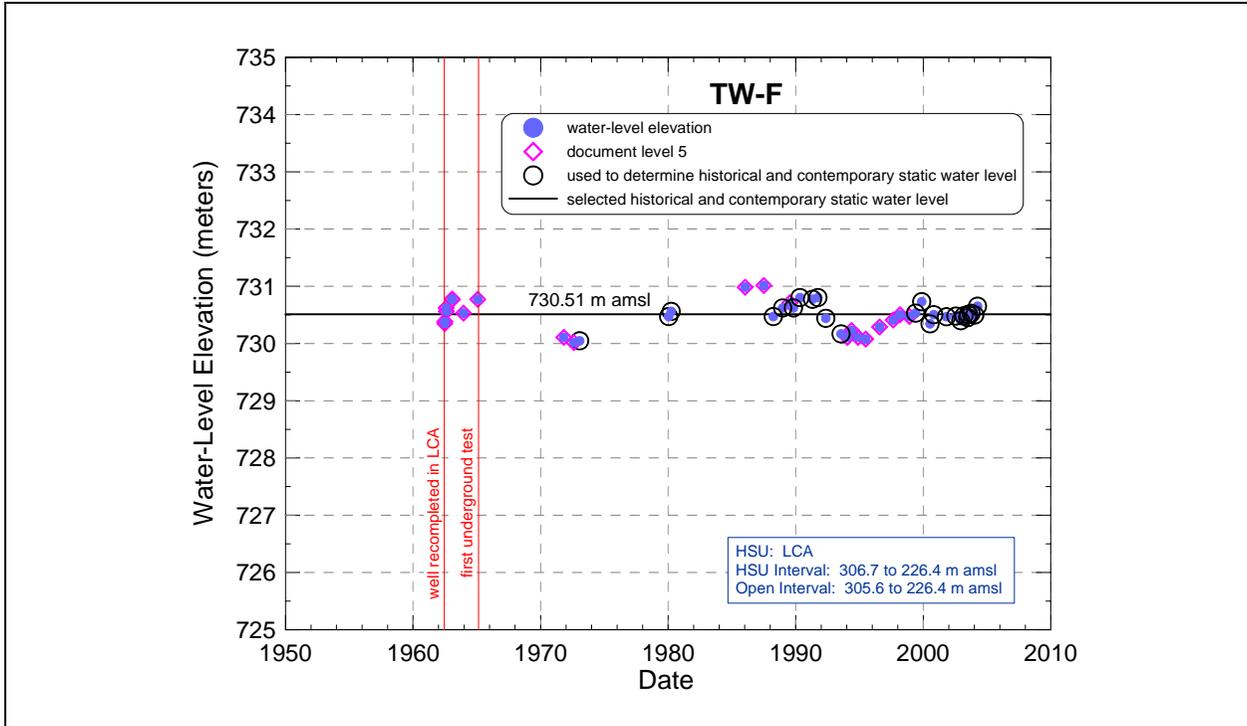


**Figure 8-16**  
**SM-23-1 Water-Level History**

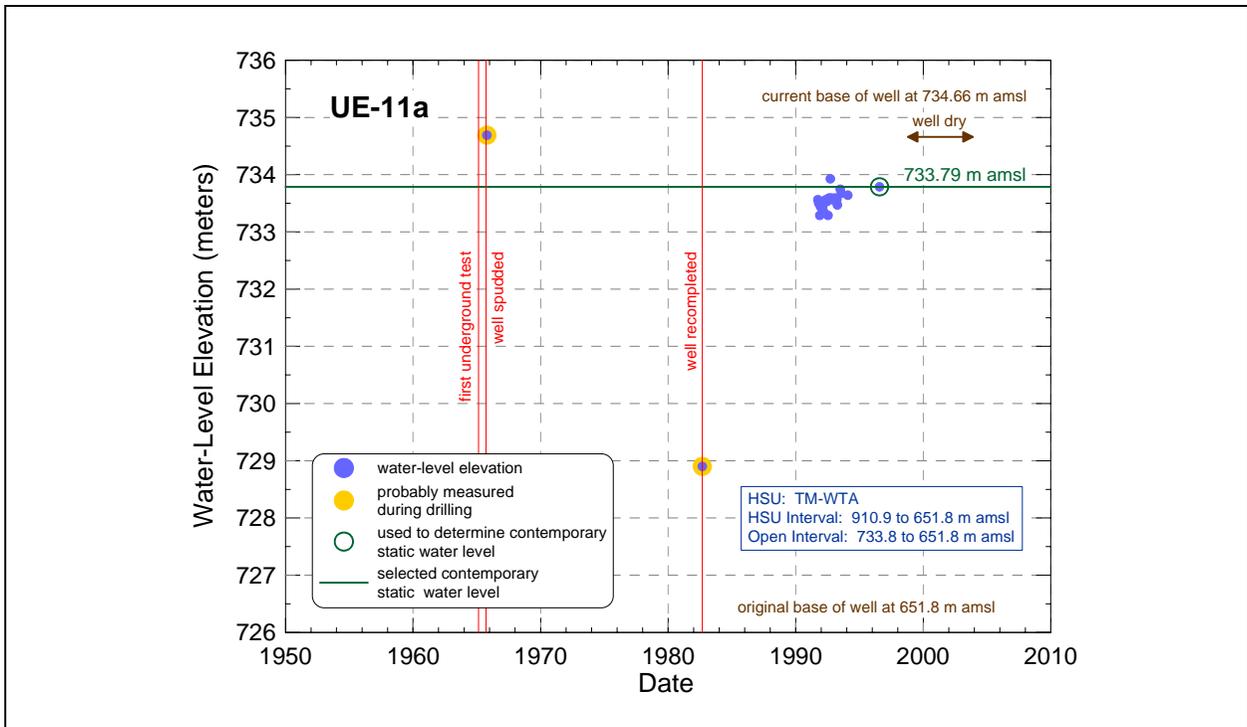
*TW-3*

*TW-F*



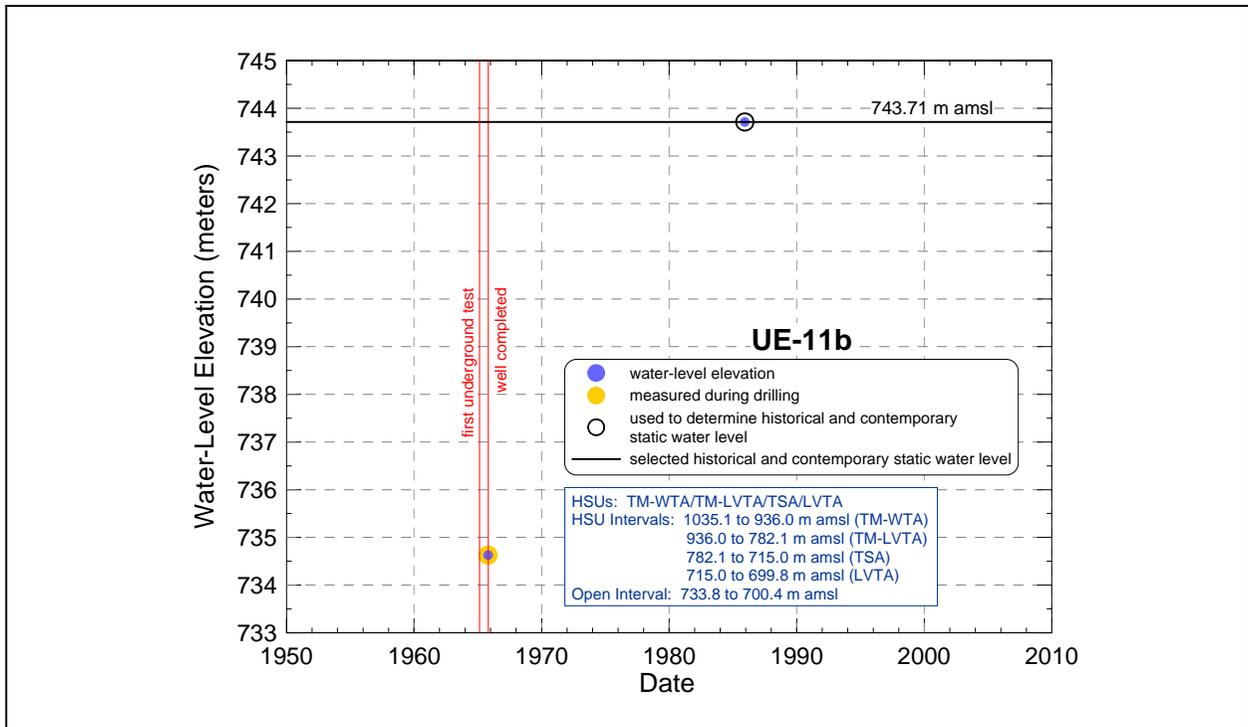


**Figure 8-18**  
**Well TW-F Water-Level History**



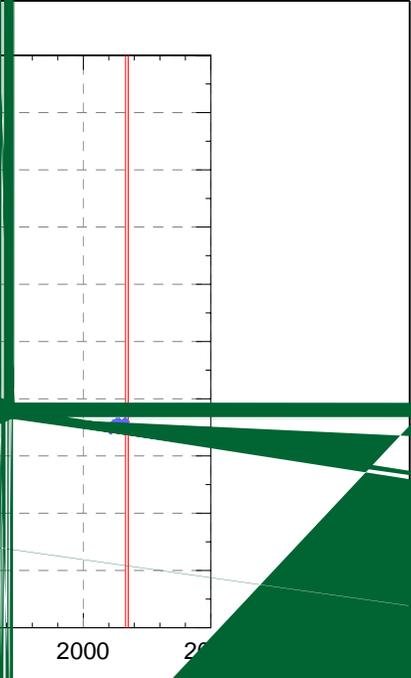
**Figure 8-19**  
**Well UE-11a Water-Level History**

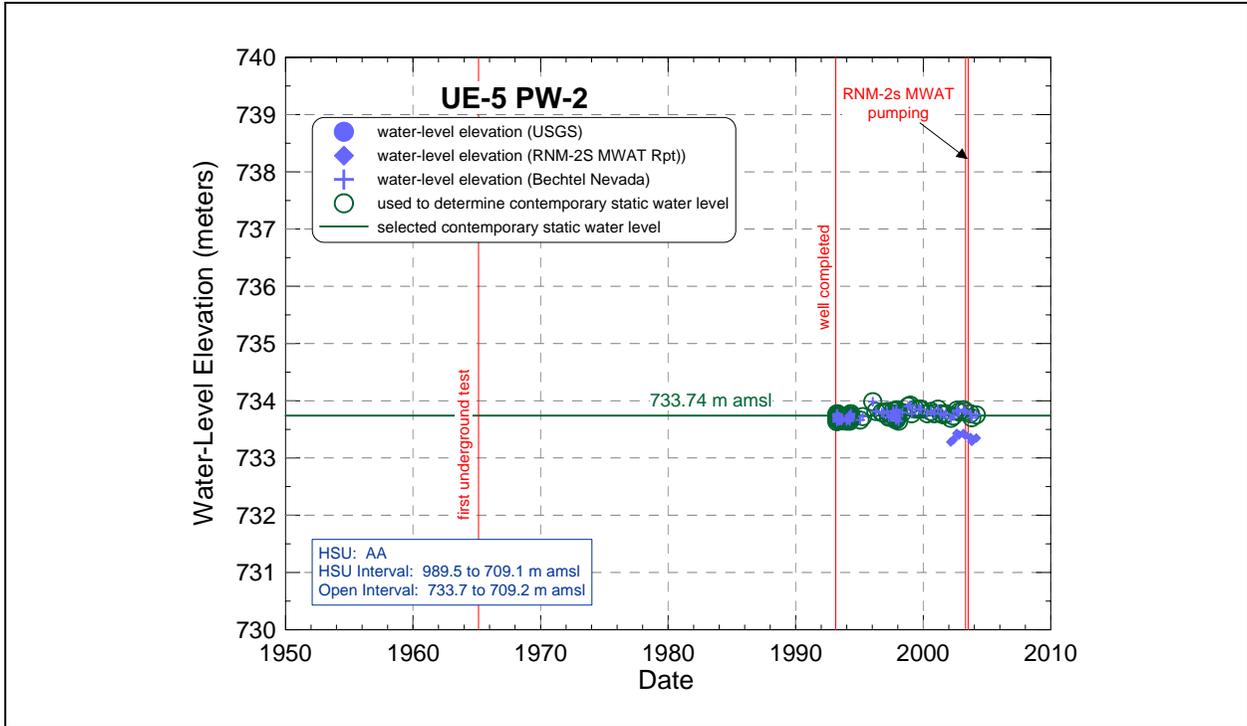
**UE-11b**



**Figure 8-20**  
**Well UE-11b Water-Level History**

**UE-5 PW-1**

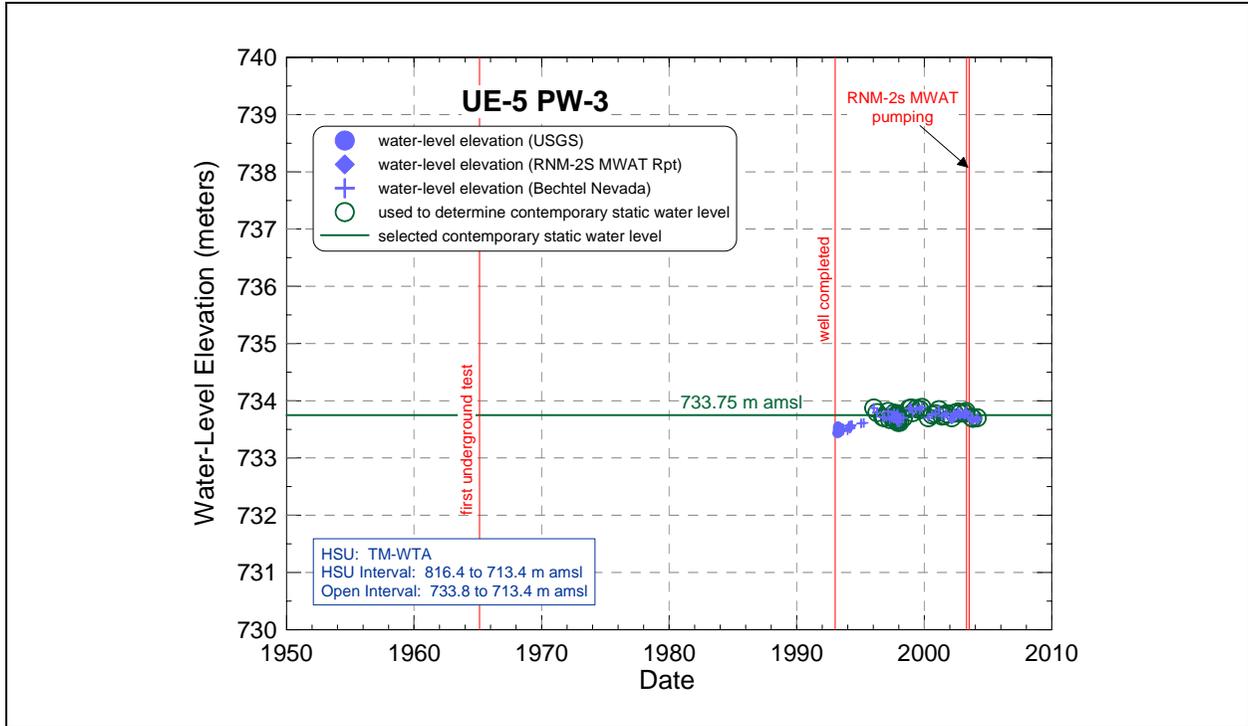




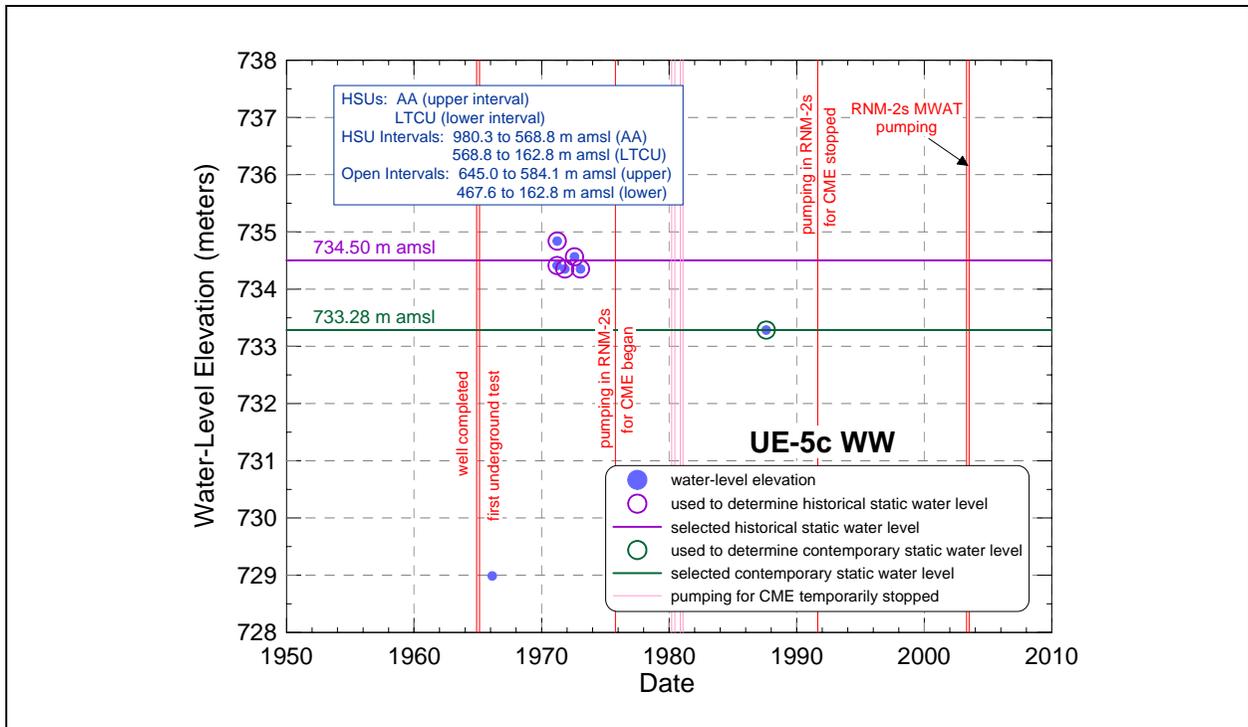
**Figure 8-22**  
**Well UE-5 PW-2 Water-Level History**

**UE-5 PW-3**

**UE-5c WW**



**Figure 8-23**  
Well UE-5 PW-3 Water-Level History



**Figure 8-24**  
Well UE-5c WW Water-Level History

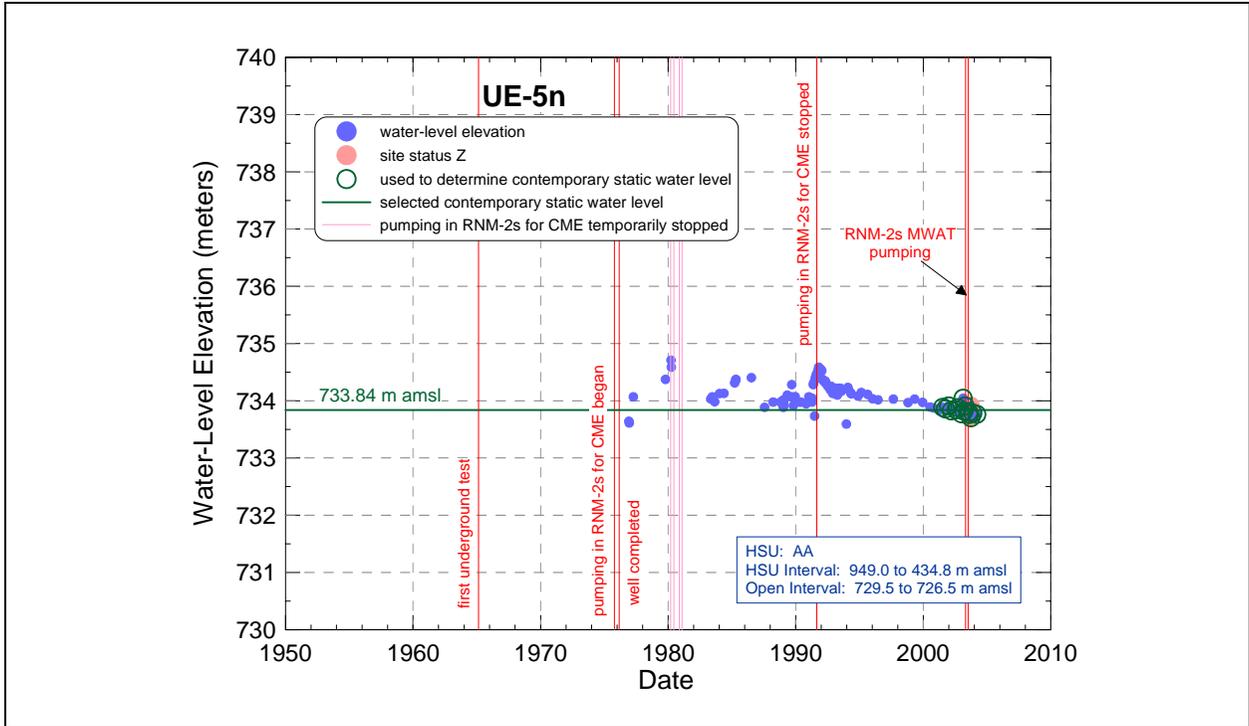
*UE-5f*

*UE-5j*

*UE-5k*

*UE-5m*

*UE-5n*

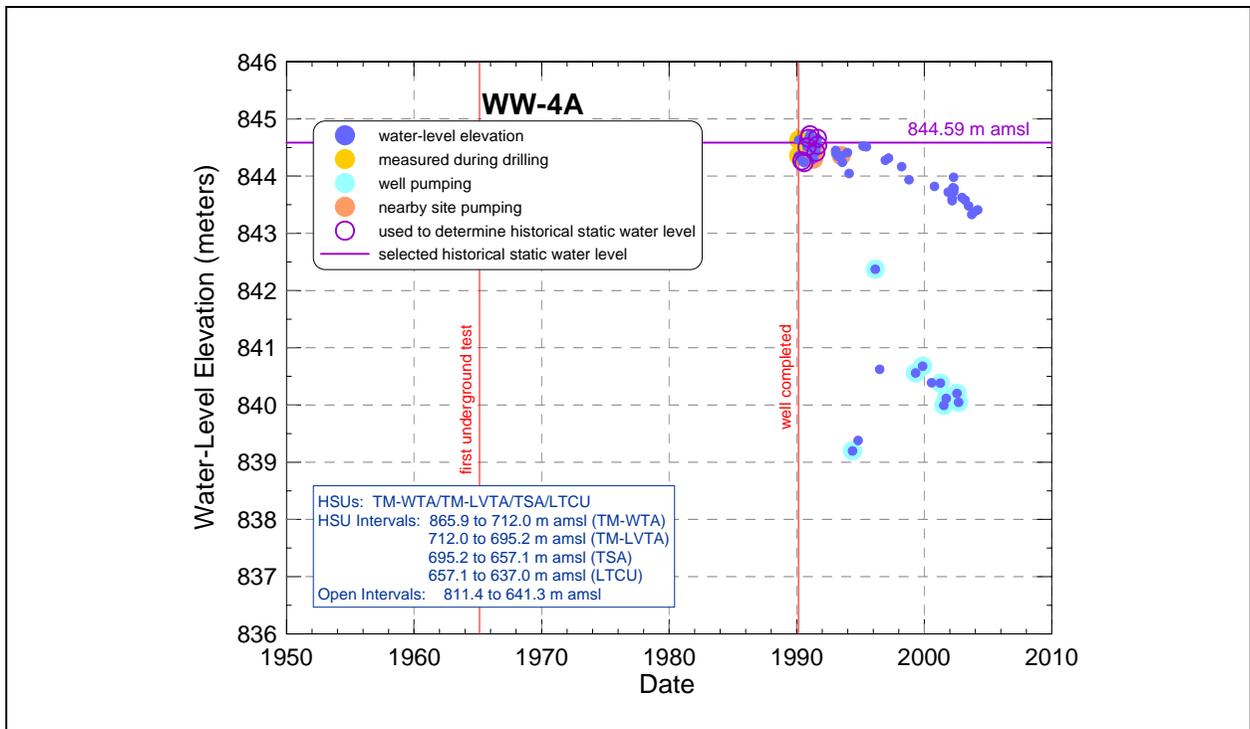


**Figure 8-25**  
**Well UE-5n Water-Level History**

**WW-1**

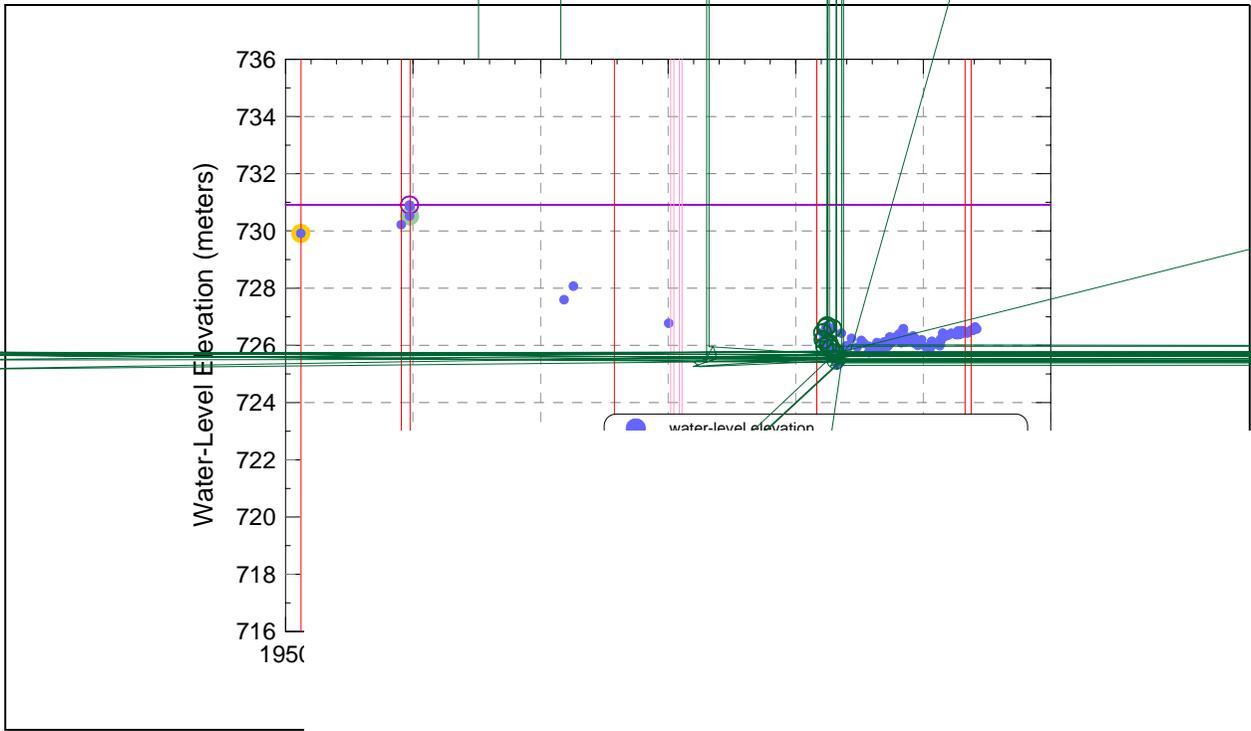
**WW-4**

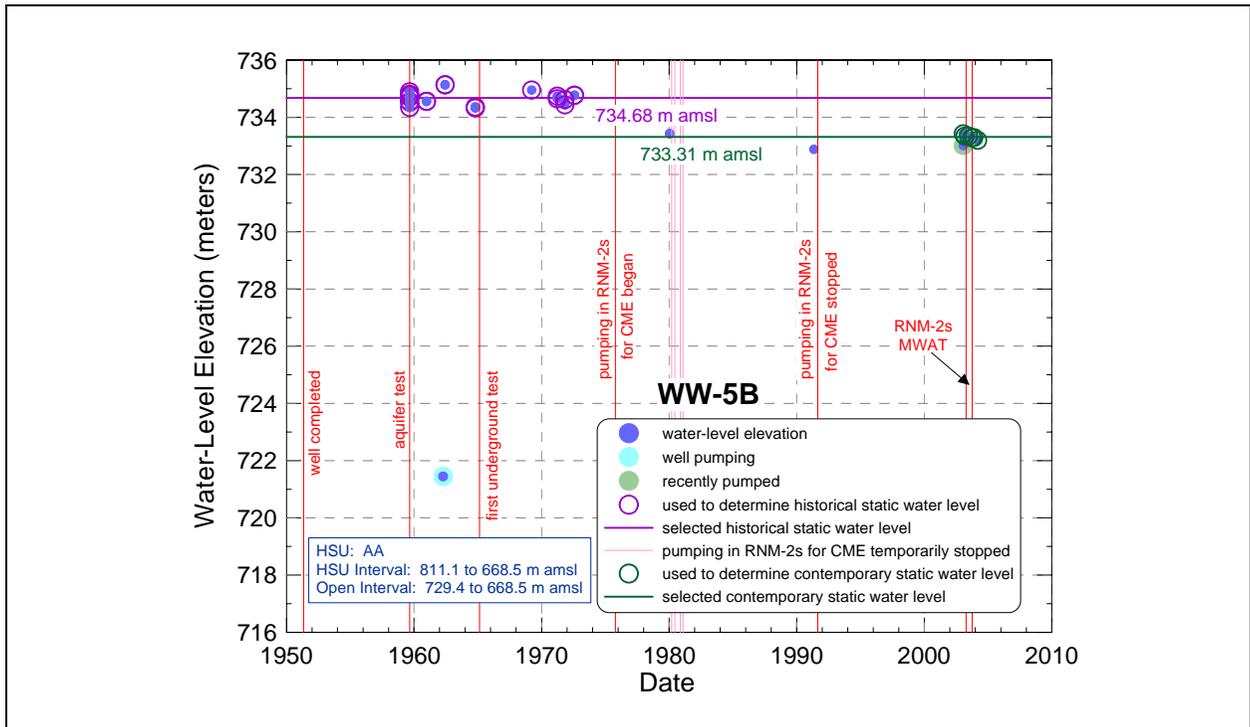




**Figure 8-27**  
**WW-4A Water-Level History**

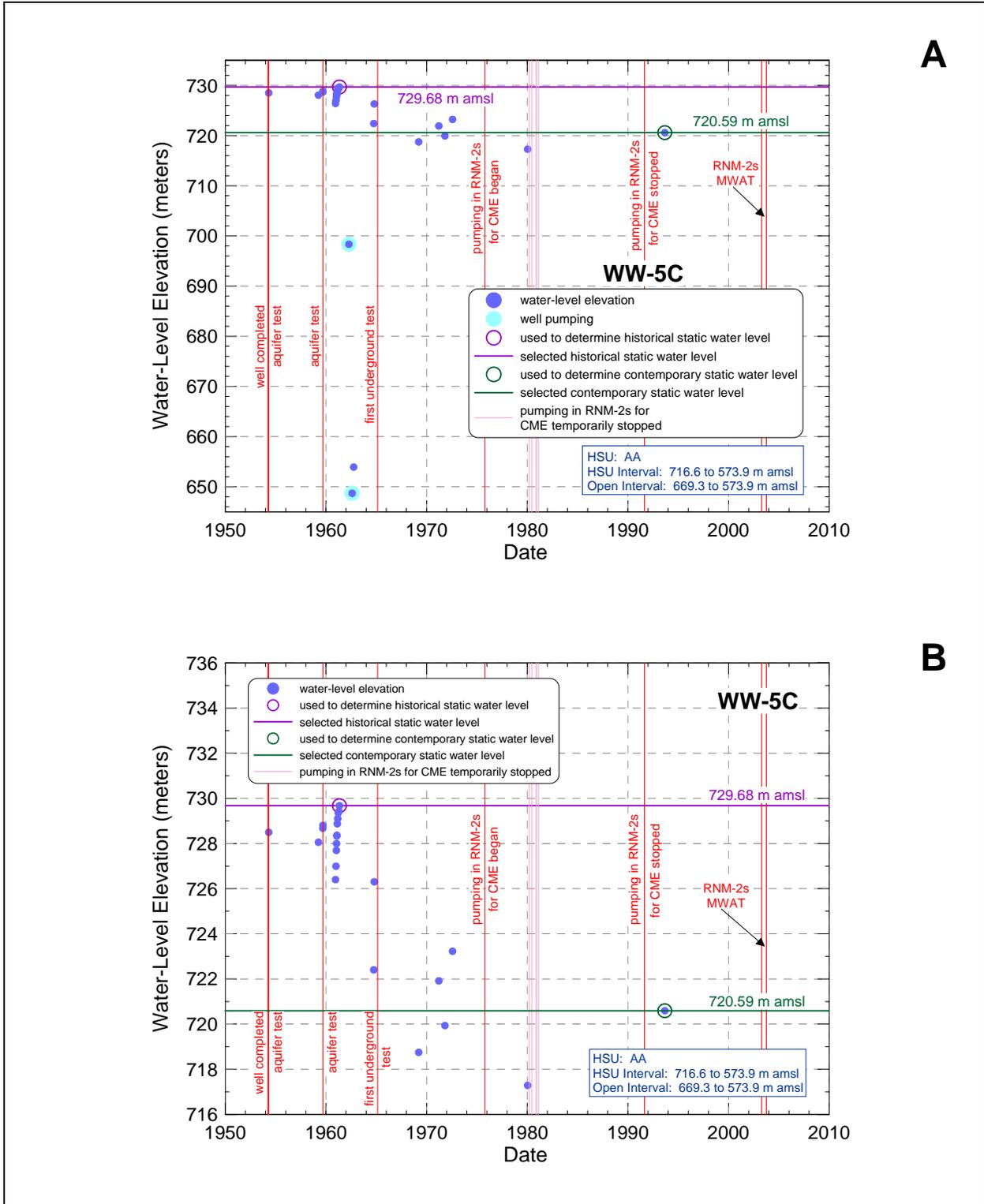
**WW-5A**



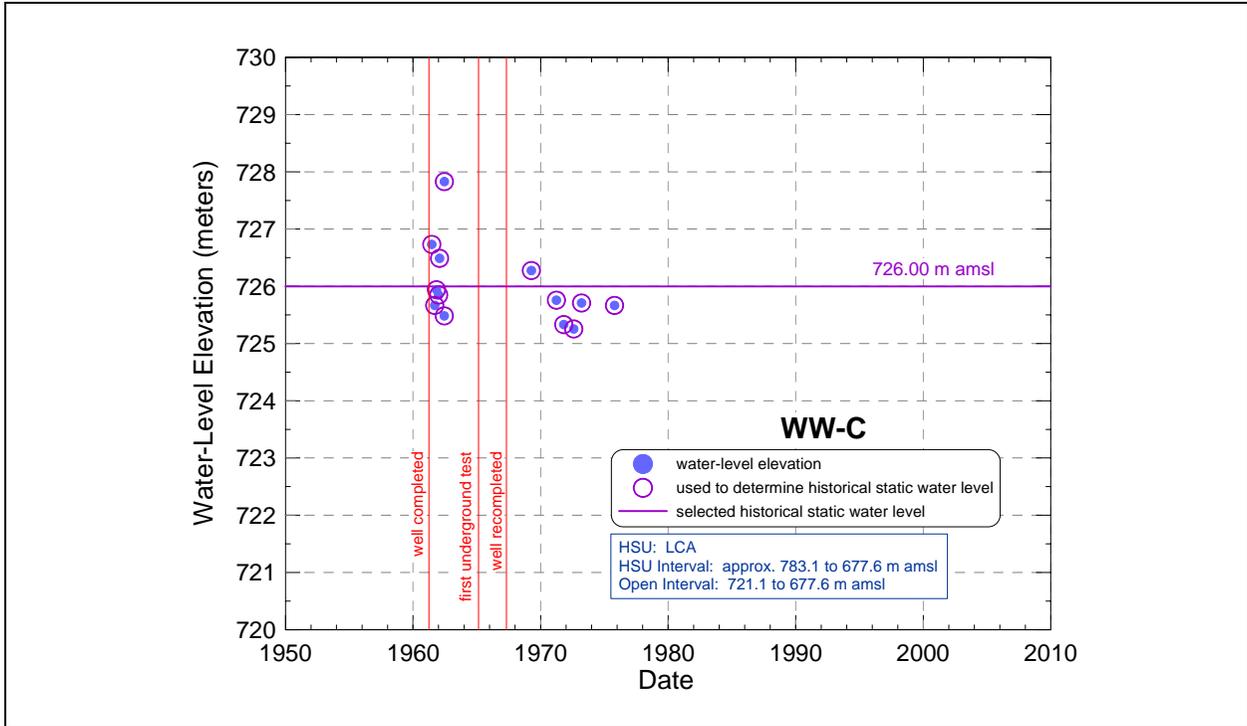


**WW-C**

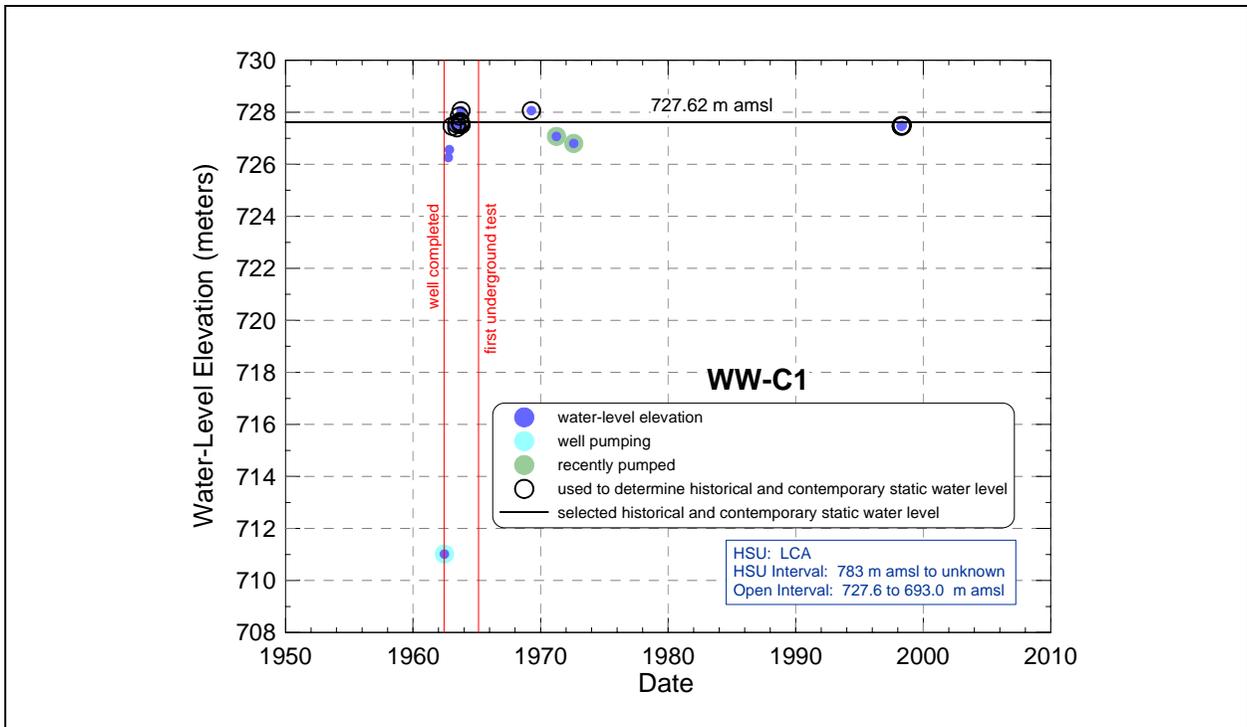
**WW-C1**



**Figure 8-30**  
**WW-5C Water-Level History**



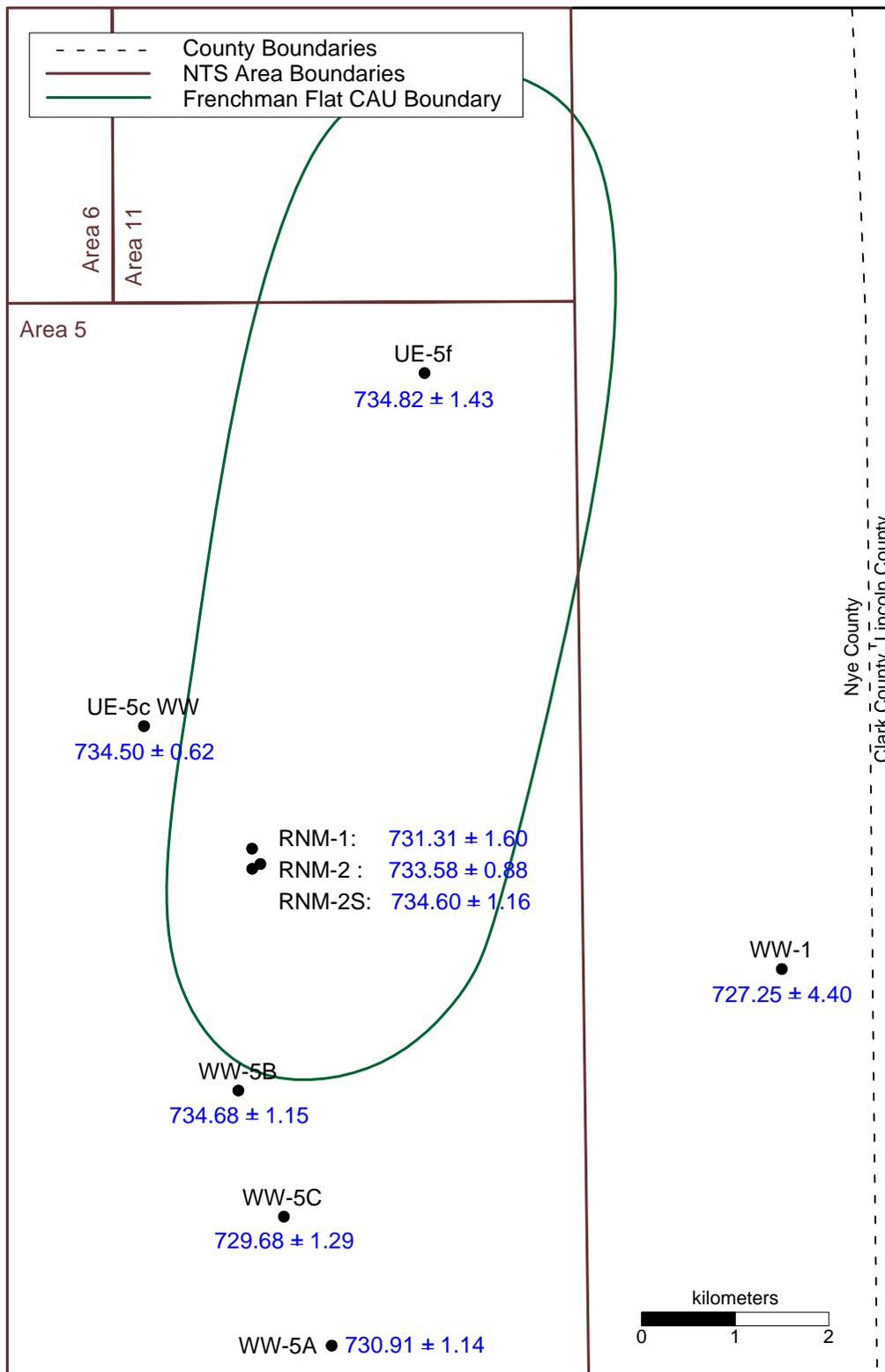
**Figure 8-31**  
**WW-C Water-Level History**



**Figure 8-32**  
**WW-C1 Water-Level History**

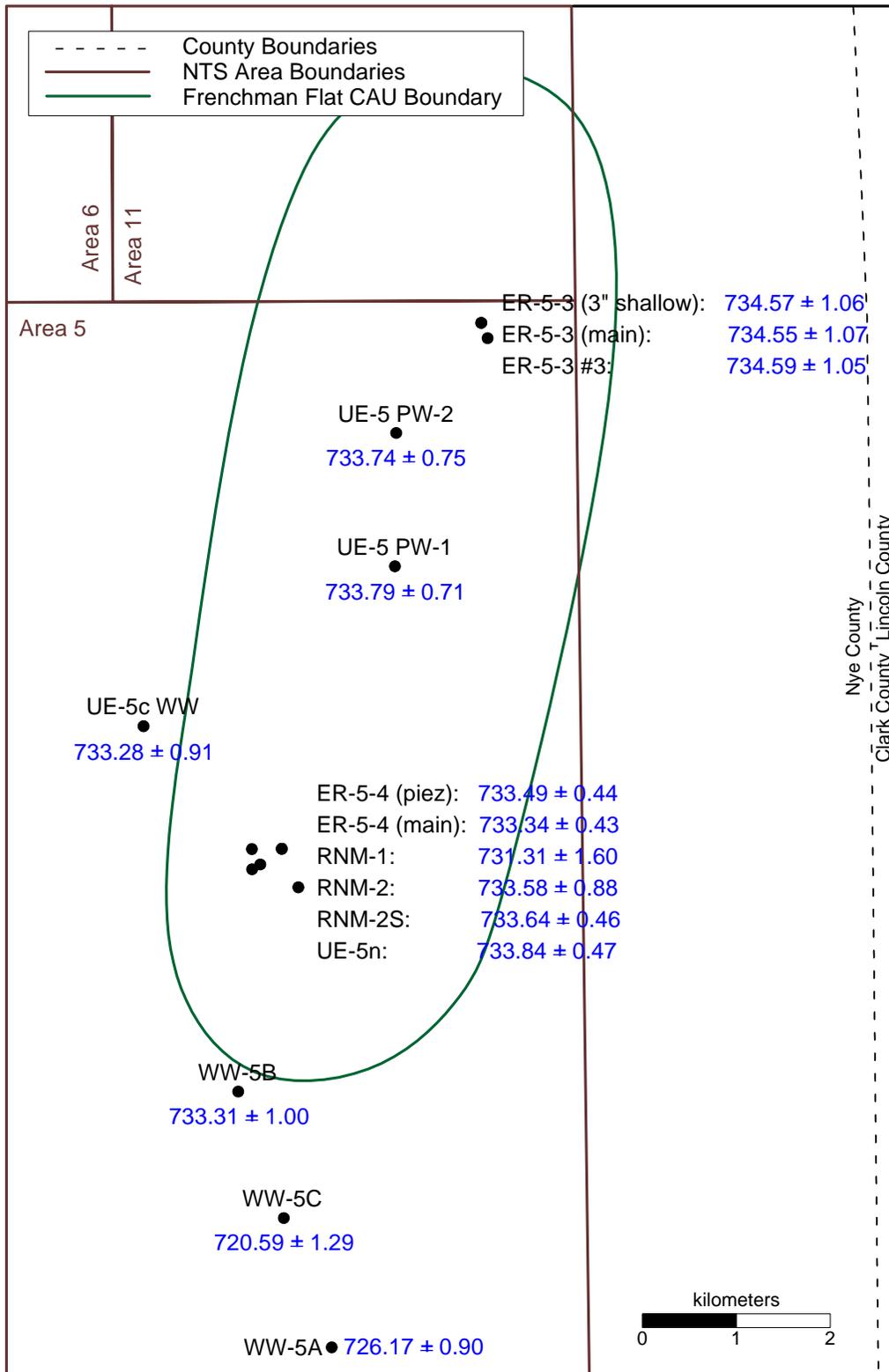
## **8.7 Flow System Behavior**

### **8.7.1 Horizontal Flow Analysis**

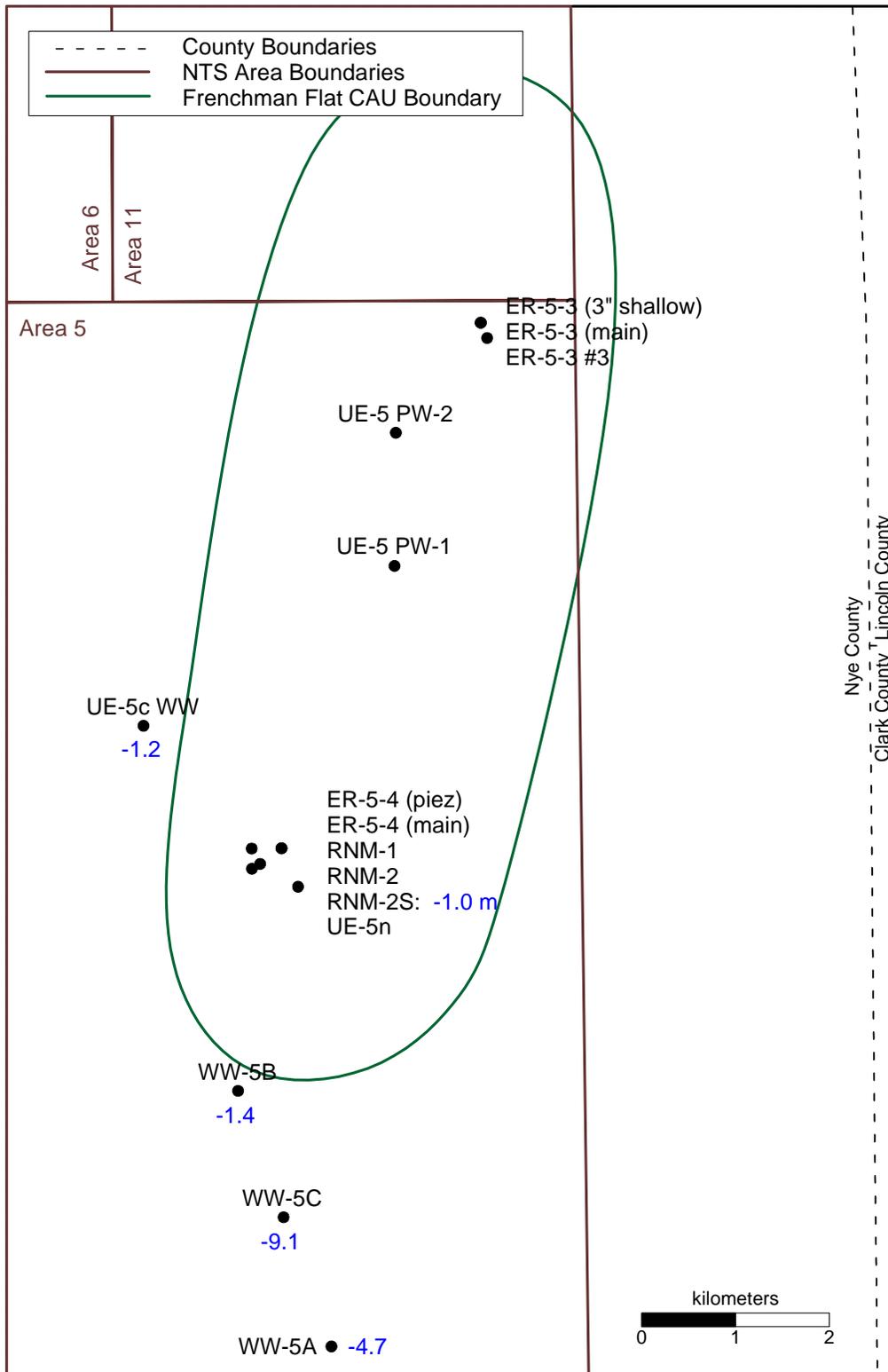


**Figure 8-33**  
**Post of Historical, Steady-State Heads in the AA**

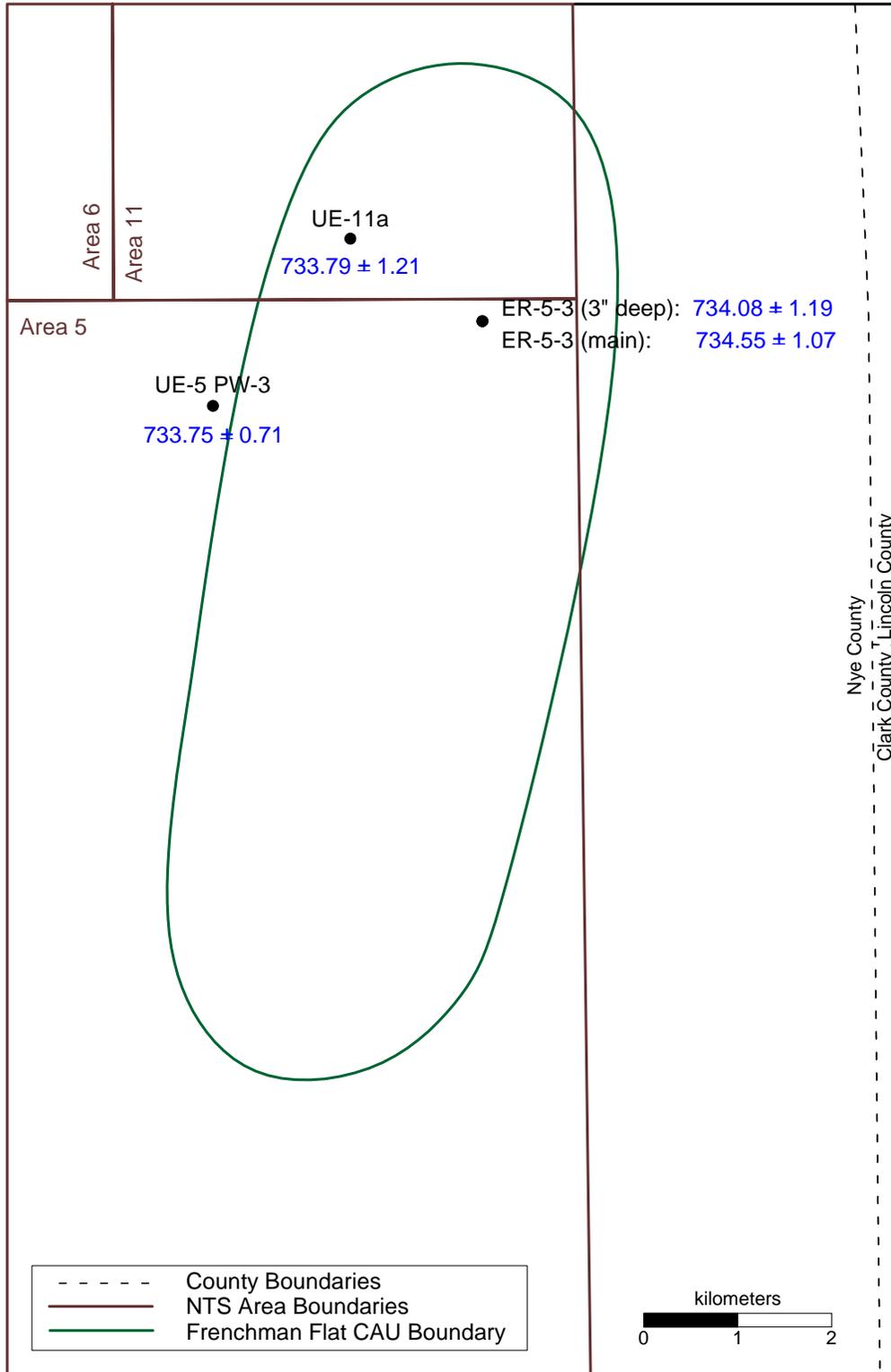




**Figure 8-34**  
**Post of Contemporary, Steady-State Heads in the AA**

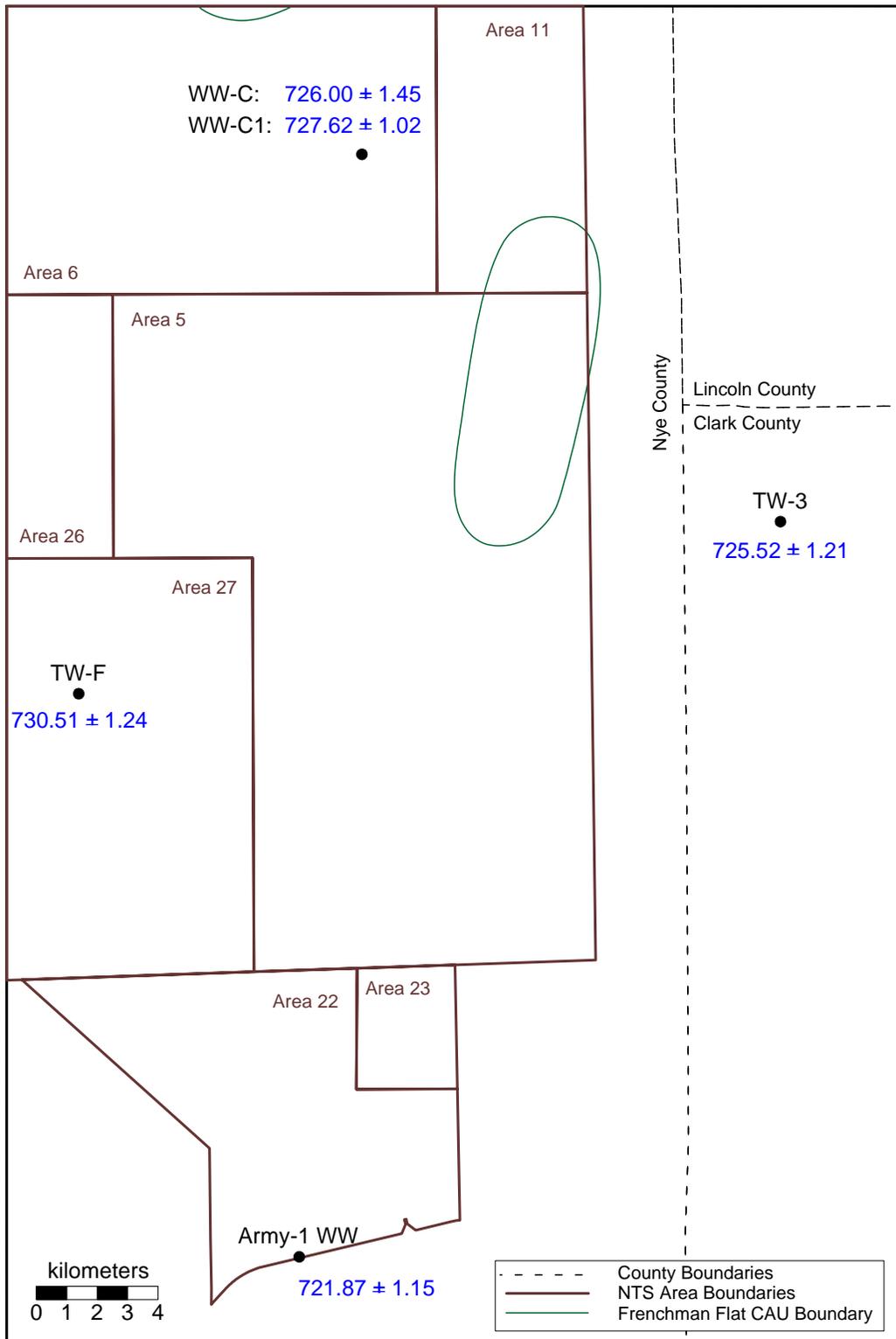


**Figure 8-35**  
**Post of Head Differences in the AA**

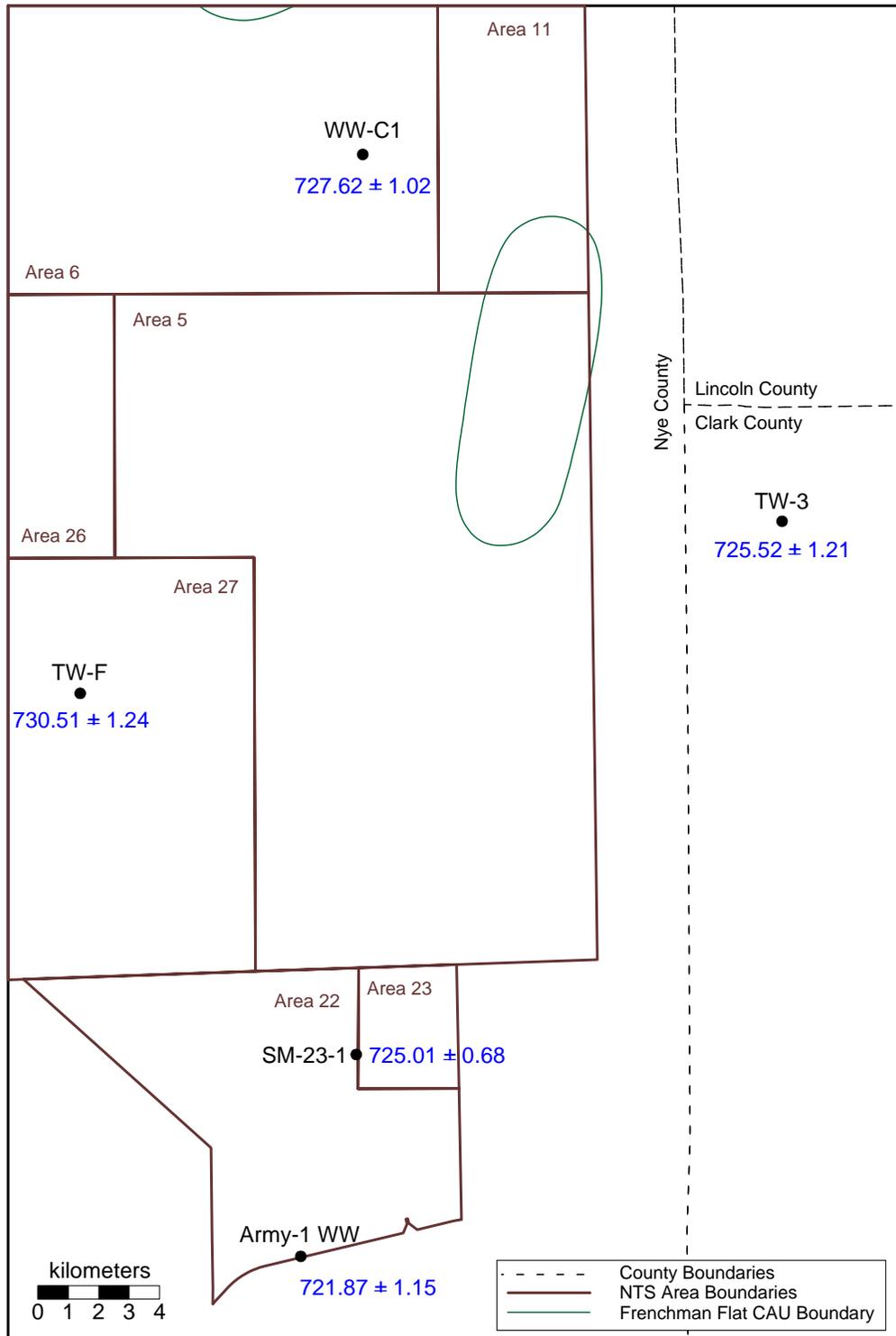


**Figure 8-36**  
**Post of Contemporary, Steady-State Heads in the TM-WTA**

### **8.7.2 *Transient Flow System Behavior***



**Figure 8-37**  
**Post of Historical, Steady-State Heads in the LCA**



**Figure 8-38**  
**Post of Contemporary, Steady-State Heads in the LCA**



### 8.7.3 Vertical Flow Analysis

#### 8.7.3.1 ER-5-3 Well Cluster

**Table 8-5**  
**Vertical Hydraulic Heads at the ER 5-3 Well Cluster**

Well/Piezometer	HSU	Steady-State Hydraulic Head (m)
ER-5-3 (shallow piezometer)	AA	734.57
ER-5-3 #3	AA	734.59
ER-5-3 (main)	AA	734.55
ER-5-3 (deep piezometer)	TM-WTA	734.08
ER-5-3 (main)	TM-WTA	734.55
ER-5-3 #2	LCA	<728

### 8.7.3.2 ER-5-4 Well Cluster

*in situ*

## 8.8 *Limitations*

## 8.9 Summary

## **9.0**    *Lateral Boundary Fluxes*

### **9.1**    *Objectives*

## 9.2 Approach

**Table 9-1**  
**Hydrostratigraphic Model Code Conventions**

<b>Hydrostratigraphic Model Code</b>	<b>Description</b>
G0	Base Case
G1	Alternative #1: Aquifer Juxtaposition
G2	Alternative #2: More Extensive Basalt Flow
G3	Alternative #3: No Detachment Fault
G4	Alternative #4: CP Basin

**Table 9-2**  
**Recharge Model Code Convention**

<b>Recharge Model Code</b>	<b>Recharge Model</b>	<b>Recharge Rate (m<sup>3</sup>/d)</b>
R1	UGTA Original	220,000
R2	UGTA Revised	212,000
R3	DRI	275,000
R4	DRI – no recharge below 1,237 m	268,000
R5	USGS – redistribution	173,000
R6	USGS – no redistribution	143,000

### **9.3 Analysis Results**

### **9.3.1 Lateral Fluxes Derived from Regional Model Flow Simulations**

**Table 9-3**  
**Regional Model Inflows (m<sup>3</sup>/d) at Geologic Model Boundaries**

<b>Model Number</b>	<b>Northern Boundary</b>	<b>Southern Boundary</b>	<b>Eastern Boundary</b>	<b>Western Boundary</b>
G0R1	42000	9700	84000	770
G0R2	46000	8800	81000	770
G0R3	48000	11000	83000	650
G0R4	46000	11000	83000	650
G0R5	32000	9200	65000	1100
G0R6	20000	11000	60000	1300
G1R1	42000	9700	85000	720
G1R2	46000	8800	81000	690
G1R3	48000	11000	83000	550
G1R4	52000	11000	83000	760
G1R5	32000	9200	65000	1000
G1R6	20000	11000	60000	970
G2R1	42000	9700	84000	720
G2R2	46000	8800	81000	690
G2R3	46000	11000	84000	610
G2R4	43000	11000	82000	550
G2R5	32000	9200	65000	1000
G2R6	20000	11000	60000	980
G3R1	42000	9700	84000	720
G3R2	46000	8800	81000	690
G3R3	49000	11000	83000	560
G3R4	47000	11000	83000	550
G3R5	32000	9200	65000	1000
G3R6	19000	11000	60000	1000
G4R1	42000	9700	84000	720
G4R2	46000	8800	81000	690
G4R3	48000	11000	83000	580
G4R4	50000	11000	82000	630
G4R5	32000	9200	65000	1000
G4R6	19000	11000	60000	1100

**Table 9-4**  
**Regional Model Outflows (m<sup>3</sup>/d) at Geologic Model Boundaries**

<b>Model Number</b>	<b>Northern Boundary</b>	<b>Southern Boundary</b>	<b>Eastern Boundary</b>	<b>Western Boundary</b>
G0R1	610	9200	0.0071	130000
G0R2	450	6800	0.02	130000
G0R3	190	17000	0.0058	130000
G0R4	220	18000	0.0051	120000
G0R5	290	19000	0.0033	89000
G0R6	330	33000	0.00041	59000
G1R1	610	9200	0.0071	130000
G1R2	450	6800	0.02	130000
G1R3	160	17000	0.0056	130000
G1R4	20	18000	0.005	120000
G1R5	290	19000	0.0033	89000
G1R6	330	33000	0.00041	59000
G2R1	610	9200	0.0071	130000
G2R2	450	6800	0.02	130000
G2R3	280	17000	0.0061	130000
G2R4	230	18000	0.0045	130000
G2R5	300	19000	0.0033	89000
G2R6	350	33000	0.00042	59000
G3R1	610	9200	0.0071	130000
G3R2	450	6800	0.02	130000
G3R3	150	17000	0.0056	130000
G3R4	200	18000	0.0051	120000
G3R5	300	19000	0.0033	89000
G3R6	380	33000	0.00044	59000
G4R1	610	9200	0.0071	130000
G4R2	450	6800	0.02	130000
G4R3	190	17000	0.0058	130000
G4R4	65	18000	0.0045	130000
G4R5	300	19000	0.0033	89000
G4R6	360	33000	0.00043	59000

**Table 9-5**  
**Total Water Balance (m<sup>3</sup>/d) for the Geologic Model Boundaries**

<b>Model Number</b>	<b>Perimeter Influx</b>	<b>Perimeter Outflux</b>	<b>Recharge</b>	<b>Percent Difference</b>
G0R1	140000	140000	2100	-0.01%
G0R2	140000	140000	760	0.00%
G0R3	140000	140000	1600	-0.04%
G0R4	140000	140000	850	0.00%
G0R5	110000	110000	680	-0.01%
G0R6	92000	92000	610	0.20%
G1R1	140000	140000	2100	-0.01%
G1R2	140000	140000	760	-0.01%
G1R3	140000	140000	1600	-0.61%
G1R4	150000	140000	850	4.50%
G1R5	110000	110000	680	-0.01%
G1R6	92000	92000	610	-0.01%
G2R1	140000	140000	2100	-0.01%
G2R2	140000	140000	760	-0.01%
G2R3	140000	140000	1600	-0.76%
G2R4	140000	140000	850	-5.00%
G2R5	110000	110000	680	0.00%
G2R6	91000	92000	610	-0.07%
G3R1	140000	140000	2100	-0.01%
G3R2	140000	140000	760	-0.01%
G3R3	140000	150000	1600	-0.03%
G3R4	140000	140000	850	-0.01%
G3R5	110000	110000	680	0.00%
G3R6	91000	92000	610	0.01%
G4R1	140000	140000	2100	-0.01%
G4R2	140000	140000	760	-0.01%
G4R3	140000	140000	1600	0.15%
G4R4	140000	150000	850	-0.87%
G4R5	110000	110000	680	-0.01%
G4R6	91000	92000	610	-0.18%

### 9.3.2 Results Comparison

#### Effect of Changing the HSU Model

**Table 9-6**  
Regional Model Inflows (m<sup>3</sup>/d) for UGTA Original Recharge Model

Geologic Model	Northern Boundary	Southern Boundary	Eastern Boundary	Western Boundary
Base Model	42000	9700	84000	770
Aquifer Juxtaposition	42000	9700	85000	720
More Extensive BF	42000	9700	84000	720
No Detachment Fault	42000	9700	84000	720
CP Basin	42000	9700	84000	720

**Table 9-7**  
Regional Model Outflows (m<sup>3</sup>/d) for  
UGTA Original Recharge Model

Geologic Model	Northern Boundary	Southern Boundary	Eastern Boundary	Western Boundary
Base Model	610	9200	0.0071	130000
Aquifer Juxtaposition	610	9200	0.0071	130000
More Extensive BF	610	9200	0.0071	130000
No Detachment Fault	610	9200	0.0071	130000
CP Basin	610	9200	0.0071	130000

**Table 9-8**  
**Total Water Balance (m<sup>3</sup>/d) for Various HSU Models with UGTA Original Recharge Model**

<b>Geologic Model</b>	<b>Perimeter Inflow</b>	<b>Perimeter Outflow</b>	<b>Recharge</b>	<b>Percent Difference</b>
Base Model	140000	140000	2100	-0.01%
Aquifer Juxtaposition	140000	140000	2100	-0.01%
More Extensive BF	140000	140000	2100	-0.01%
No Detachment Fault	140000	140000	2100	-0.01%
CP Basin	140000	140000	2100	-0.01%

**Table 9-9**  
**Inflow and Outflow Differences between Base and Alternative HSU Models with UGTA Original Recharge Model**

<b>Geologic Model</b>	<b>% Difference Inflow</b>	<b>% Difference Outflow</b>	<b>% Difference Recharge</b>
Aquifer Juxtaposition	-0.04%	-0.03%	0.0%
More Extensive BF	-0.08%	-0.07%	0.0%
No Detachment Fault	-0.10%	-0.09%	0.0%
CP Basin	-0.10%	-0.09%	0.0%

***Effect of Changing the Recharge Model***

**Table 9-10**  
**Regional Model Inflows (m<sup>3</sup>/d) for Base HSU Model**

<b>Recharge Model</b>	<b>Northern Boundary</b>	<b>Southern Boundary</b>	<b>Eastern Boundary</b>	<b>Western Boundary</b>
UGTA Original	42000	9700	84000	770
UGTA Revised	46000	8800	81000	770
DRI-alluvial mask	48000	11000	83000	650
DRI-alluvial and elevation mask	46000	11000	83000	650
USGS redistribution	32000	9200	65000	1100
USGS no redistribution	20000	11000	60000	1300

**Table 9-11**  
**Regional Model Outflows (m<sup>3</sup>/d) for Base HSU Model**

Recharge Model	Northern Boundary	Southern Boundary	Eastern Boundary	Western Boundary
UGTA Original	610	9200	0.0071	130000
UGTA Revised	450	6800	0.02	130000
DRI-alluvial mask	190	17000	0.0058	130000
DRI-alluvial and elevation mask	220	18000	0.0051	120000
USGS redistribution	290	19000	0.0033	89000
USGS no redistribution	330	33000	0.00041	59000

**Table 9-12**  
**Total Water Balance (m<sup>3</sup>/d) for Various Recharge Models for Base HSU Model**

Recharge Model	Perimeter Inflow	Perimeter Outflow	Recharge	Percent Difference
UGTA Original	140000	140000	2100	-0.01%
UGTA Revised	140000	140000	760	0.00%
DRI-alluvial mask	140000	140000	1600	-0.04%
DRI-alluvial and elevation mask	140000	140000	850	0.00%
USGS redistribution	110000	110000	680	-0.01%
USGS no redistribution	92000	92000	610	0.20%

**Table 9-13**  
**Inflow and Outflow Differences from UGTA Original Recharge for Base HSU Model**

Recharge Model	% Difference Inflow	% Difference Outflow	% Difference Recharge
UGTA Revised	-1%	-1%	-64%
DRI-alluvial mask	4%	3%	-25%
DRI-alluvial and elevation mask	2%	1%	-59%
USGS redistribution	-21%	-22%	-68%
USGS no redistribution	-33%	-34%	-71%

## 9.4 *Limitations*

---

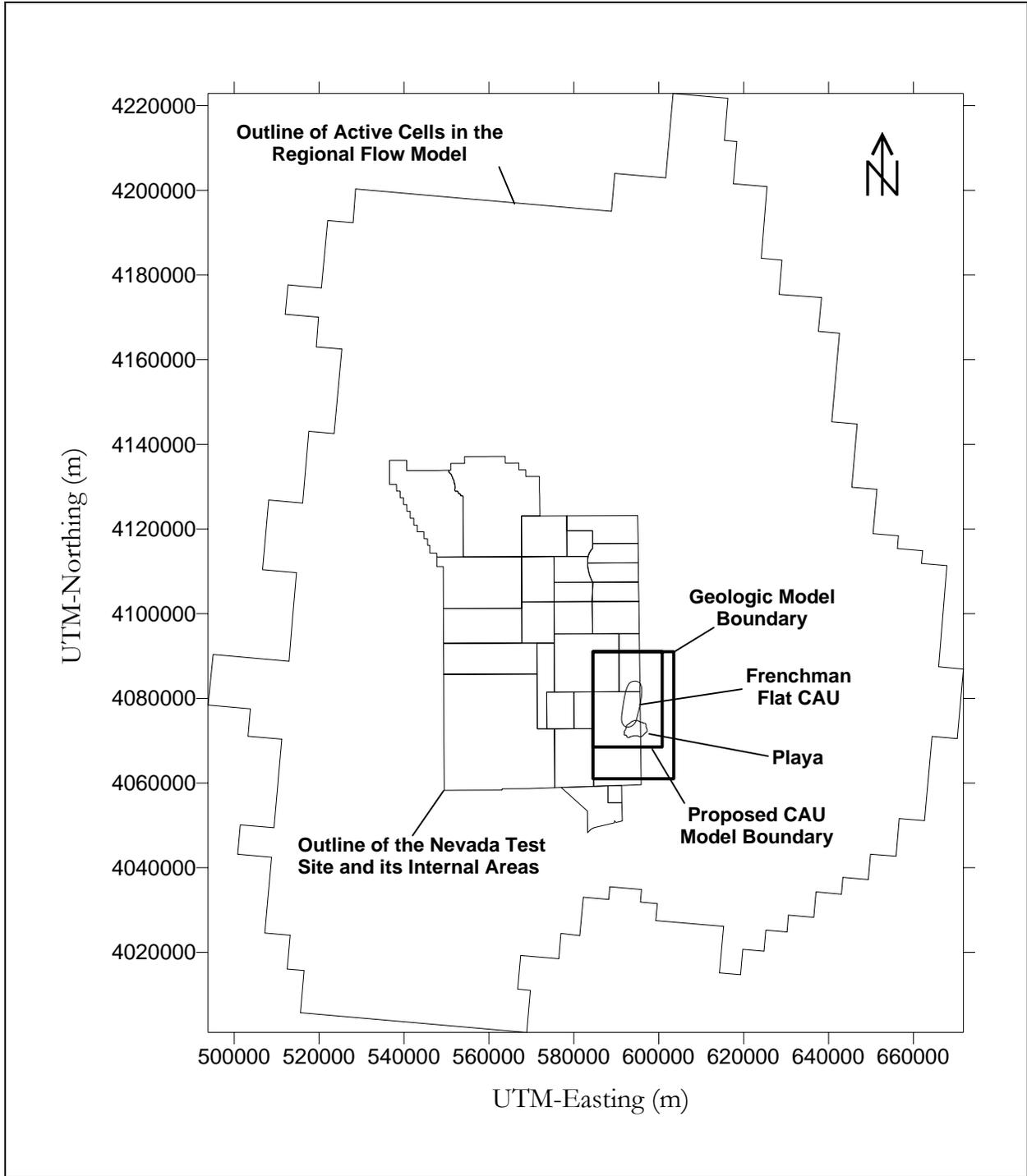
## 9.5 Summary

**Table 9-14**  
**Summary of Net Boundary Flux Ranges (m<sup>3</sup>/d) for HSU Model Boundaries**

<b>Model Boundary</b>	<b>Range in Net Inflow</b>	<b>Range in Net Outflow</b>
Northern	19000 to 52000	20 to 610
Southern	8800 to 11000	6800 to 33000
Eastern	60000 to 85000	0.00041 to 0.02
Western	550 to 1300	59000 to 130000

**Table 9-15**  
**Summary of Net Boundary Flux Ranges (m<sup>3</sup>/d) for Proposed CAU-Model Boundaries**

<b>Model Boundary</b>	<b>Range in Net Inflow</b>	<b>Range in Net Outflow</b>
Northern	17000 to 48000	20 to 610
Southern	4300 to 5700	49000 to 82000
Eastern	44000 to 87000	5500 to 17000
Western	550 to 1300	14000 to 38000



**Figure 9-1**  
**Geologic and Proposed CAU Model Boundaries**

# **10.0** *Groundwater Chemistry*

## **10.1** *Objectives*

## 10.2 Approach

$\delta$

$\delta^{18}$

**Table 10-1**  
**Summary of Groundwater Quality Data Parameters from Wells in and Around the FF CAU**

Well Name	Primary HSU	Parameter Group Types					
		Minor and Trace Elements	Environmental Tracers	Radionuclides	Organic Compounds	Other Parameters	Major Ions
Army #1 WW	LCA	37	9	64	9	165	37
ER-5-3	AA (upper) TM-WTA (lower)	6	3	6	0	6	6
ER-5-3#2	LCA	2	1	2	0	2	2
ER-5-4	AA	2	1	2	0	2	2
ER-5-4#2	LTCU	3	2	3	0	2	2
RNM-1	AA	9	5	25	2	9	8
RNM-2S	AA	8	11	381	2	12	9
TW-F	LCA	9	0	5	0	13	6
TW-3	LCA	2	3	2	0	2	2
UE-11a	TM-WTA	1	0	0	0	1	1
UE-5 PW-1	AA	13	2	16	16	17	11
UE-5 PW-2	AA	12	2	13	12	19	9
UE-5 PW-3	TM-WTA	15	5	14	14	20	12
UE-5c WW	AA (Upper) LTCU (Lower)	13	2	89	2	51	13
UE-5n	AA	4	3	6	0	4	5
WW-1	AA	3	0	0	1	3	3
WW-4	TM-WTA	9	2	126	4	48	9
WW-4A	TM-WTA	2	1	23	2	2	2
WW-5A	AA	9	1	7	0	9	9
WW-5B	AA	27	4	63	5	68	28
WW-5C	AA	36	2	260	6	302	36
WW-C	LCA	59	11	259	12	413	51
WW-C1	LCA	26	4	77	7	47	26

AA - Alluvial Aquifer

LCA - Lower Carbonate Aquifer

LTCU - Lower Tuff Confining unit

TM-LVTA - Timber Mountain lower vitric tuff aquifer

TM-WTA - Timber Mountain welded tuff aquifer

..

**North-to-South Flow**

**Bathtub Model**

**West-to-East Flow**

### **10.3 Data Description**

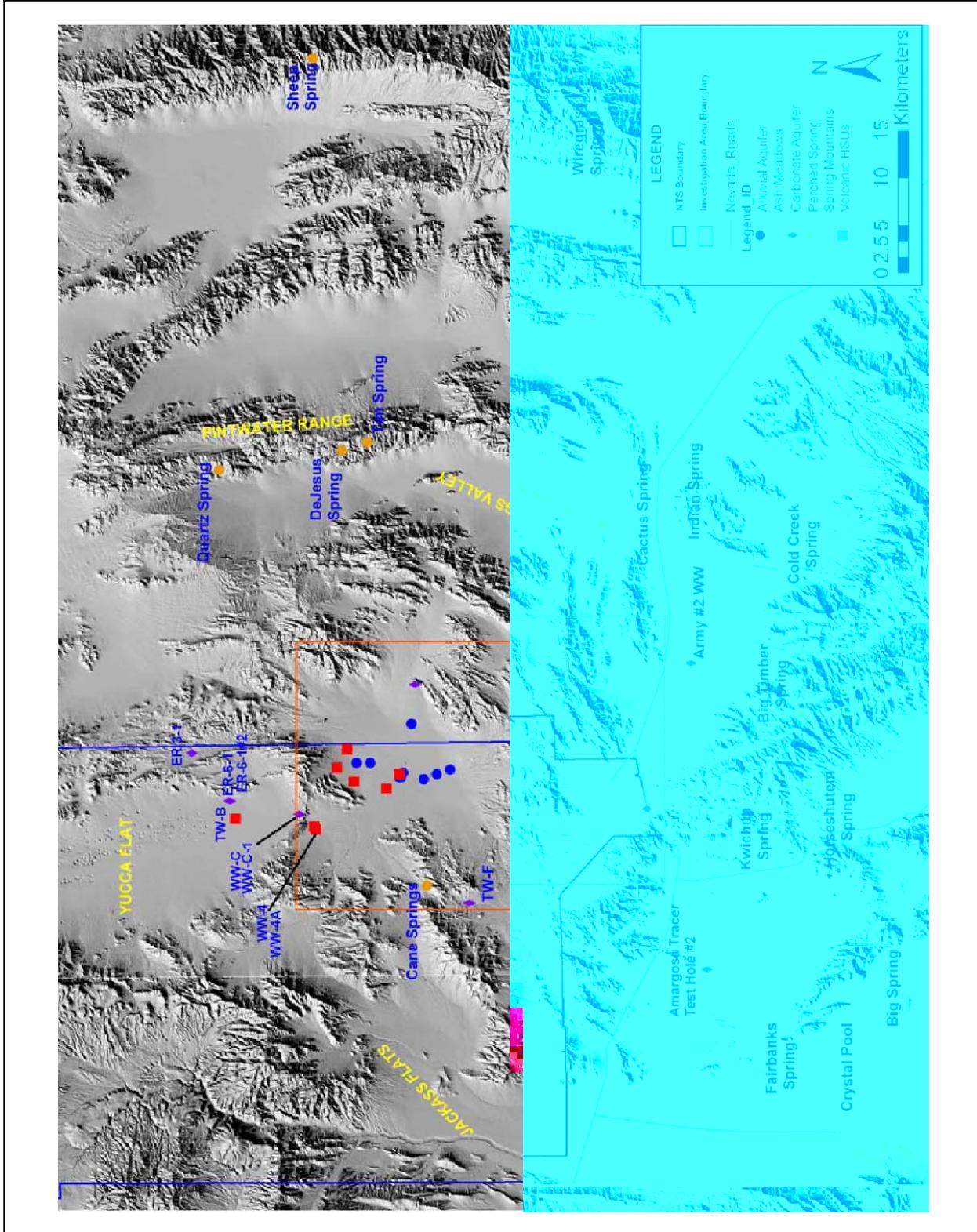


Figure 10-1  
Groundwater Quality Sample Locations

o

## **10.4 Data Evaluation**

### **10.4.1 Data Documentation Evaluation**

### **10.4.2 Data Quality Evaluation**

## 10.5 Analysis Process and Results

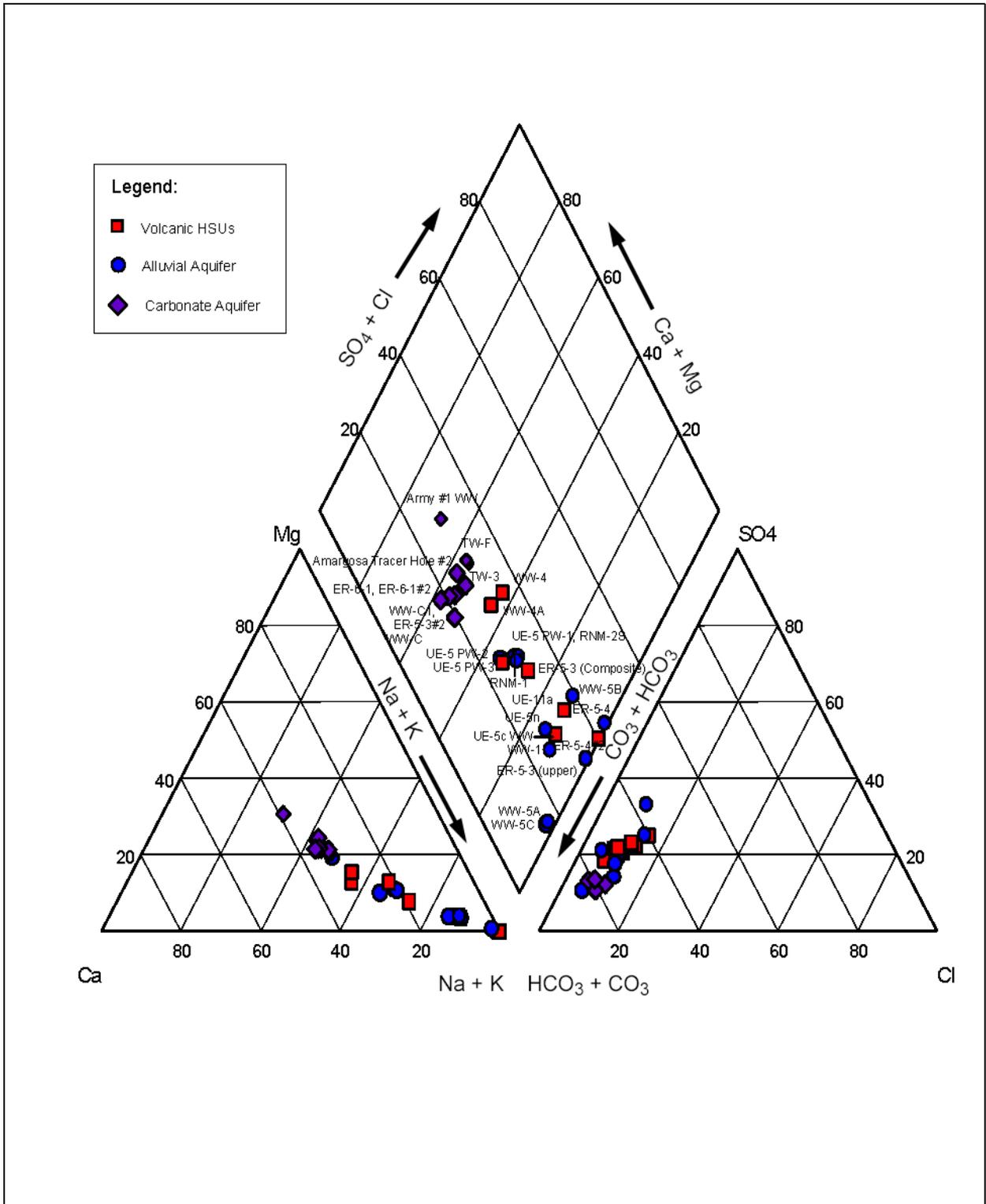
δ

s

δ

### 10.5.1 Major Ion Chemistry





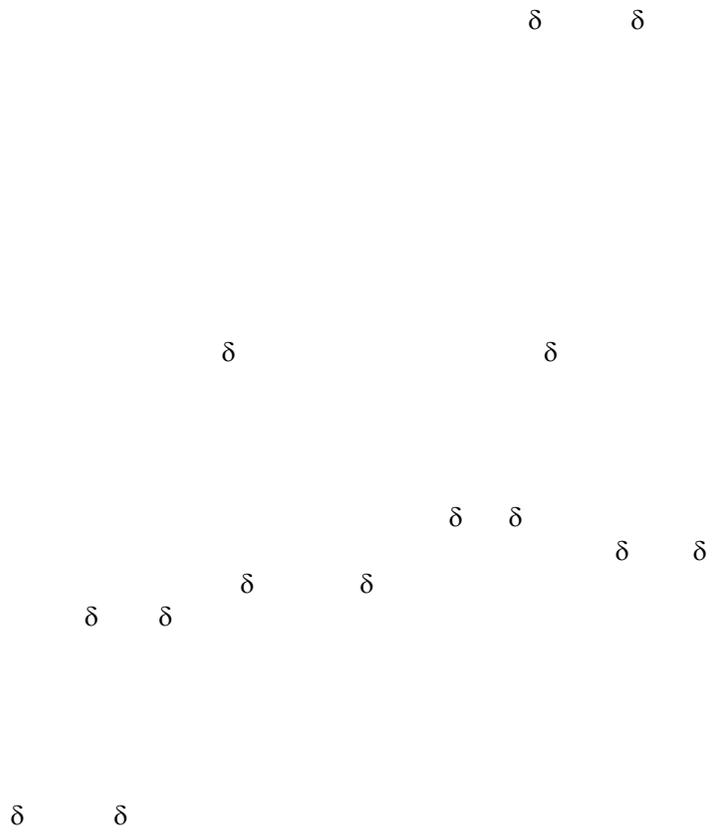
**Figure 10-2**  
**Piper Diagram Showing Percent Milliequivalents per Liter of Major Ions in**  
**Groundwaters of Frenchman Flat and the Vicinity**

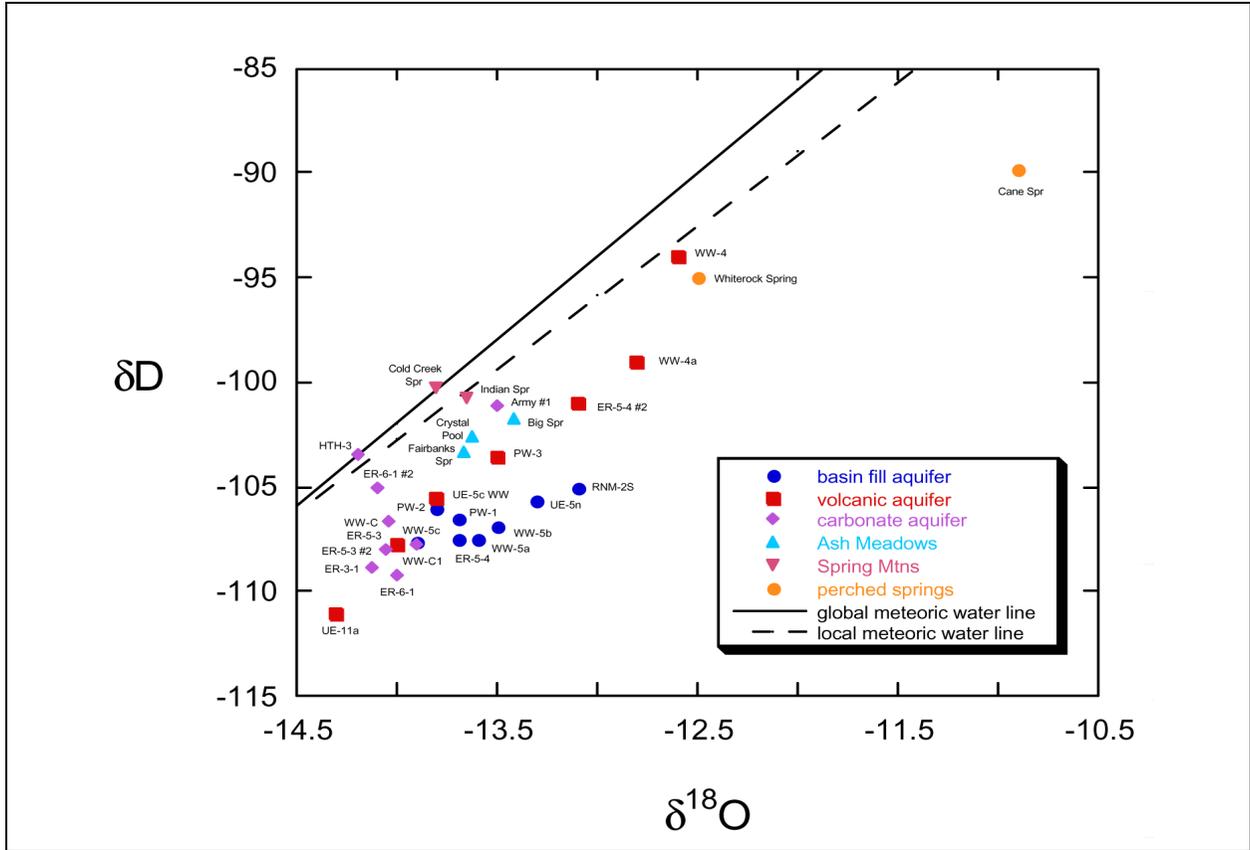




## **10.5.2 Stable and Environmental Isotopes**

### 10.5.2.1 Hydrogen and Oxygen Isotopes





**Figure 10-3**  
**Stable Isotopic Plot of  $\delta^{18}\text{O}$  vs.  $\delta\text{D}$  Values for Springs and Wells Within the Frenchman Flat Study Area**

$\delta$

**10.5.2.2 Carbon Isotopes**



**Table 10-2**  
**Carbon Isotope Data for Frenchman Flat Wells**

Well Name	Primary HSU	$\delta^{13}\text{C}$ (permil)			$^{14}\text{C}$ (pmc)		
		Range	Mean	n	Range	Mean	n
ER-5-4	AA	-4.7 / -4.6	-4.7	2	1.5	1.5	1
UE-5 PW-1	AA	-8.7 / -7.3	-8.2	5	14.4 / 28.4	20.2	4
UE-5 PW-2	AA	-9.0 / -8.1	-8.6	2	27.1 / 33.8	30.4	2
WW-5A	AA	-4.8 / -4.3	-4.6	2	2.6	2.6	1
WW-5B	AA	-10 / -9.5	-9.8	2	13.1	13.1	1
WW-5C	AA	-6.1 / -6.0	-6.0	3	3.13 / 3.4	3.3	2
Army #1 WW	LCA	-7.1 / -5.6	-6.2	3	2.8 / 5.4	4.1	2
ER-5-3#2	LCA	-4.4 / -4.3	-4.4	2	1.6	1.6	1
TW-3	LCA	-9.2	-9.2	1	36.9	36.9	1
WW-C	LCA	-4.2 / -3.8	-4.07	3	0.61 / 1.0	0.81	2
WW-C1	LCA	-3.8 / -3.1	-3.5	2	0.8 / 1.03	0.9	2
ER-5-4#2	LTCU	-0.4 / 0.2	-0.1	2	1.0	1.0	1
UE-5c WW	LTCU	-7.7 / -7.2	-7.5	3	6.5 / 6.7	6.6	2
ER-5-3	TM-WTA	-8.0 / -7.8	-7.9	2	8.5	8.5	1
UE-5 PW-3	TM-WTA	-8.5 / -7.4	-7.9	5	16 / 21.0	18	3
WW-4a	TM-WTA	-9.3 / -8.4	-8.9	2	18.3	18.3	1
WW-4	TM-WTA	-10.9	-10.9	1	18.2 / 19.8	19.0	2
Cane	Perched Spring	-10.1	-10.1	1	92.8	92.8	1

AA - Alluvial Aquifer

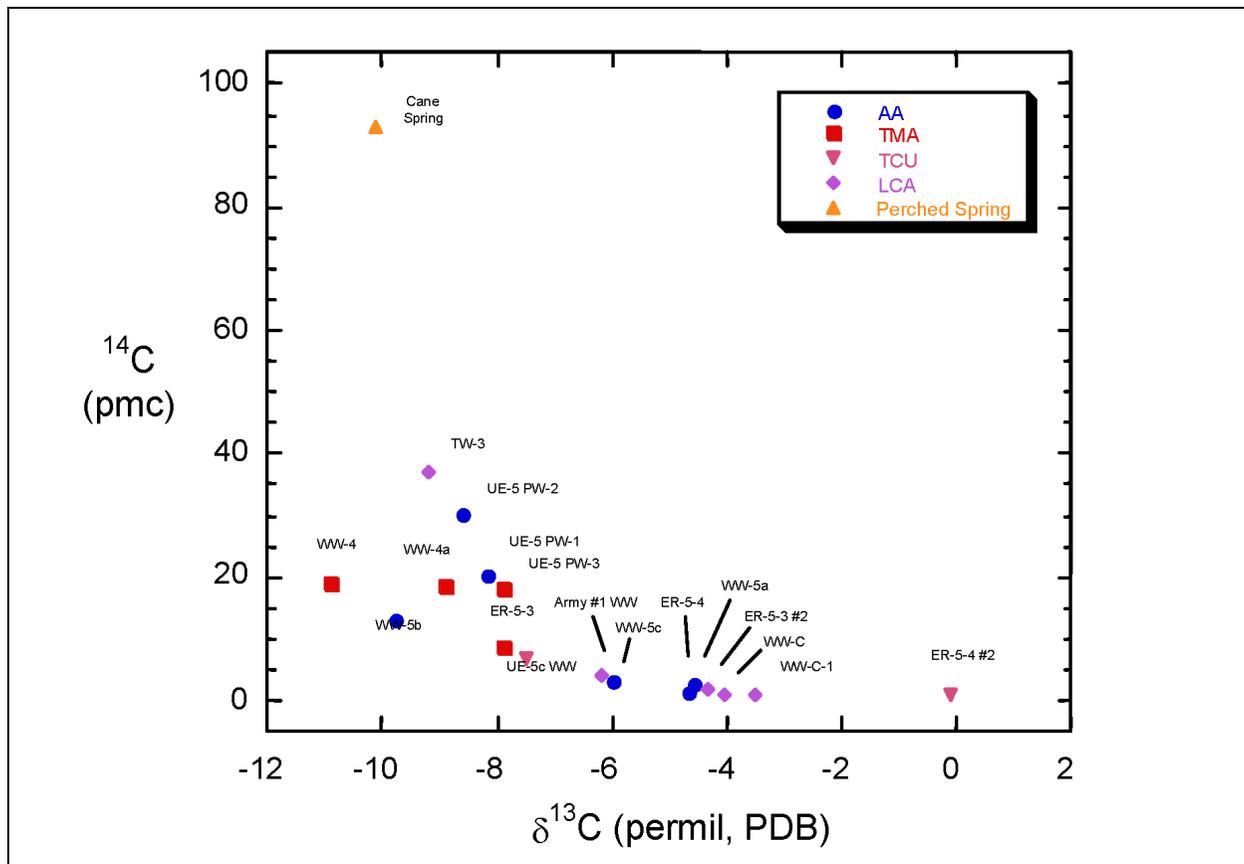
LCA - Lower Carbonate Aquifer

LTCU - Lower Tuff Confining unit

TM-WTA - Timber Mountain welded tuff aquifer

δ

δ



**Figure 10-4**  
**Plot of  $\delta^{13}\text{C}$  vs.  $^{14}\text{C}$  Values for Springs and Wells Within the Frenchman Flat Study Area**

**Table 10-3**  
**DO<sup>14</sup>C Calculated Groundwater Ages**

Site Name	DOC (mg/L)	DO <sup>13</sup> C (‰)	DO <sup>14</sup> C (percent modern)	Age (yrs)
<b>Alluvial Aquifer</b>				
WW 5A	0.44	-26.6	24.8	8,100
WW 5B	0.10	-29.1	42.3	3,700
WW 5C	0.35	-62.7	42.2	3,700
ER-5-4	0.19	-29.2	45.9	3,000
Average			38.8	4,400
<b>Volcanic Aquifers</b>				
WW 4A	0.20	-46.6	16.1	12,000
ER-5-4 #2	0.52	-25.4	19.6	10,000
UE-5 PW-3	0.14	-30.3	41.3	3,900
UE-5c WW	0.17	NA	32.9	5,800
Average			27.5	7,200
<b>Lower Carbonate Aquifer</b>				
ER-5-3 #2	0.61	-36.8	12.0	14,000

Source: Hershey et al. (2004)

### 10.5.3 Conservative Tracer Data

δ δ

10.5.3.1 Conservative Tracer Evaluation

δ δ δ

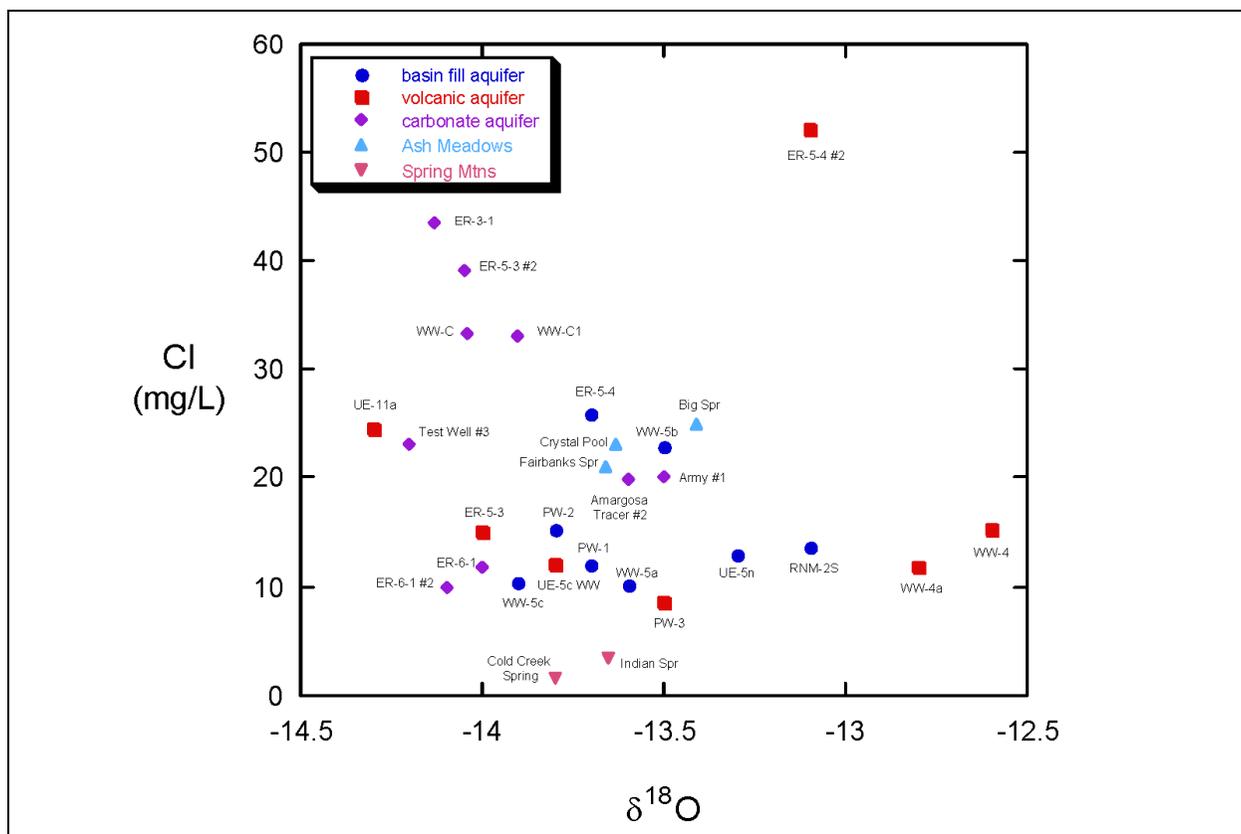


Figure 10-5  
 Plot of  $\delta^{18}O$  vs. Cl Values for Springs and Wells Within the Frenchman Flat Study Area

**10.5.3.1.1 North-to-South Flow**

δ

δ

δ δ

### **10.5.3.1.2 West-to-East Flow**

δ δ

### **10.5.3.1.3 Bathtub Model**

$\delta$   $\delta$

$\delta$

$\delta$   $\delta$

$X$   $X$

$X$   $X$

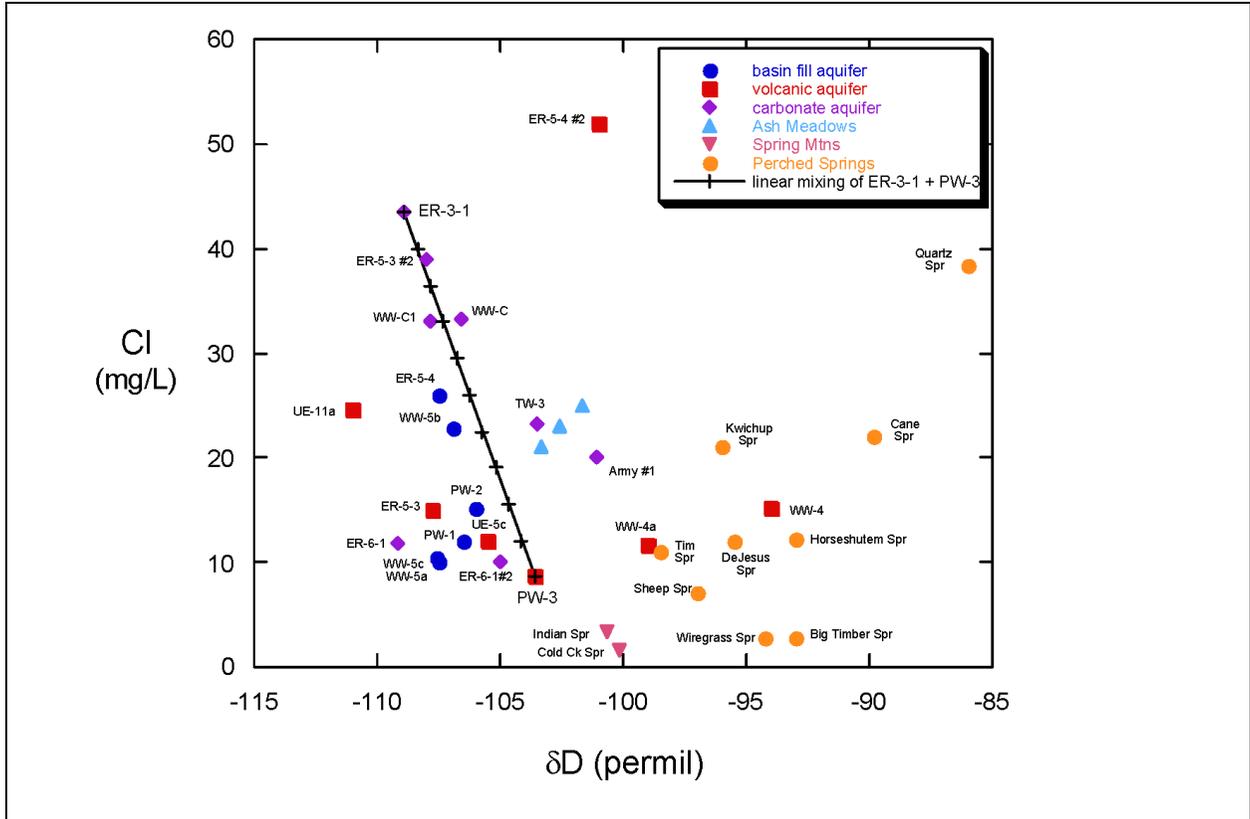
$\delta$   $\delta$

$X$   $X$

$\delta$

$\delta$

---

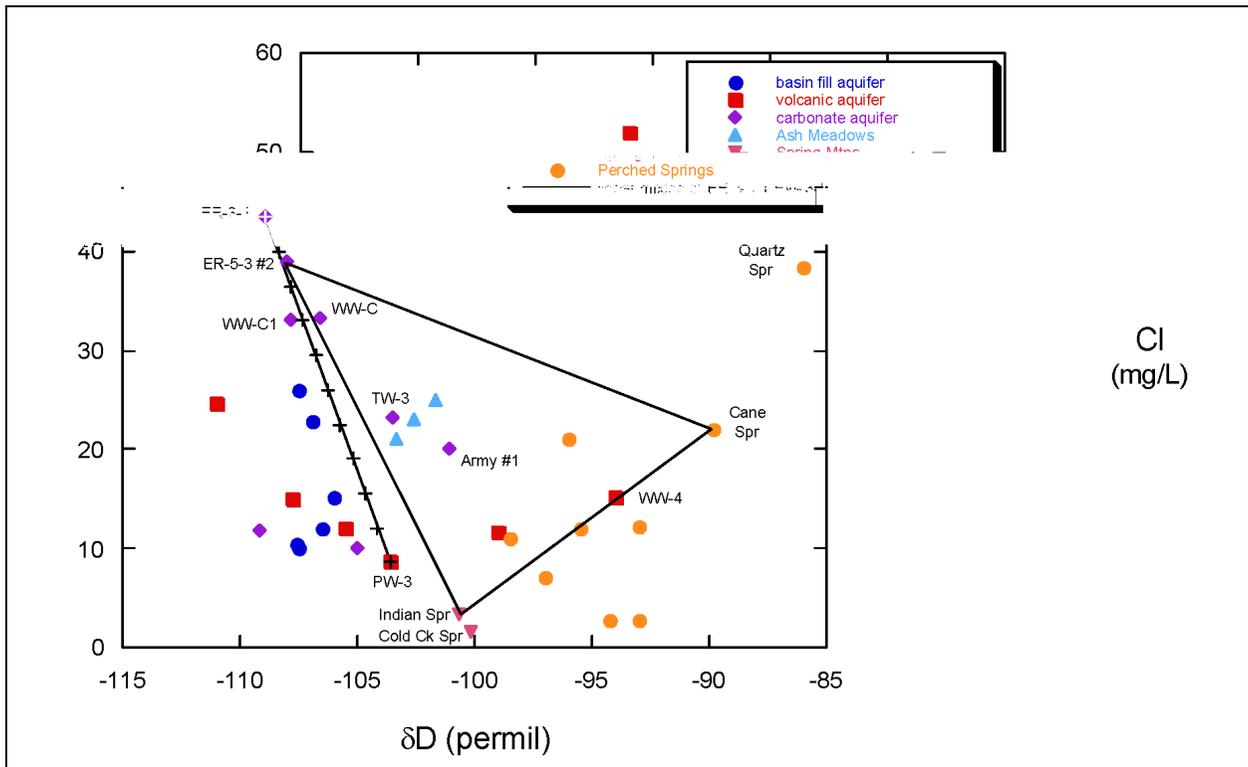


**Figure 10-6**  
**Plot of  $\delta D$  vs. Cl Values for Springs and Wells Within the Frenchman Flat Study Area**

$\delta$

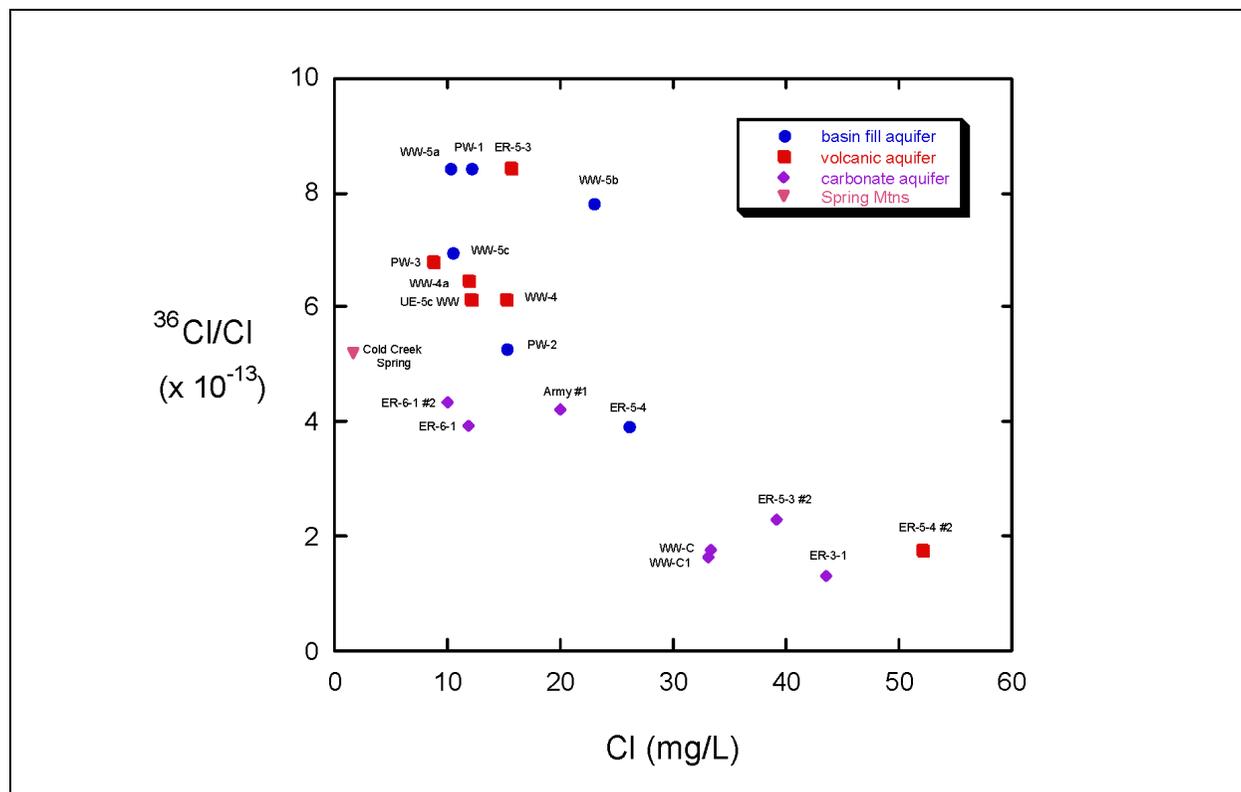
$\delta$        $\delta^{18}$

δ δ



**Figure 10-7**  
**Plot of Cl vs.  $\delta D$  Values for Groundwater Samples From Frenchman Flat and Vicinity Showing One Possible Three Component Mixing Model to Explain the Observed Groundwater Composition of Army #1 WW**

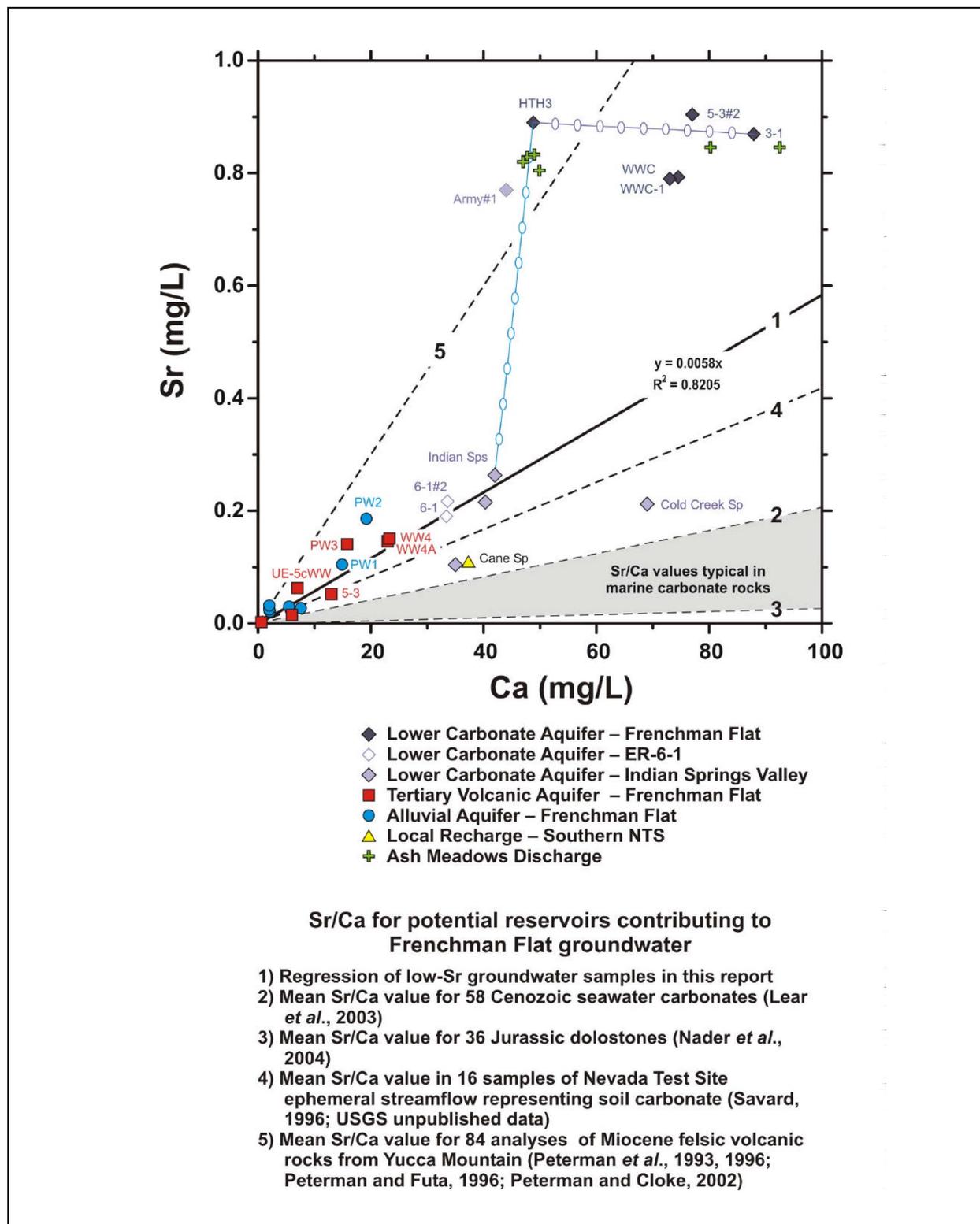




**Figure 10-8**  
**Plot of  $^{36}\text{Cl}/\text{Cl}$  vs. Cl for Groundwater Samples From Frenchman Flat and Vicinity**

*hypothetical*

#### **10.5.4 Strontium and Strontium Isotope ( $^{87}\text{Sr}/^{86}\text{Sr}$ ) Evaluation**



**Figure 10-9**  
Concentrations of Sr and Ca in Selected Groundwater Samples in the Frenchman Flat Vicinity

*North to South Flow*

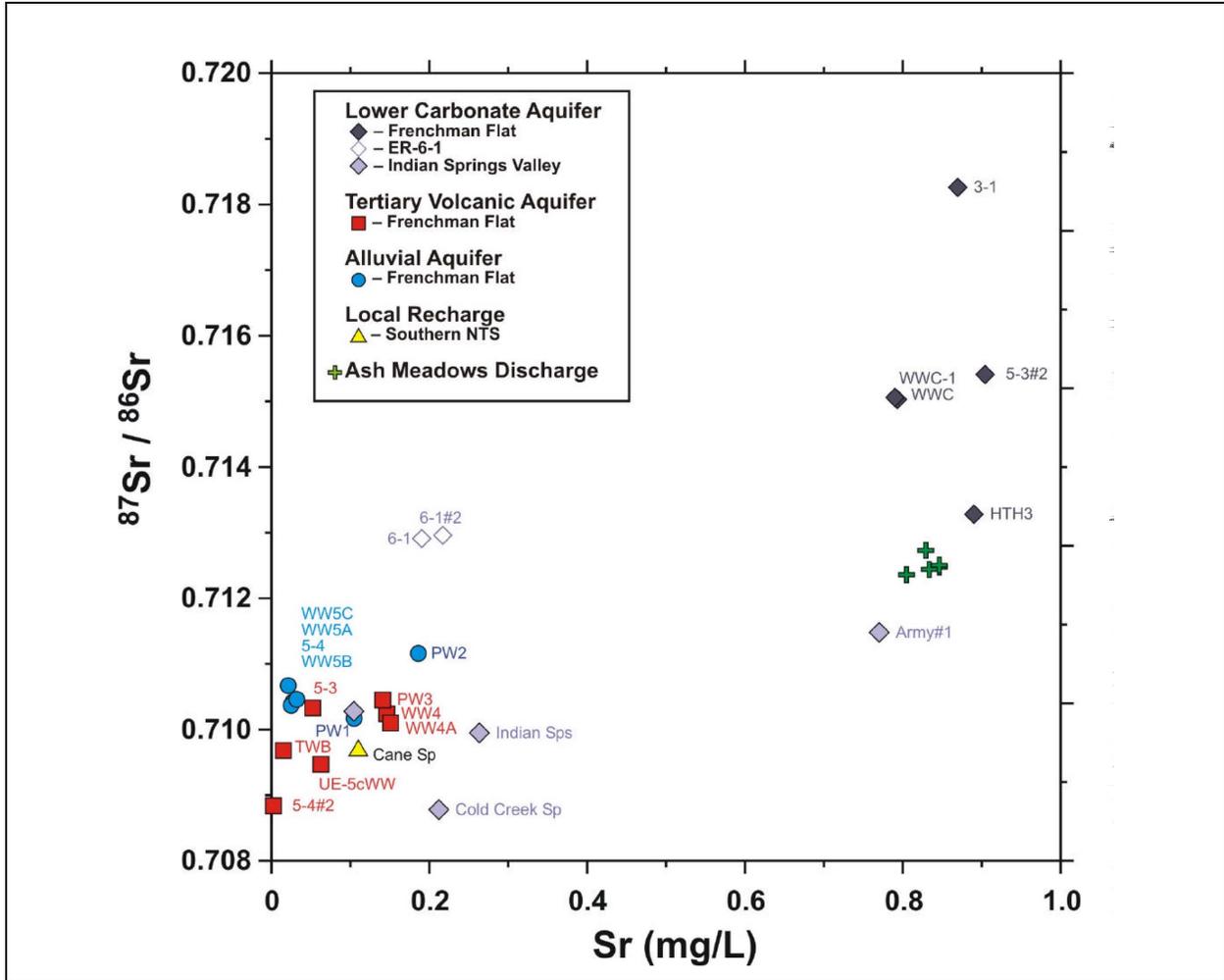


Figure 10-10  $^{87}\text{Sr}/^{86}\text{Sr}$  Ratios and Sr Concentrations for Selected Water Samples in the Frenchman Flat Vicinity

*West-to-East flow*

***Bathtub Model***

**10.5.5 NETPATH Modeling**

δ

δ

δ

### 10.5.5.1 NETPATH Modeling Approach

..

..

δ

δ

**Table 10-4**  
**Saturation Indices Derived Using NETPATH**  
 (Negative values indicate undersaturation and positive values indicate oversaturation)

Site Name	Calcite	SiO <sub>2</sub> (Chalcedony)	Albite	Anorthite	K-feldspar	Ca-smectite	Illite	Dolomite
Army #1 WW	-0.04	-0.02	-2.56	-4.37	-1.14	1.80	-0.51	0.01
Cane Spring	-0.07	0.70	0.59	-2.06	2.23	4.82	4.16	-0.51
Cold Creek Spring	0.42	-0.20	-2.79	-2.38	-0.78	3.09	2.00	0.35
ER-3-1	0.12	0.20	-0.57	-1.75	0.75	3.90	3.00	0.28
ER-5-3 #2	0.54	0.15	-1.77	-4.16	-0.42	0.24	-0.19	1.09
ER-5-4 #2	-0.43	0.43	-0.14	-4.75	0.40	-1.07	-0.88	-1.02
Indian Springs	-0.06	-0.11	-3.28	-3.71	-1.45	1.16	0.13	-0.02
Quartz Spring	0.08	0.73	0.98	-1.87	2.06	5.97	4.85	0.04
UE-5 PW-3	0.18	0.63	0.21	-2.64	1.49	2.46	2.23	0.22
TW-3	0.22	-0.10	-2.19	-3.73	-0.90	0.29	-0.18	0.48
WW-C	0.92	0.26	-0.69	-2.84	0.67	1.62	1.48	1.77
WW-C1	-0.07	0.13	-1.53	-3.36	-0.26	2.06	1.12	-0.11

Source Hershey et al. (2004)

### 10.5.5.2 NETPATH Geochemical Modeling Results

**Table 10-5**  
**Summary of Conservative Mixing and NETPATH Geochemical Models**  
 (Page 1 of 2)

<b>Geochemical Model</b>	<b>Groundwater And/or Recharge Source and Contributory Fractions</b>		
<b>North to South Flow (Frenchman Flat LTCU groundwater + Spring Mountain Recharge = Army #1 WW)</b>			
	<b>ER-5-4 #2</b>	<b>Indian Springs</b>	
Conservative	0.27 to 0.34	0.66 to 0.73	
*NETPATH	0.02 to 0.09	0.91 to 0.98	
	<b>ER-5-4 #2</b>	<b>Cold Creek Spring</b>	
Conservative	0.27 to 0.34	0.66 to 0.73	
*NETPATH	0.07 to 0.09	0.91 to 0.93	
<b>North to Southwest Flow (Frenchman Flat LCA Groundwater + Spring Mountain Recharge + Local Recharge = Army #1 WW)</b>			
	<b>ER-5-3 #2</b>	<b>Cold Creek Spring</b>	<b>Cane Spring</b>
Conservative	0.36 to 0.40	0.43 to 0.48	0.11 to 0.21
*NETPATH	0.06	0.94	0.00
	<b>ER-5-3 #2</b>	<b>Cold Creek Spring</b>	<b>Quartz Spring</b>
Conservative	0.36	0.50 to 0.51	0.13 to 0.14
*NETPATH	0	0.87	0.13
	<b>ER-5-3 #2</b>	<b>Indian Spring</b>	<b>Cane Spring</b>
Conservative	0.36 to 0.40	0.43 to 0.48	0.11 to 0.21
NETPATH	0.10 to 0.14	0.63 to 0.90	0.00 to 0.23
NETPATH (with $\delta D$ )	0.08 to 0.11	0.85 to 0.91	0.01 to 0.04
	<b>ER-5-3 #2</b>	<b>Indian Spring</b>	<b>Quartz Spring</b>
Conservative	0.36 to 0.40	0.43 to 0.48	0.11 to 0.21
NETPATH	0.03 to 0.05	0.86 to 0.89	0.08 to 0.09
NETPATH (with $\delta D$ )	0.07 to 0.09	0.89 to 0.92	0.01 to 0.02
	<b>TW-3</b>	<b>Cold Creek Springs</b>	<b>Cane Spring</b>
Conservative	0.59 to 0.67	0.21 to 0.24	0.09 to 0.19
NETPATH	0.32 to 0.41	0.48 to 0.59	0.00 to 0.20
NETPATH (with $\delta D$ )	0.39	0.57	0.04
	<b>TW-3</b>	<b>Cold Creek Springs</b>	<b>Quartz Spring</b>
Conservative	0.67 to 0.70	0.15	0.14 to 0.19
NETPATH	0.00 to 0.41	0.59 to 0.97	0.00 to 0.13
NETPATH (with $\delta D$ )	0.35	0.63	0.02
	<b>TW-3</b>	<b>Indian Springs</b>	<b>Cane Spring</b>
Conservative	0.56 to 0.62	0.27 to 0.29	0.09 to 0.17
NETPATH	0.38	0.58	0.04
NETPATH (with $\delta D$ )	0.37	0.57	0.06
	<b>TW-3</b>	<b>Indian Springs</b>	<b>Quartz Spring</b>
Conservative	0.67 to 0.70	0.15	0.14 to 0.19
NETPATH	0.03	0.83	0.14
NETPATH (with $\delta D$ )	0.29	0.68	0.03

**Table 10-5**  
**Summary of Conservative Mixing and NETPATH Geochemical Models**  
 (Page 2 of 2)

Geochemical Model	Groundwater And/or Recharge Source and Contributory Fractions	
<b>Bathtub Model (Less Dilute LCA Groundwater + Frenchman Flat LTCU groundwater = ER-5-3 #2)</b>		
	<b>ER-3-1</b>	<b>UE-5 PW-3</b>
Conservative	0.76 to 0.87	0.13 to 0.24
*NETPATH	0.55 to 0.57	0.43 to 0.45
<b>Bathtub Model (Less Dilute LCA Groundwater + Frenchman Flat LTCU groundwater = WW-C1)</b>		
	<b>ER-3-1</b>	<b>UE-5 PW-3</b>
Conservative	0.70	0.30
NETPATH	0.70	0.30
NETPATH (with $\delta D$ )	0.72	0.28
<b>Bathtub Model (Less Dilute LCA Groundwater + Frenchman Flat LTCU groundwater = WW-C)</b>		
	<b>ER-3-1</b>	<b>UE-5C WW</b>
Conservative	0.70	0.30
*NETPATH	No reasonable models	
<b>Less Dilute LCA Groundwater + Frenchman Flat LCA groundwater = ER-5-3 #2</b>		
	<b>ER-3-1</b>	<b>TW-3</b>
Conservative	0.77	0.23
*NETPATH	0.47	0.53

\*No reasonable NETPATH models were obtained when  $\delta D$  was included

Source: Hershey et al. (2004)

$\delta$

$\delta$

$\delta$

### 10.5.5.3 North-to-South Flow

δ

δ

,

**10.5.5.4 West-to-East Flow**

**10.5.5.5 Bathtub Model**

$\delta$

$\delta$

$\delta$

$\delta$

$\delta$

8

## **10.6 Limitations**

## **10.7 Summary**

***North-to-South Flowpath***

δ δ

***East-to-West Flowpath***

***Vertical Transport ("Bathtub Model")***

## 11.0 References

*Standard Guide for  
Application of a Ground-Water Flow Model to a Site-Specific Problem*

*. Standard Guide for  
Comparing Ground-Water Flow Model Simulations to Site-Specific  
Information*

*Standard Guide for Defining  
Boundary Conditions in Ground-Water Flow Modeling Designation*

*Standard Guide for Defining  
Initial Conditions in Ground-Water Flow Modeling*

*Standard Guide for  
Conducting a Sensitivity Analysis for a Ground-Water Flow Model  
Application*

*. Standard Guide for  
Documenting a Ground Water Flow Model Application*

*Standard for Calibrating a  
Ground-Water Flow Model Application*

*Hydrogeologic  
Data from Selected Wells and Test Holes in and Adjacent to the Nevada Test  
Site, Nye County, Nevada, Through 1986.*

*Hydrostratigraphic Model for the Groundwater Flow and Contaminant Transport Model of Corrective Action Unit 98: Frenchman Flat, Nye County, Nevada.*

*A Hydrostratigraphic Model and Alternatives for the Groundwater Flow and Contaminant Transport Model of Corrective Action Unit 98: Frenchman Flat, Clark, Lincoln, and Nye Counties, Nevada.*

*Completion Report for Well Cluster ER-5-3*

*Completion Report for Well Cluster ER-5-4*

*Probability, Statistics, and Decision for Civil Engineers*

*Geohydrology of the Eastern Part of Pahute Mesa, Nevada Test Site, Nye County, Nevada*

*Information Pertinent to the Migration of Radionuclides in Groundwater at the Nevada Test Site. Part 1: Review and Analysis of Existing Information,*

*Nevada Test Site Radionuclide Inventory, 1951-1992,*

*Analysis of Water Levels in the Frenchman Flat Area, Nevada Test Site,*

*The Cambrian Migration Experiment, A Summary Report*

*Hydrology and Radionuclide Migration  
Program 1985-1986 Progress Report,*

*Project 1984 Progress Report,* *Radionuclide Migration*

*America Bulletin,* *Geological Society of*

*CRC Handbook of Chemistry and Physics,*

*Groundwater Chemistry at the Nevada Test  
Site: Data and Preliminary Interpretations*

*Calibration of the Site-Scale Saturated Zone Flow Model,*

*Water Quality and Physical Characteristics of Nevada Test  
Site Water Supply Wells,*

*Sources and Mechanisms of Recharge for Ground Water in  
the West-Central Amargosa Desert, Nevada – A Geochemical Interpretation,*

*Hydrology,* *Environmental Tracers in Subsurface*

*Science*

*Simulated Effects of Increased Recharge on the  
Ground-Water Flow System of Yucca Mountain and Vicinity,  
Nevada-California*

*Hydrogeologic  
Evaluation and Numerical Simulation of the Death Valley Regional  
Ground-water Flow System, Nevada and California*

*Journal of Applied Meteorology,*

*Validation Test Report (VTR) for the FEHM Application  
Version 2.10, Yucca Mountain Project Identification Numbers SAN:  
LANL-1999-046; STN: 10086-2.10-00.*

*Validation Test Report (VTR) for the FEHM Application  
Version 2.12, Yucca Mountain Project Identification Numbers SAN:  
LANL-2001-133; STN: 10086-2.12-00.*

*Software Requirements,  
Design, and Verification and Validation for the FEHM Application -  
A Finite-Element Heat- and Mass-Transfer Code,*

*Journal of Hydrology*

*Letter Report: Underground Test  
Area Project, Mineralogical and Isotopic Analysis of Fracture-Coating and  
Alteration Minerals in the Yucca Flat Tuff Confining Unit, Nevada Test Site.*

*Manual for PEST*

*EarthVision 7: Software for 3-D Modeling and  
Visualization*

*Bulletin,* *Water Resources*

*Journal of Hydrology,*

*Federal Facility Agreement and Consent Order.*

*FOCUS'93: Site Characterization and Model Validation*

*A Hydrogeologic Map of  
the Death Valley Region, Nevada and California, Developed Using GIS  
Techniques,*

*Principles of Isotope Geology,*

*Federal Facility Agreement and Consent Order.*

*Federal Facility Agreement and Consent Order, Appendix VI*

*Groundwater*

*Use of  
Hydrochemistry for Interpreting Ground-Water Flow Systems in Central  
Nevada,*

*Chloride Mass-balance as a Method for Determining  
Long-Term Groundwater Recharge Rates and Geomorphic-Surface Stability  
in Arid and Semi-Arid Regions, Whiskey Flat and Beatty, Nevada.*

*Groundwater.*

*Groundwater*

*Ground Water Test Well C, Nevada Test Site, Nye County, Nevada, A Summary of Lithologic Data, Aquifer Tests, and Well Construction,*

*Unstructured 3D Grid Toolbox for Modeling and Simulation,*

*Nevada Test Site Water-Supply Wells,*

*Descriptive Narrative for the Hydrogeologic Model of the Yucca Flat Corrective Action Unit: An Interim Report. U.S. Department of Energy, Nevada Operations Office.*

*Bedrock Geologic Map of the Black Hills,*

*MODFLOW-2000, the U.S. Geological Survey Modular Ground-water Model -- User Guide to Modularization Concepts and the Ground-water Flow Process*

*. A Computer Program for Calculating Subregional Water Budgets Using Results from the U.S. Geological Survey Modular Three-dimensional Ground-water Flow Model,*

*Nevada Precipitation and Acreages of Land by Rainfall Zones*

*Nevada Precipitation and Acreages of Land by Rainfall  
Zones*

*U.S. Geological Survey Hydrologic Investigations Atlas,*

*Study and Interpretation of the Chemical Characteristics of  
Natural Water*

*Evaluation of Groundwater Movement in the  
Frenchman Flat CAU Using Geochemical and Isotopic Analysis, Desert  
Research Institute, Division of Hydrologic Sciences,*

*Estimation of Groundwater  
Velocities from Yucca Flat to the Amargosa Desert Using Geochemistry and  
Environmental Isotopes*

*Journal of Applied Meteorology*

*Simulation of Net Infiltration Using  
A Distributed Parameter Watershed Model for the Death Valley Regional  
Flow System, Nevada and California,*

*Evaluation of Recharge Potential at Crater  
U5a (WISHBONE),*

*Water Wells in Frenchman and Yucca Valleys, Nevada Test  
Site, Nye County, Nevada.*

*Well Recompletion Report for Water Well 5A,  
Groundwater Characterization Project,*

*Groundwater Recharge and Discharge Data  
Documentation Package (Phase I Data Analysis Documentation,*

*Hydrologic Parameter Data Documentation Package  
(Phase I Data Analysis Documentation, Volume IV).*

*Potentiometric Data Documentation Package (Phase I  
Data Analysis Documentation, Volume II).*

*Regional Geologic Model Data Documentation Package  
(Phase I Data Analysis Documentation, Volume I),*

*Groundwater Flow Model Documentation Package  
(Phase I Data Analysis Documentation, Volume VI).*

*Value of Information Analysis for Corrective Action Unit  
No. 98: Frenchman Flat,*

*Underground Test Area Project Corrective Action  
Unit 98: Frenchman Flat Data Analysis Task: Vol. I - Hydrostratigraphic  
Model Documentation Package*

*External Peer Review Group Report on Frenchman Flat  
Data Analysis and Modeling Task, Underground Test Area Project Revision  
No. 0,*

*Underground Test Area Project Corrective Action  
Unit 98: Frenchman Flat, Vol. II - Groundwater Data Documentation  
Package,*

*Underground Test Area Project Corrective Action  
Unit 98: Frenchman Flat, Vol. III - Groundwater Flow and Contaminant  
Transport Model Data Documentation Package.*

*Frenchman Flat Hydrogeologic Investigation Wells  
Drilling and Completion Criteria,*

*Lessons Learned from the Frenchman Flat Corrective Action Groundwater Flow and Radionuclide Transport Model.*

*Addendum to the Frenchman Flat Hydrogeologic Investigation Wells Drilling and Completion Criteria,*

*Modeling Approach for Corrective Action Unit 98, Frenchman Flat,*

*Climate of the Death Valley Region, Nevada/California.*

*Environmental Tracers in Subsurface Hydrology*

*Summary of Hydrogeologic Controls and Ground-Water Flow at the Nevada Test Site, Nye County, Nevada,*

*Ground-Water Discharge as Determined from Estimates of Evapotranspiration, Death Valley Regional Flow System, Nevada and California,*

*Soil Testing for Engineers.*

*Evaluation of the Hydrologic Source Term from Underground Nuclear Tests in Frenchman Flat at the Nevada Test Site: The CAMBRIC Test,*

*Earth and Planetary Science Letters,*

*Hydrogeologic  
Characterization of Wells HTH-1, UE18r, UE6e, and HTH-3, Nevada Test  
Site.*

*Hydrology of the Valley-fill and Carbonate-rock  
Reservoirs Pahrump Valley, Nevada-California,*

*Subsurface Flow to Eagle  
Valley from Vicee, Ash, and Kings Canyons, Carson City, Nevada, Estimated  
from Darcy's Law and the Chloride-Balance Method,*

*Groundwater in White River Valley, White  
Pine, Nye and Lincoln Counties, Nevada,*

*Proceedings of the Fourth Annual International  
Conference, High-Level Radioactive Waste Management, Las Vegas, NV,  
April 26-30, 1993*

*Geochemistry of Outcrop Samples from the Raven Canyon and Paintbrush  
Canyon Reference Sections, Yucca Mountain, Nevada*

*Geochemistry of Core Samples of the Tiva  
Canyon Tuff from Drill Hole UE-25 NRG#3, Yucca Mountain, Nevada*

*Geochemistry*

*Applied*

*An Interactive Code  
(NETPATH) for Modeling Net Geochemical Reactions Along a Flow Path,*

*Journal of Applied Meteorology,*

*Nature and Extent of Lava-Flow  
Aquifers Beneath Pahute Mesa, Nevada Test Site,*

*Contaminant Transport Parameters  
for the Groundwater Flow and Contaminant Transport Model of Corrective  
Action Units 101 and 102: Central and Western Pahute Mesa, Nye County,  
Nevada,*

*Ground-Water Data for the  
Nevada Test Site and Selected Other Areas in South-Central Nevada,  
1992-1993,*

*Geochemical Data Analysis and  
Interpretation of the Pahute Mesa – Oasis Valley Groundwater Flow System,  
Nye County, Nevada.*

*Paleoenvironments and Paleohydrology of the  
Mojave and Southern Great Basin Deserts,*

*Hydrologic Resources Management Program and  
Underground Test Area FY 1999 Progress Report*

*Water Resources Research,*

*Regional Ground-Water Systems in the Nevada Test Site Area,  
Nye, Lincoln, and Clark Counties, Nevada,*

*Reconnaissance Estimates of Recharge Based  
on an Elevation-dependent Chloride Mass-balance Approach,*

*Water Resources Research,*

*Radioactive Waste Management*

*Selected Hydrologic Data from Fortymile Wash in the Yucca Mountain Area, Nevada, Water Years 1993-94*

*Chemistry and Movement of Ground Water,  
Nevada Test Site*

*Water for  
Nevada, Nevada's Water Resources,*

*Digital Geologic Map of the Nevada Test Site and  
Vicinity, Nye, Lincoln, and Clark Counties, Nevada, and Inyo County,  
California,*

*Hydrologic Data for the Groundwater  
Flow and Contaminant Transport Model of Corrective Action Units 101 and  
102: Central and Western Pahute Mesa, Nye County, Nevada*

*Interpretation of Hydraulic Test and  
Multiple-Well Aquifer Test Data at Frenchman Flat Well Cluster ER-5-3*

*Transferability of Data Related to the  
Underground Test Area Project, Nevada Test Site, Nye County, Nevada*

*Integrated Analysis Report for Single and  
Multiple-Well Aquifer Testing at Frenchman Flat Well Cluster RNM-2s  
Nevada Test Site, Nevada,*

*. Digital and  
Map Products Produced Using PRISM. Proc., 10th AMS Conf. on Applied  
Climatology, Amer. Meteorological Soc., Reno, NV, Oct. 20-23, 217-218.*

*Geochemistry and Isotope  
Hydrology of Representative Aquifers in the Great Basin Region of Nevada,  
Utah, and Adjacent States,*

*Geochemical and Isotopic Interpretations of Groundwater Flow in the Oasis Valley Flow System, Southern Nevada,*

*Records of Wells and Test Holes in the Nevada Test Site and Vicinity (through December 1966).*

*Quality Assurance Requirements and Description*

*Regional Groundwater Flow and Tritium Transport Modeling and Risk Assessment of the Underground Test Area, Nevada Test Site, Nevada,*

*Corrective Action Investigation Plan for Corrective Action Unit 98: Frenchman Flat, Nevada Test Site, Nevada*

*Corrective Action Investigation Plan for Corrective Action Units 101 and 102: Central and Western Pahute Mesa, Nevada Test Site, Nevada,*

*Addendum to the Corrective Action Investigation Plan for Corrective Action Unit 98: Frenchman Flat, Nevada Test Site, Nevada,*

*Underground Test Area Quality Assurance Project Plan, Nevada Test Site, Nevada,*

*United States Nuclear Tests, July 1945 through September 1992,*

*Addendum to  
Revision 1 of the Corrective Action Investigation Plan for Corrective Action  
Unit 98: Frenchman Flat, Nevada Test Site, Nevada,*

*Digital Elevation Models: U.S. Geological  
Survey, National Mapping Program Technical Instructions Data Users  
Guide 5,*

*National Water Information System (NWISWeb).*

*Random Fields: Analysis and Synthesis.*

*Digital  
Geologic Map of the Nevada Test Site Area, Nevada,*

*Ground Water in the Climax Stock, Nevada Test Site, Nye  
County, Nevada*

*Ground-Water Resources - Reconnaissance  
Series Report 14*

*Alluvial Layering and Distribution of Reactive  
Phases within Drill Holes ER5/4 and UE5N of Frenchman Flat.*

*Visual  
PEST User's Manual (Includes PEST2000 & WinPEST) - Graphical  
Model-Independent Parameter Estimation.*

*The Effect of Dissolution of  
Volcanic Glass on the Water Chemistry in a Tuffaceous Aquifer, Rainier  
Mesa, Nevada,*

*Deuterium as a Tracer of Regional  
Groundwater Flow, Southern Great Basin, Nevada and California,*

*Hydrogeologic and Hydrochemical  
Framework, South-Central Great Basin, Nevada-California, with Special  
Reference to the Nevada Test Site,*

*Preliminary Tracer Experiment to  
Demonstrate Hydraulic Continuity Between Water Wells C and C-1, Yucca  
Flat, Nevada Test Site,*

*Theory, Modeling, and Field Investigation in Hydrogeology: A Special  
Volume in Honor of Shlomo P. Neuman's 60th Birthday Special Paper*

*Summary of  
Models and Methods for the FEHM Application - A Finite-Element Heat-  
and Mass-Transfer Code*

*User's  
Manual for the FEHM Application - A Finite-Element Heat- and  
Mass-Transfer Code,*



## **Appendix A**

### **Hydrostratigraphic Model Supporting Information**

## **A.1.0 Alternative Hydrostratigraphic Models**

*Hydrostratigraphic Model and Alternatives for the Groundwater Flow and Contaminant Transport Model of Corrective Action Unit 98: Frenchman Flat, Lincoln, and Nye Counties, Nevada*

**Group A- Recommended Changes to the Base Model**

**Table A.1-1**  
**Abridged List of Alternative Scenarios for the Frenchman Flat 3-D Hydrostratigraphic Model**  
 (Page 1 of 3)

Alternative	Priority Group	Comment
<b>1.0 HYDROSTRATIGRAPHY-RELATED ALTERNATIVES</b>		
<b>1.1 Alternatives to Simplify Hydrostratigraphy</b>		
1.1.1 Simplify HSUs above the water table	D <sup>a</sup>	Can HSUs in the unsaturated zone be lumped, simplified, or ignored? This would affect the outcrop area in the northern portion of the model.
1.1.2 Decrease the depth of the model	D	Is there any merit in raising the bottom of the model? Work on the regional model demonstrated that even after removing the lowest 2 km (1.2 mi) from the bottom of the model, there was no difference in the outcome compared to the original model. Conductivity below about 3,000 m may be negligible. The elevation of the bottom of the framework model is now consistent with the regional model.
<b>1.2 Alternatives to Add Hydrostratigraphic Detail</b>		
1.2.1 Differentiate units of the Lower Tuff Confining Unit (LTCU)	D	Hydraulic conductivity of the several interbedded ash-flow tuff units within the LTCU may be worth considering (e.g., the Bullfrog Tuff at ER-5-4#2).
1.2.2 Subdivide the alluvium based on relative abundance of reactive minerals	C <sup>b</sup>	Is there enough information (e.g., in Carle et al., 2002; Warren et al., 2002; Zavarin et al., 2004), and are the differences significant and/or predictable enough to warrant subdividing these units? Perhaps this should be a separate sub-CAU-scale model.
1.2.3 Subdivide the Volcaniclastic Confining Unit (VCU) in the southern portion of the model	C	Although dominated by fine-grained clastics, the VCU also includes lenses of gravel and thin freshwater carbonate beds. It might be possible to add more geologic detail (in a conceptual manner), but almost no subsurface data and no hydrologic data are available.
1.2.4 Maximize detail within 1,000 m (3,280 ft) of the water table	D	Will small differences at, or just beneath the water table make significant differences in the flow and transport modeling results (e.g., raise or lower an HSU, or, add or remove HSUs)?
1.2.6 Vary the Paleozoic stratigraphy	D	Would occurrences of the Dunderberg Shale or Eureka Quartzite alter flow in the LCA?
1.2.7 Basalt-flow geometry	A <sup>c</sup> D	a) The basalt is modeled as a continuous unit from ER-5-3 to the basin-forming faults to the east (a "worst-case scenario"). What if this basalt is dissected by erosion, faulted, or composed of separate lobes? b) How would a basalt dike affect groundwater flow? What is the geometry and nature of a basalt flow source? Can we define the hydrologic properties of such a thin tabular body?
<b>1.3 Alternatives Addressing Different Distributions for Pre-Tertiary HSUs</b>		
1.3.1a Outcrop of Paleozoic carbonate rocks; LCA versus LCA3?	D	These outcrops are currently modeled as LCA. Should/could they be LCA3?
1.3.1b Vary the occurrence of the LCA3 and UCCU	D	Could the LCA3 and UCCU be present in other parts of the model area (e.g. south of the Cane Spring fault)?
<b>2.0 STRUCTURE-RELATED ALTERNATIVES</b>		
2.1 Simplify the structural model	D	Omit all but the most profound structures and faults.
2.2 Remove faults along edge of model	D	Remove faults in the southeast corner of the model.
<b>2.3 Add More Structural Detail</b>		
2.3.1 Faults	C	Add width to faults, modifying them from simple two-dimensional surfaces to a 3-D feature having some width. Can we predict where and why they might be a barrier and/or conduit to groundwater flow?

**Table A.1-1**  
**Abridged List of Alternative Scenarios for the Frenchman Flat 3-D Hydrostratigraphic Model**  
 (Page 2 of 3)

Alternative	Priority Group	Comment
2.3.2 Add more Tertiary faults or fault zones	D	Perhaps begin by adding more of the mapped faults (shown on Slate et al. [1999] or the individual USGS quadrangle maps). (Although, most reviewers thought that structurally the model contained the appropriate level of detail.)
2.3.3 Extend the CP thrust fault south of the Cane Spring fault	D	A component of 1.3 above. The CP thrust is a poorly characterized, west-to-northwest-vergent thrust fault, that appears to be mostly outside the boundaries of the model area. Is it critical to add this complexity to the northwest corner of the model? Could the fault be elsewhere, too? See 1.3.1a and 1.3.1b.
2.3.4 Explore fault related groundwater pathways	B <sup>d</sup> (also C)	Consider increasing or decreasing fault displacements so aquifers are juxtaposed across faults. Conversely, if aquifers are juxtaposed, adjust relative fault displacement to prevent aquifer-aquifer juxtaposition. Deliberately juxtapose aquifer units across faults. Candidates for such adjustments would include the basin-forming faults in the east.
2.3.5 Other fault variations	C	Model faults as a zone with multiple planes. Typically, faults have been modeled as a single plane.
<b>2.4 Develop Different Structural Scenarios</b>		
2.4.1 Vary fault dips	C	The basin-and-range normal faults are modeled using an 75-degree dip. Varying fault dips would present more consequences in the source areas, where fault proximity to working points is important. This might be better addressed in sub-CAU-scale models.
2.4.3 Vary the depth to basement rocks	D	The uncertainty in depth to basement based on geophysical data (gravity) is roughly 300 m (1,000 ft). This may not be geologically permissible in some areas. And where it is possible, what units would be thinned or thickened?
2.4.4 Explore variations of the Cane Spring fault	B	This strike-slip fault bounds the southeast side of the CP Basin. It seems to end at the Massachusetts Mountain/CP Hogback juncture. Could it control deep inter-basin flow from Yucca Flat, or relatively shallow recharge from Barren Wash?
2.4.5 Vary the geometry/position of the Rock Valley fault	D	This northeast-southwest striking strike-slip fault is intimately related to basin formation. Does it also control groundwater flow out of Frenchman Flat?
2.4.6 Vary displacement on basin-forming faults	D	Distribute displacements along basin-forming faults along east side to better fit gravity data. The emphasis here (as apposed to 2.3.4) is to more closely match the gravity data.
<b>2.5 Other Structure-Related Alternatives</b>		
2.5.1 "Smooth" versus "rough" HSU surface	D	Computer idiosyncracies have produced "hills" and "indentations" on HSU surfaces where none were intended. Does it matter? A rough surface might better approximate the effect of faulting (not represented now in the model).
2.5.2 Consider defining basin/slopes with faults	D	The UGTA base model portrays many of the central basin gravity lows as a moncline-type structure and not half-grabens related to basin-and-range extension (e.g., northeast of the Well Cluster ER-5-4). Are there more faults (possibly hydrologically significant) that are not discernable with geophysics?
2.5.4 Explore variations of the accommodation zone between Frenchman and Yucca Flat	C	This feature appears as a gravity high between two extensional basins. How does this area effect inter-basin groundwater flow?
2.5.5 Remove the detachment fault	B	Model volcanics in the northern portion of basin as moderately dipping surfaces to the south.
<b>3.0 HYDROLOGIC ALTERNATIVES</b>		
3.1 Account for lower hydraulic heads at Water Wells 5a and 5c	B	These two wells show a significant downward gradient. This scenario will be addressed with alternative 2.3.4.

**Table A.1-1**  
**Abridged List of Alternative Scenarios for the Frenchman Flat 3-D Hydrostratigraphic Model**  
 (Page 3 of 3)

Alternative	Priority Group	Comment
3.2 Consider effect on the CAU boundary of contaminated water flowing into Frenchman Flat from Yucca Flat	<b>C</b>	Model the case in which contaminated water is already present in the regional carbonate aquifer, and is flowing into the Frenchman Flat CAU from Yucca Flat.
3.3 Consider the effect of significant groundwater flux from the northwest	<b>C</b>	Groundwater levels in CP Basin are considerably higher than in Yucca or Frenchman Flat. Model the inflow of significant uncontaminated water from the CP basin northwest of Frenchman Flat (ultimately from Mid Valley via Barren Wash).
3.4 Consider the effect of significant groundwater from the east	<b>C</b>	The Phase I Regional Model indicates significant interbasin flow from the east and into Frenchman Flat. Model the inflow of significant uncontaminated water from the east (e.g., Pahrnagat Valley).

<sup>a</sup>Suggested alternatives that were deemed to be of low priority or not necessary to make at this time.

<sup>b</sup>Proposed alternatives that would be better addressed during the hydro modeling phase rather than as alternatives to the geologic framework model.

<sup>c</sup>Recommended and implemented changes to the base model.

<sup>d</sup>Viable alternative scenarios.

### **Group B - Viable Alternative Scenarios**

### **Group C - Alternatives to Address During the Hydrologic Modeling**



## A.2.0 References

*A Hydrostratigraphic Model and Alternatives for the Groundwater Flow and Contaminant Transport Model of Corrective Action Unit 98: Frenchman Flat, Lincoln, and Nye Counties, Nevada.*

*Geostatistical Analysis of Spatial Variability of Mineral Abundance and Kd in Frenchman Flat, NTS, Alluvium,*

*Digital Geologic Map of the Nevada Test Site and Vicinity, Nye, Lincoln, and Clark Counties, Nevada, and Inyo County, California,*

*Alluvial Layering and Distribution of Reactive Phases Within Drill Holes ER5/4 and UE5N of Frenchman Flat,*

*Upscaling Radionuclide Retardation – Linking the Surface Complexation and Ion Exchange Mechanistic Approach to a Linear Kd Approach,*



**Appendix B**  
**Well Discharge Data**

## ***B.1.0 Introduction***

## ***B.2.0 Data Presentation***

( ) / ( )

## **B.3.0** Access to Data

## **B.4.0** References

*Water Quality and Physical Characteristics of Nevada Test Site Water Supply Wells,*

*Estimated  
Ground-Water Withdrawals from the Death Valley Regional Flow System,  
Nevada and California, 1913-98,*



## **Appendix C**

### **Hydraulic-Head Dataset**



## **C.3.0** *Access to Data*

## **C.4.0** *References*



## **Appendix D**

### **Well Construction Diagrams**

## ***D.1.0 Introduction***

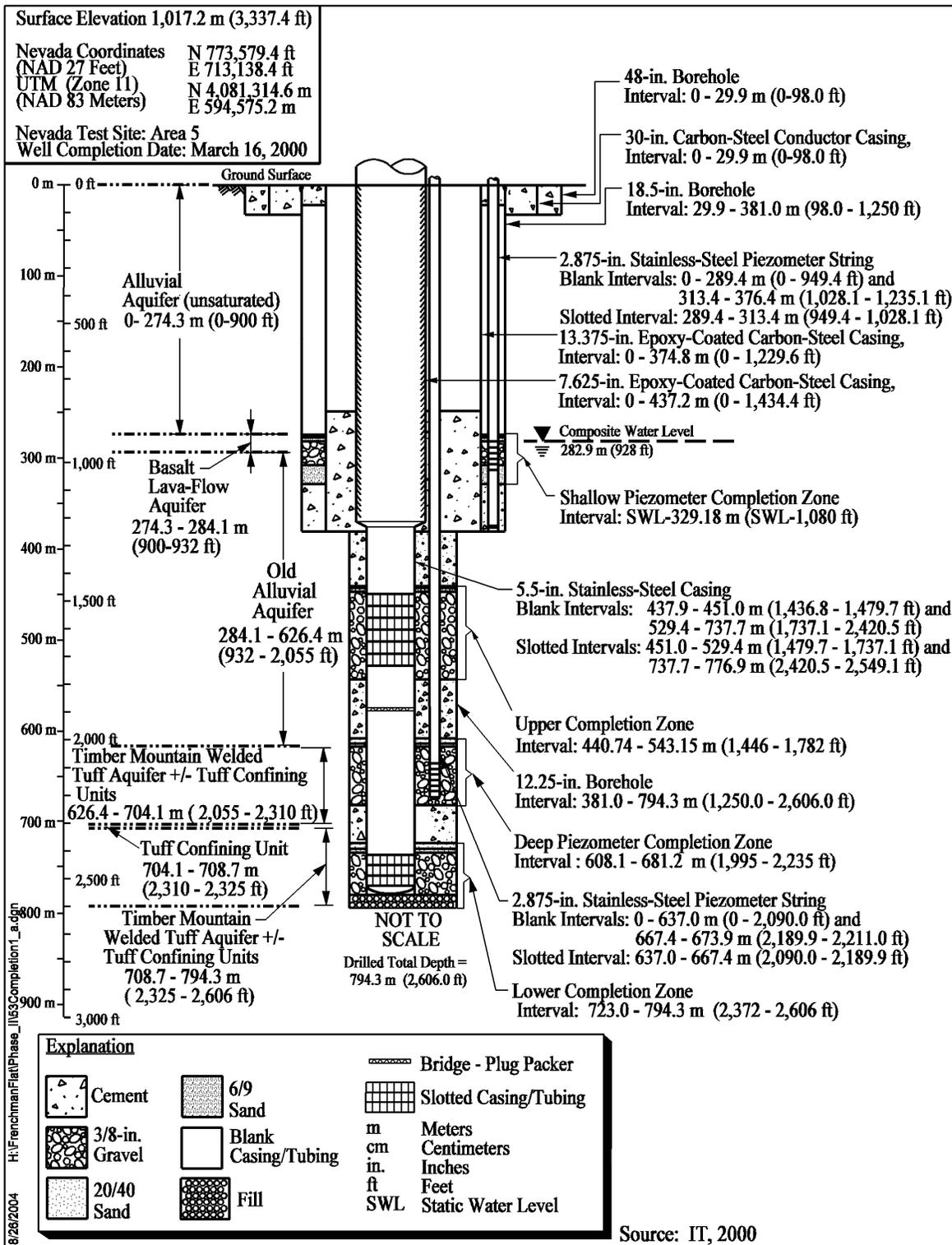


Figure D.1-1  
Well ER-5-3 Completion Diagram

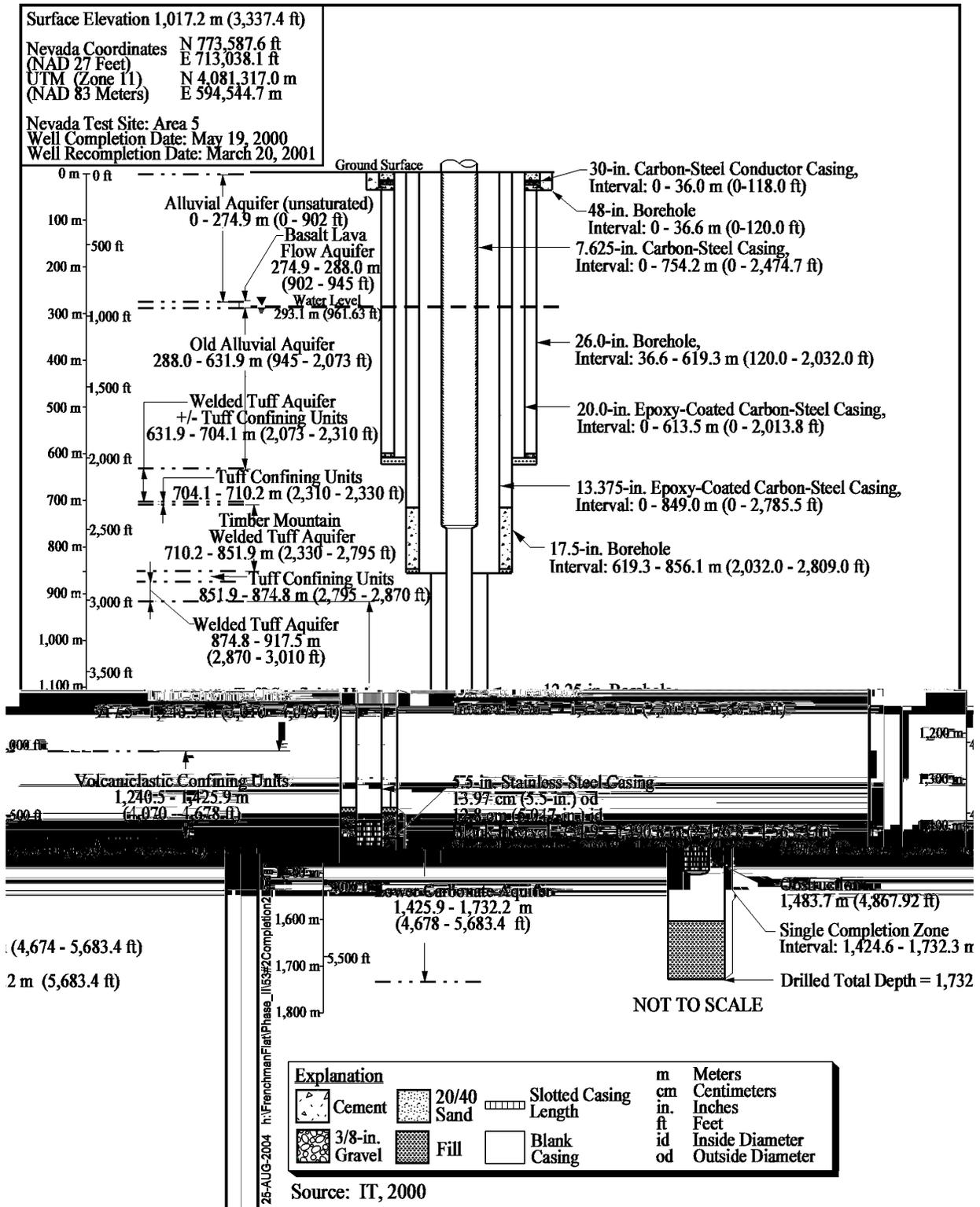


Figure D.1-2  
 Well ER-5-3 #2 Completion Diagram

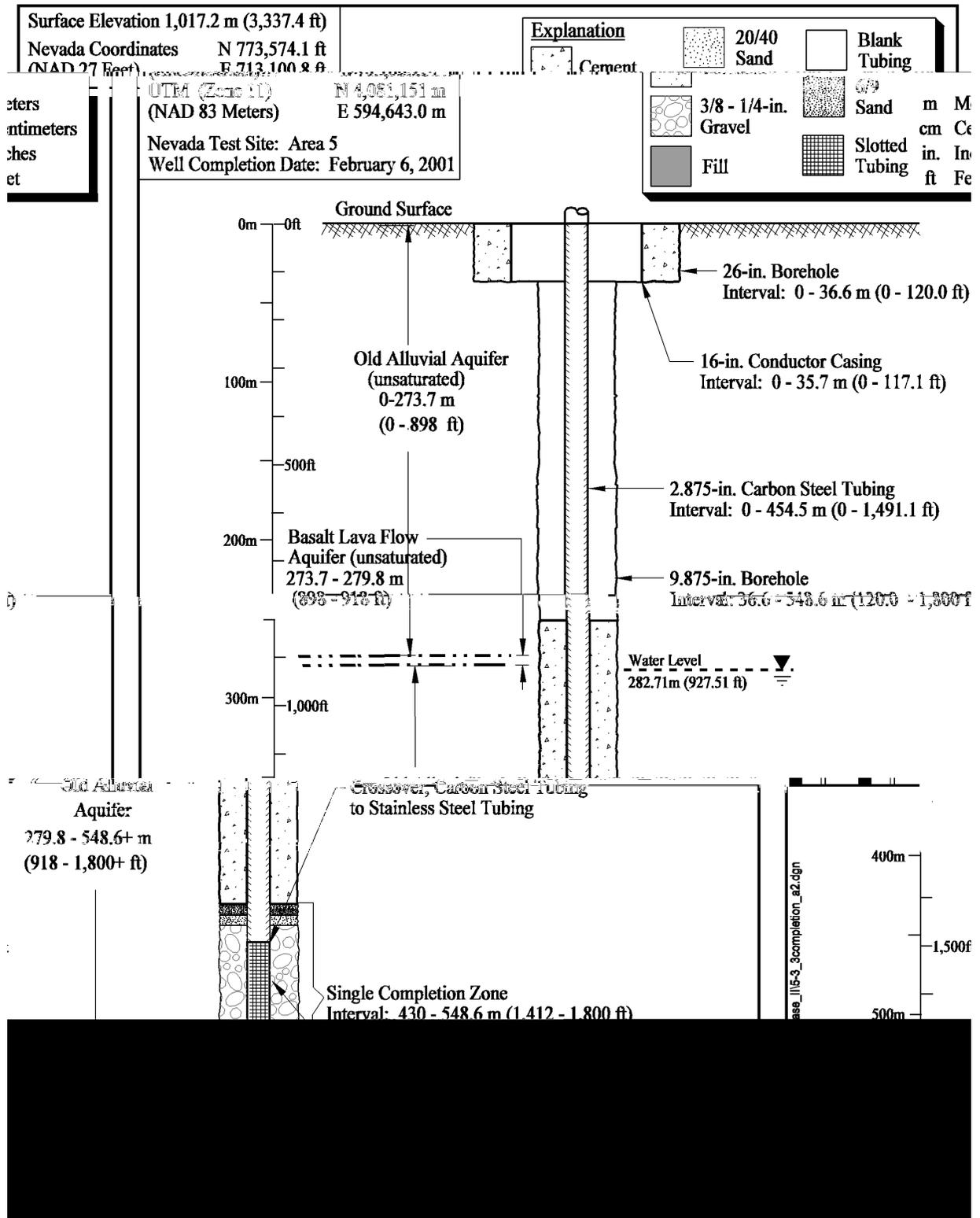


Figure D.1-3  
Well ER-5-3 #3 Completion Diagram

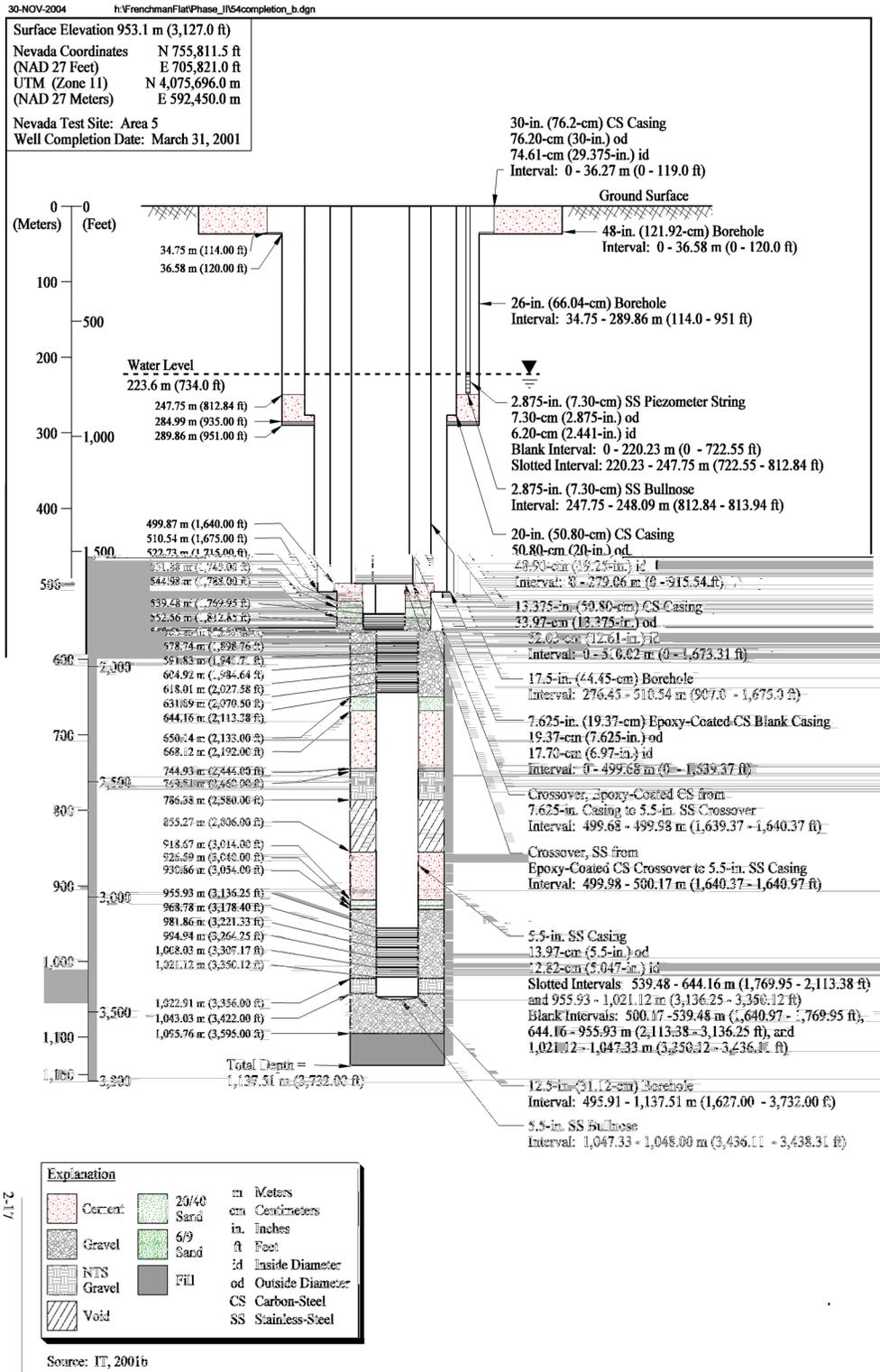
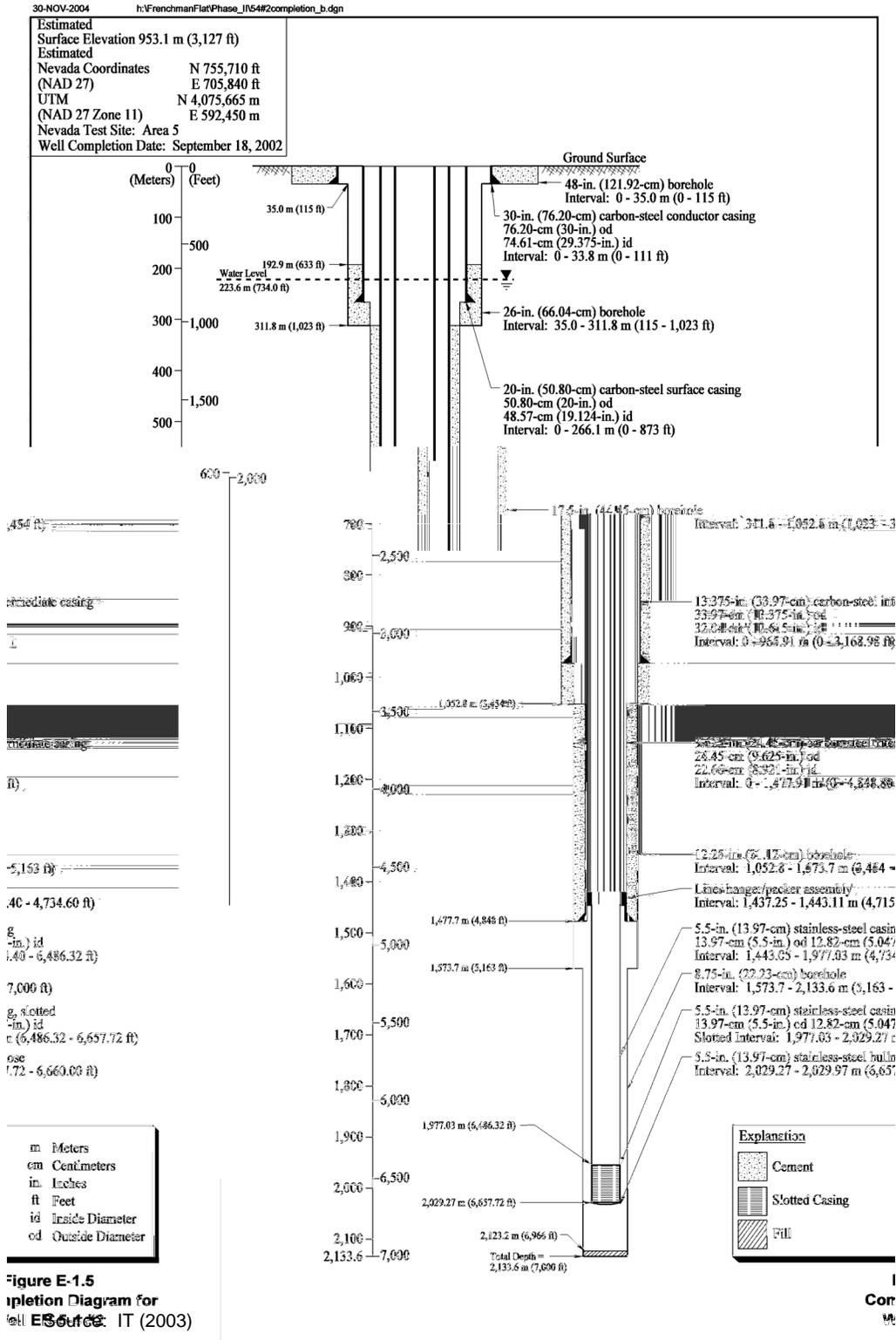


Figure D.1-4  
Well Completion Diagram for Well ER-5-4



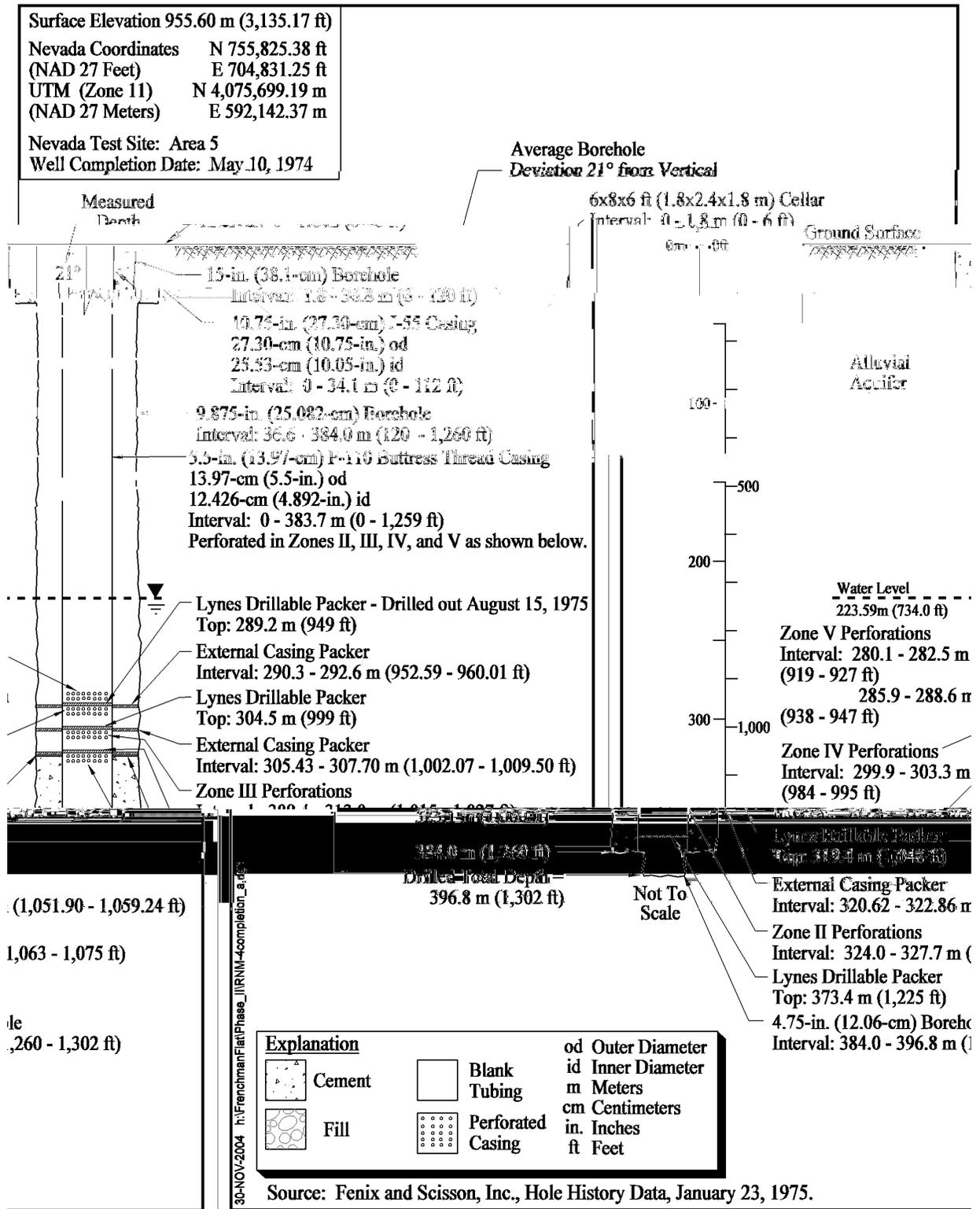


Figure D.1-6  
Well Completion Diagram for Well RNM-1

Surface Elevation 953.66 m (3,128.80 ft)  
 Nevada Coordinates N 755,264.43 ft  
 (NAD 27 Feet) E 705,088.20 ft  
 UTM (Zone 11) N 4,075,528.53 m  
 (NAD 27 Meters) E 592,221.27 m  
 Nevada Test Site: Area 5  
 Well Completion Date: August 2, 1974

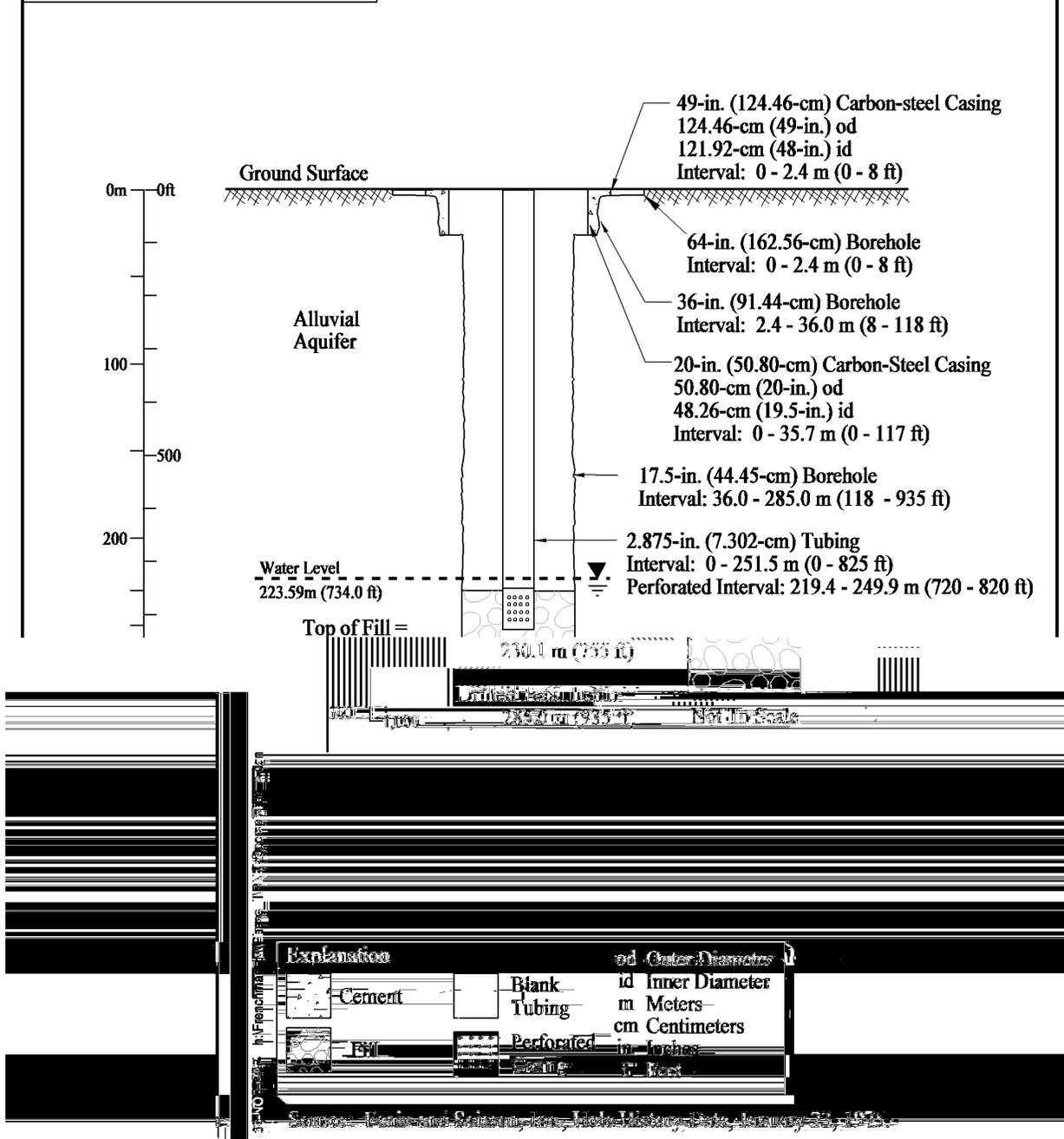


Figure D.1-7  
 Well Completion Diagram for Well RNM-2

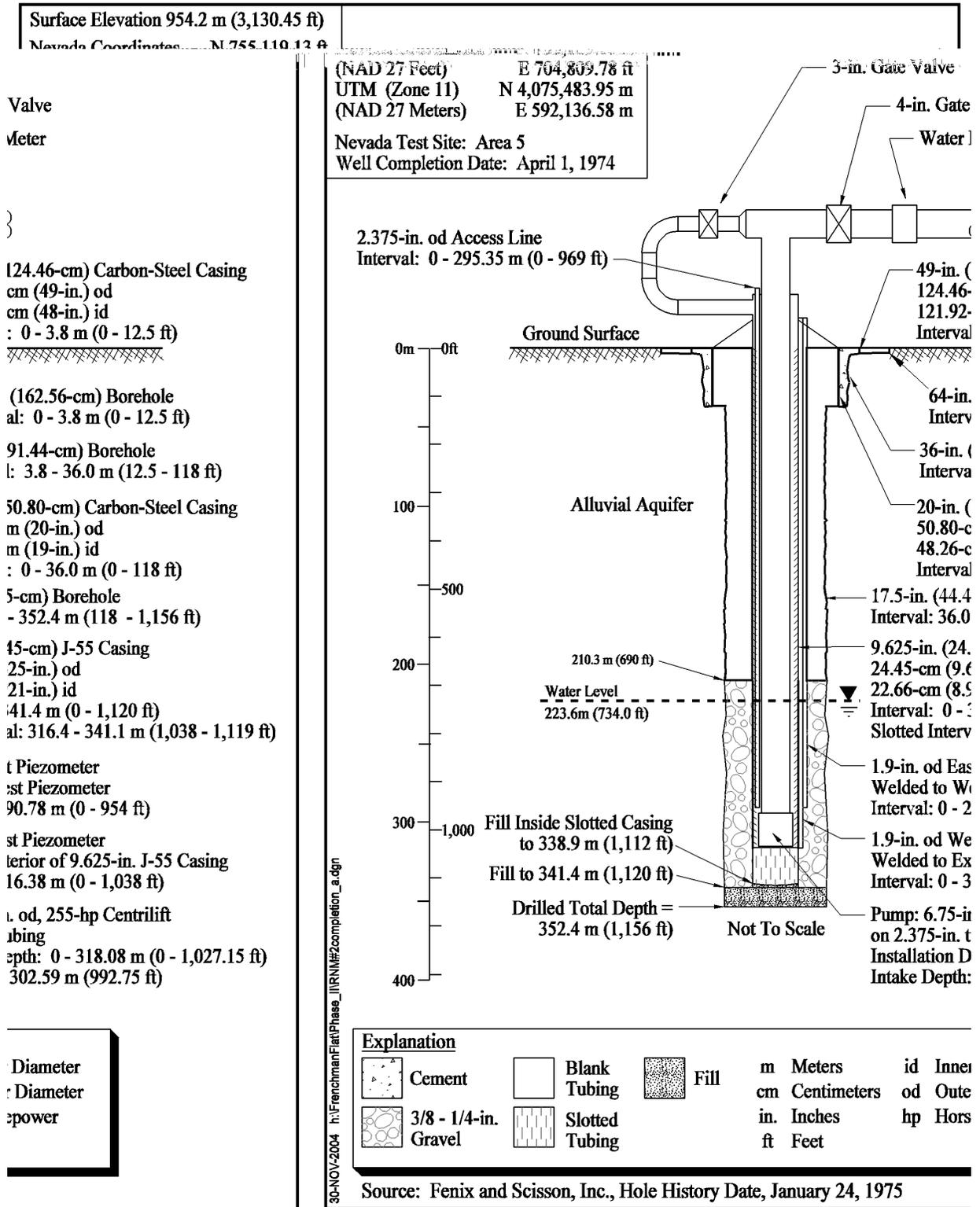
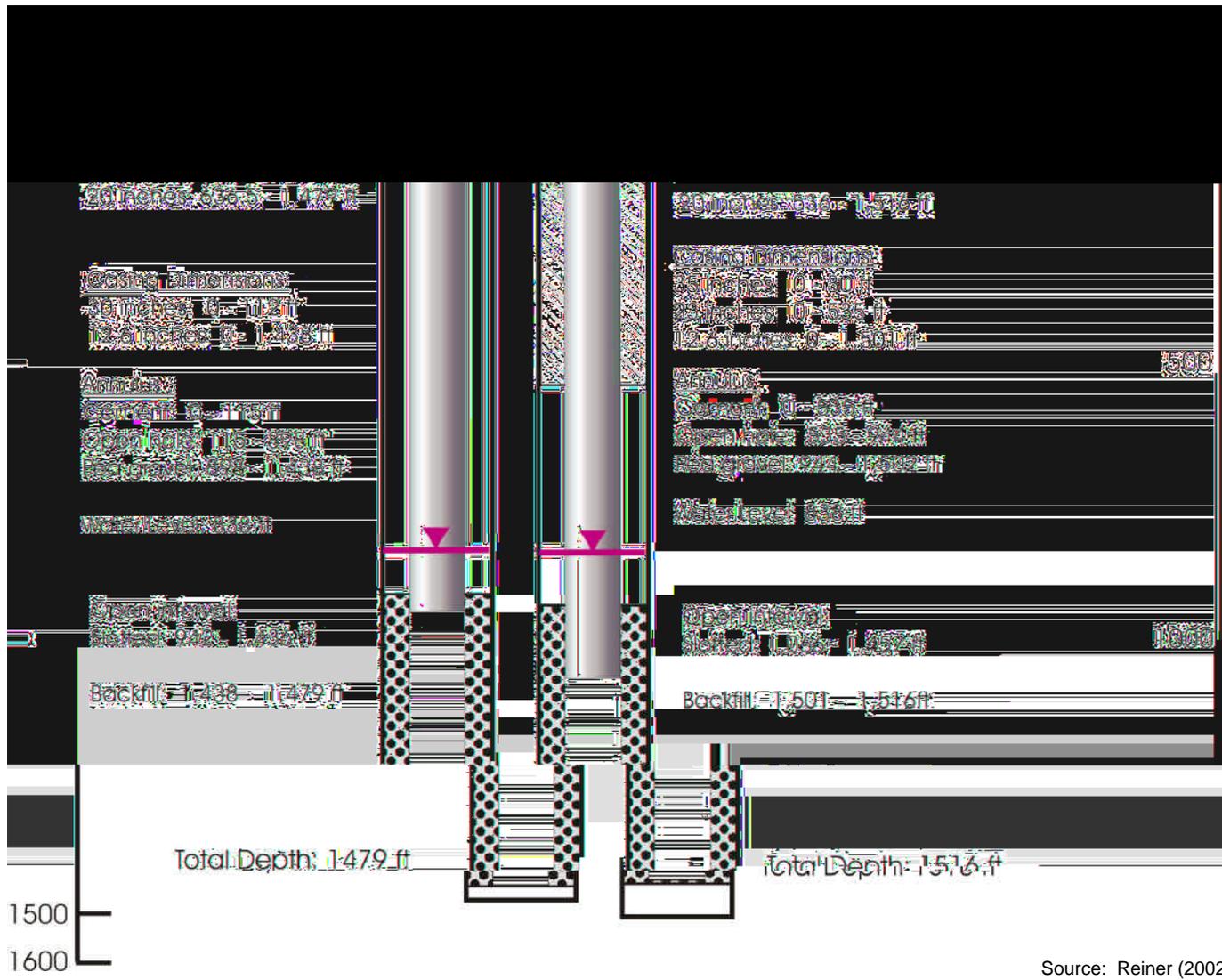
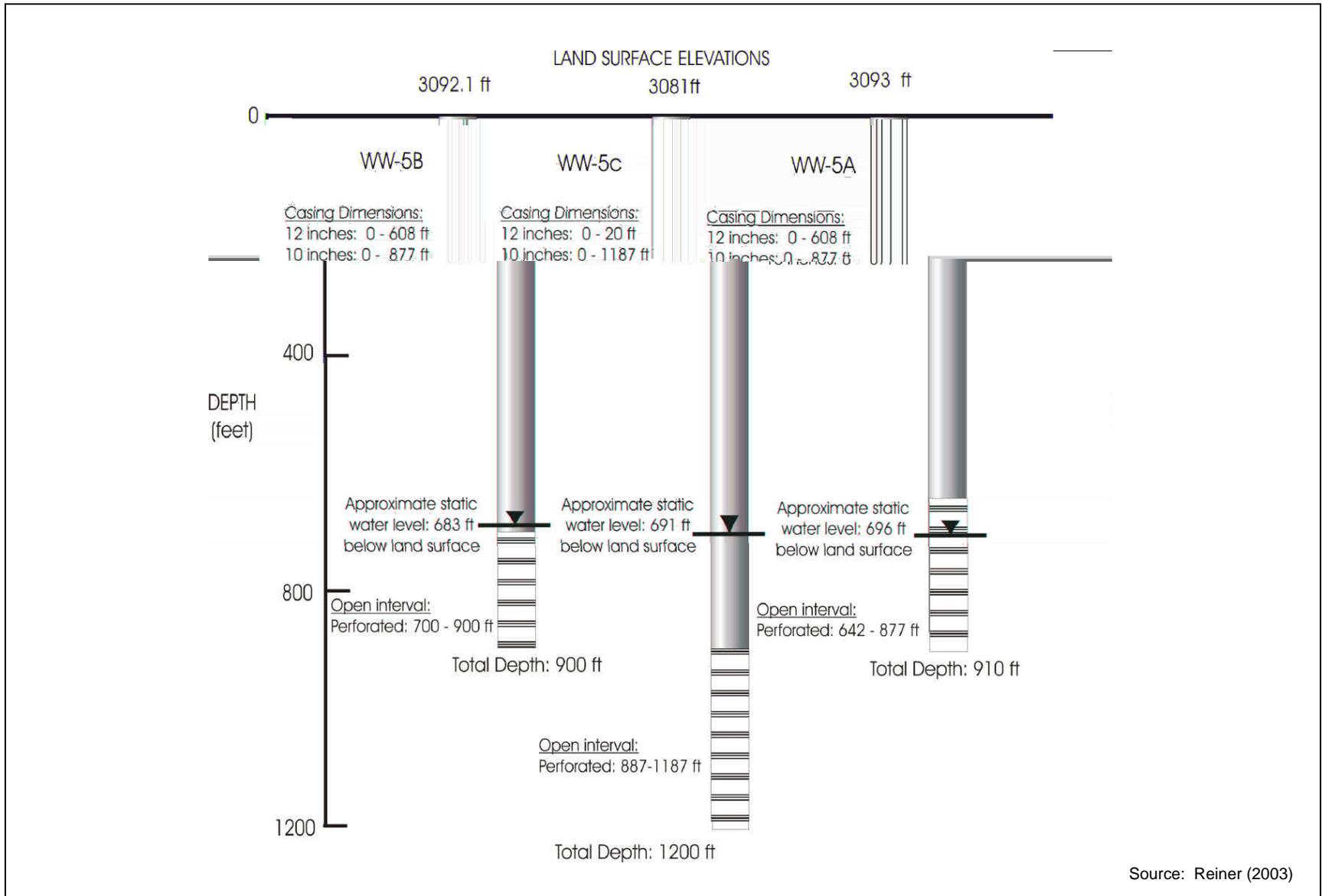


Figure D.1-8  
 Well Completion Diagram for Well RNM-2S



Source: Reiner (2002)

Figure D.1-9  
Well Completion Diagram for Wells WW4 and WW-4A



**Figure D.1-10**  
**Well Completion Diagrams for Wells WW-5A, WW-5B, and WW-5C**

## **D.2.0** References

*Hole History Data.*

*Frenchman Flat Well Cluster ER-5-3 and ER-5-3 #2 Data  
Report,*

*Addendum to the Frenchman Flat Well Cluster ER-5-3 #3  
Data Report,*

*Frenchman Flat ER-5-4 Well Data Report,*

*Frenchman Flat ER-5-4 #2 Well Data Report,*

*Aquifer-Test Report for WW-4A, Area 6, Nevada Test Site.*

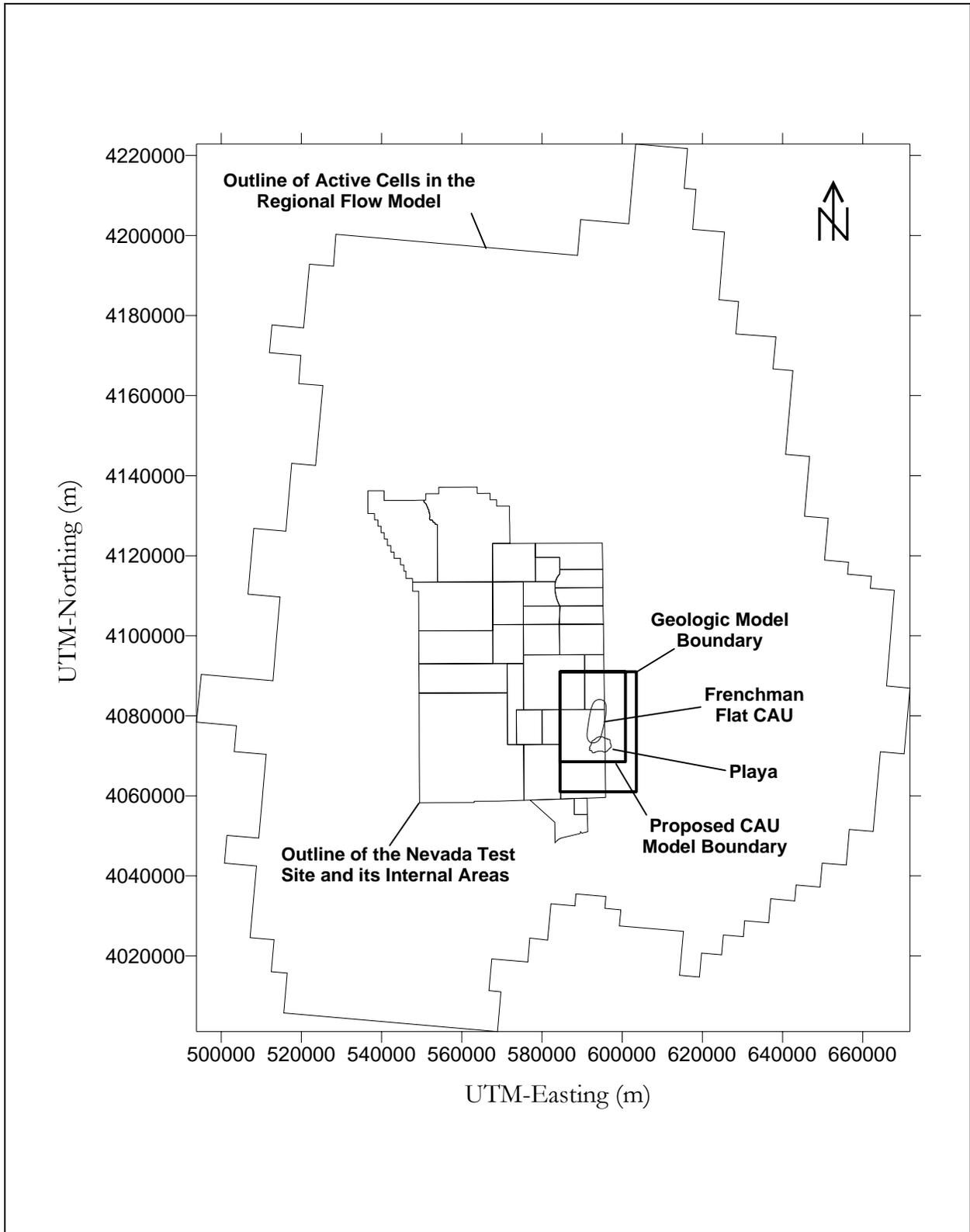
*Aquifer-Test Report for WW-5C, Area 5, Nevada Test Site.*



## **Appendix E**

### **Boundary Flux Calculations**

## ***E.1.0 Introduction***



**Figure E.1-1**  
**Geologic and Proposed CAU Model Boundaries**

**Table E.1-1  
Model Layer Elevations and Thickness**

Layer	Basal Elevation (ft amsl)	Thickness (ft)
1	1,750	250
2	1,500	250
3	1,350	150
4	1,200	150
5	1,050	150
6	900	150
7	825	75
8	775	50
9	700	75
10	550	150
11	350	200
12	250	100
13	150	100
14	50	100
15	-250	300
16	-450	200
17	-850	400
18	-1230	380
19	-1500	270
20	-2000	500
21	-3000	1,000
22	-4000	1,000

---

## ***E.2.0 Models Evaluated in the Calibration Process***

### ***E.2.1 Hydrostratigraphic Model Alternatives***

### ***E.2.2 Recharge Distribution Models***

**Table E.2-1  
Recharge Model Flux Rates**

<b>Recharge Model Name</b>	<b>Recharge Model</b>	<b>Recharge Rate (m<sup>3</sup>/d)</b>
R1	UGTA Original Regional	220,000
R2	UGTA Revised Regional	212,000
R3	DRI alluvial mask	275,000
R4	DRI – alluvial and elevation mask	268,000
R5	USGS – with redistribution	173,000
R6	USGS – no redistribution	143,000

### E.2.3 Models Calibrated

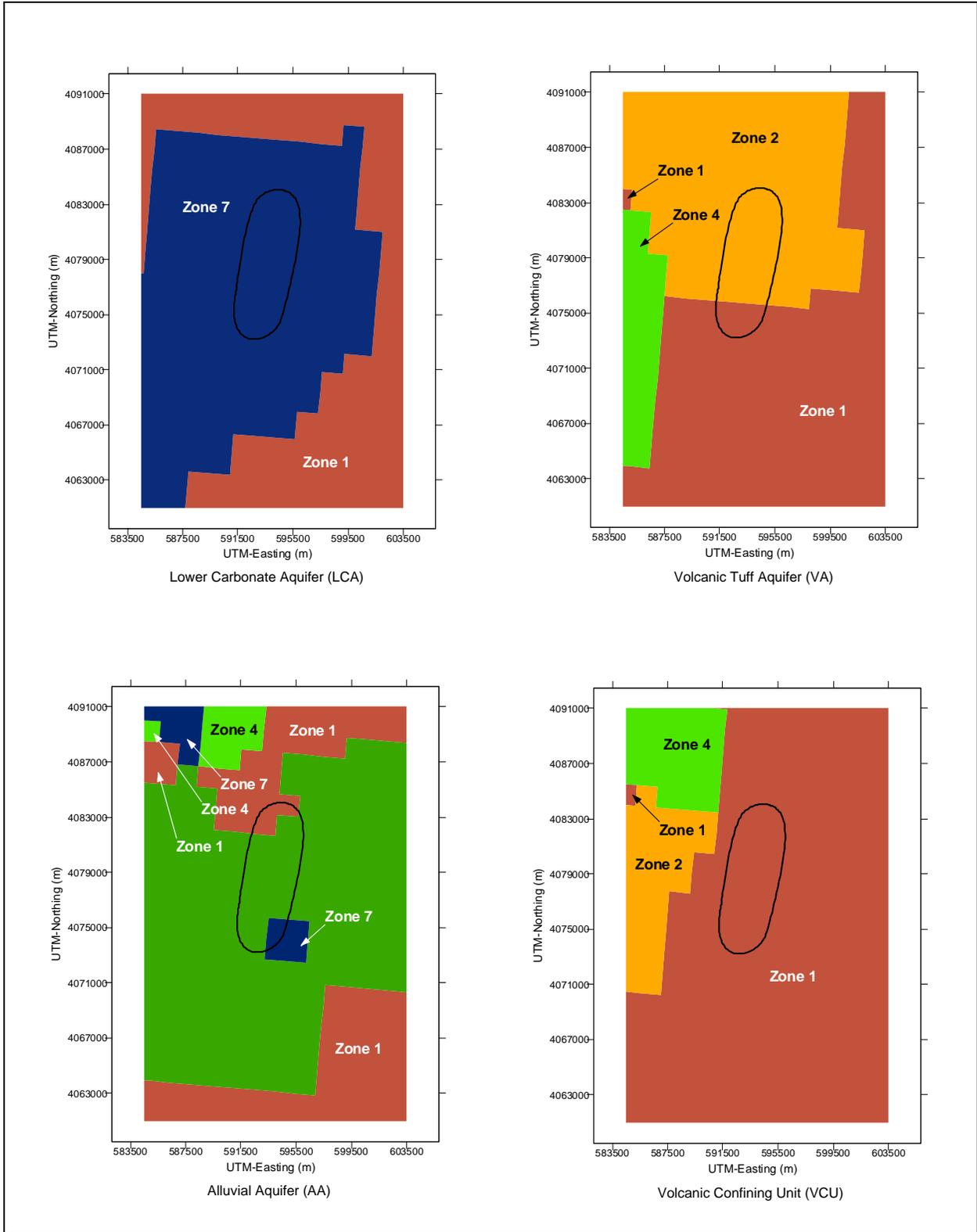
**Table E.2-2**  
**Model Designations for the 30 Combinations of Hydrostratigraphic and Recharge Models**

HSU Model		Recharge Model					
		UGTA Original R1	UGTA Revised R2	DRI - Alluvial Mask R3	DRI - Alluvial and Elevation Mask R4	USGS - No Redistribution R5	USGS - Redistribution R6
Base	G0	G0R1	G0R2	G0R3	G0R4	G0R5	G0R6
Aquifer Juxtaposition Alternative	G1	G1R1	G1R2	G1R3	G1R4	G1R5	G1R6
More Extensive Basalt Flow Alternative	G2	G2R1	G2R2	G2R3	G2R4	G2R5	G2R6
No Detachment Fault Alternative	G3	G3R1	G3R2	G3R3	G3R4	G3R5	G3R6
CP Basin Alternative	G4	G4R1	G4R2	G4R3	G4R4	G4R5	G4R6

## ***E.3.0 Calibration Process***

**Table E.3-1**  
**Vertical Anisotropy Factors and Depth Decay Coefficients**  
**for Frenchman Flat HSUs**

HSU Name	HSU Description	Zone	Anisotropy	Lambda
AA	Alluvial Aquifer	1,4,5	0.22	0.00563
		7	0.016	0.00563
PCU2T	Playa Confining Unit		0.01	0.00563
PCU2B	Alluvial Aquifer		0.01	0.00563
OAA1	Older Altered Alluvial Aquifer		0.22	0.00563
BLFA	Basalt Lava Flow Aquifer		0.02	0.0026
PCU1U	Older Playa Confining Unit - Upper		0.01	0.00563
AA1	Alluvial Aquifer		0.22	0.00563
OAA	Older Altered Alluvial Aquifer		0.22	0.00563
PCU1L	Older Playa Confining Unit - Lower		0.01	0.00563
VA	Volcanic Tuff Aquifer	1,2	0.02	0.0026
		4	0.002	0.0026
TMLVTA	Timber Mountain Lower Vitric Tuff Aquifer		0.08	0.0026
UTCU	Upper Tuff Confining Unit		0.01	0.0026
TSA	Topopah Spring Aquifer		0.08	0.0026
LVTA	Lower Vitric Tuff		0.08	0.0026
VCU	Volcanic Confining Unit	1,4	0.01	0.0026
		2	0.002	0.0026
WCU	Wahmonie Confining Unit		0.01	0.0026
LTCU1	Lower Tuff Confining Unit		0.01	0.0026
VCUff	Volcaniclastic Confining Unit		0.01	0.0026
LCA3	Lower Carbonate Aquifer		0.02	0.001
UCCU	Upper Clastic Confining Unit		0.01	0.00102
LCA	Lower Carbonate Aquifer	1,7	0.015	0.001
LCCU	Lower Clastic Confining Unit		0.01	0.00102



**Figure E.3-1**  
**Property Zone Maps for Frenchman Flat HSUs**



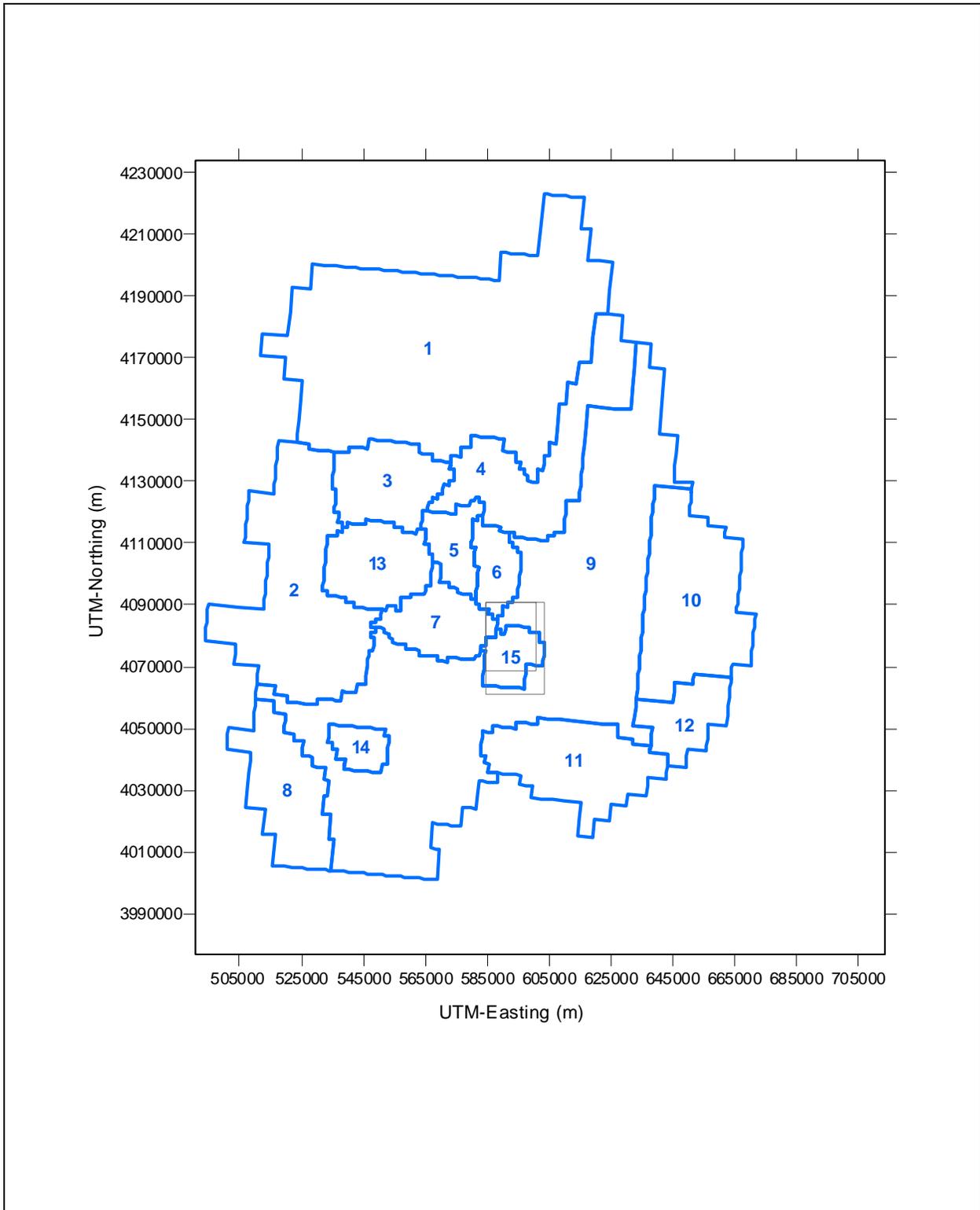
**Table E.3-2**  
**Calibration Criteria for Weighted**  
**Hydraulic Head Residuals by Zone (DOE/NV, 1997)**

Zone	Area	Mean Weighted Residual (m)	Root Mean Square of Weighted Residuals (m)	Range in Measured Heads (m)
	All	20	100	1687
1	Northern Area	100	150	203
2	Oasis Valley	15	75	534
3	Pahute Mesa	25	35	231
4	Barrier	300	350	565
5	W Yucca Flat	45	110	632
6	E Yucca Flat	35	80	101
7	Shoshone	20	50	286
8	Death Valley	80	100	728
9	Lower Carbonate Aquifer	5	40	205
10	SW of Pahranaagat Valley	40	40	15
11	Spring Mountain	150	150	279
12	Sheep Range	100	100	40
13	Timber Mountain	100	100	221
14	Amargosa Farm	10	50	58
15	Frenchman Flat	10	50	21

**Table E.3-3**  
**Calibration Target Range for Model-Area Discharge**  
(SNJV, 2004)

Discharge Area	Total Discharge Range (m <sup>3</sup> /d)
Death Valley	17,500 – 60,200
Oasis Valley	14,089 – 30,152
Amargosa River	2,400 – 5,100
Ash Meadows	33,484 – 95,527
Franklin Lake/Alkali Flats	800 – 42,600
Alkali Flat (Peter's Playa)	5,000 – 7,300
Penoyer Valley	13,000 – 27,000
Indian Springs	1,600 – 2,400
Pahrump Valley	(5,000) – (7,600)
Eagle Mountain	850 – 3,400

Brackets denotes inflow



**Figure E.3-2**  
**Map of Residual Zones**

## ***E.4.0 Calibration Results***

**Table E.4-1  
Root Mean Square (m) of Weighted Residuals for Individual Residual Zones and Combined Zones**

Model Name	All	Northern Area	Oasis Valley	Pahute Mesa	Barrier	Western Yucca Flat	Eastern Yucca Flat	Shoshone	Death Valley	Lower Carbonate Aquifer	Southwest of Pahranaagat Valley	Spring Mountain	Sheep Range	Timber Mountain	Armagosa Farm	Frenchman Flat
G0R1	49.3	59.5	55	28.9	126.5	137.4	36.7	159.3	27.2	16	55.5	47.4	30.7	32	6.3	2.7
G0R2	52.5	69.5	62.2	39.3	133.9	152.1	25	167.9	39	11.5	71.4	43.7	15.5	38.6	5.2	4.2
G0R3	56	74.3	51.7	27.7	123.4	185.7	37	151.2	29.4	20	23.5	48.4	43.5	30.3	10.1	2.8
G0R4	56.1	73.4	50	28.3	127.9	187.2	25.6	137.7	32.6	29.4	11.5	51.2	29.1	54.9	6.8	2.6
G0R5	44.9	59	58.8	33.6	133.8	97.8	23.5	159.4	30.1	15.4	83.1	52.2	23.5	38.4	5.1	2.8
G0R6	67.6	70.2	75.6	47.7	159.1	209.1	32.6	181.7	24.6	12.4	25.8	86.9	46.9	81.2	6.9	9.5
G1R1	49.5	59.5	55	28.9	126.6	139.6	36.7	157.7	27.2	16	55.6	47.3	30.7	32	6.3	2.7
G1R2	52.1	69.6	62.2	39.3	134.9	146.7	25.1	174	39	11.5	71.4	43.7	15.5	38.6	5.2	4.2
G1R3	57.9	74.8	51.6	27.3	123.6	198.7	36.1	150.1	29.3	20.3	23.5	48.5	43.5	31.4	10	2.9
G1R4	47.4	73.6	50.3	28.7	143.6	111.6	27.8	139	33	28.4	11.6	51.2	29	60	6.8	2.5
G1R5	45.1	59	58.8	33.6	133.3	100.1	23.5	158.4	30.1	15.4	83.1	52.2	23.5	38.3	5.1	2.8
G1R6	70.8	70.6	75.6	47.2	161.9	229.8	33.3	181.1	24.6	12.4	25.8	86.9	46.9	81.6	6.9	9.4
G2R1	48.2	59.5	55	28.9	126.5	128.7	36.7	157.8	27.2	16	55.5	47.3	30.7	32.1	6.3	2.7
G2R2	52.5	69.6	62.2	39.3	134.8	150.5	25.1	174	39	11.5	71.4	43.7	15.5	38.7	5.2	4.2
G2R3	52	74.1	51.7	27.3	126.4	164.6	27.8	150.7	29.4	20	23.4	48.5	43.4	31.8	10.1	2.7
G2R4	48.3	73.8	50.2	29	141.9	123.1	24.8	136.7	32.6	29.4	11.4	51.2	29	59.5	6.8	2.4
G2R5	45.1	59	58.8	33.6	133.3	100.1	23.5	158.4	30.1	15.4	83.1	52.2	23.5	38.3	5.1	2.8
G2R6	61.3	69.7	75.6	46.2	151.1	165.8	33.2	181.3	24.6	12.4	25.8	86.9	46.9	81.3	6.9	9.5
G3R1	47.4	59.4	55	28.9	126.7	132.7	27	157.7	27.2	16	55.5	47.3	30.7	32	6.3	2.7
G3R2	52.7	69.5	62.2	39.3	133.9	152.1	25	174	39	11.5	71.4	43.7	15.5	38.6	5.2	4.2
G3R3	55.3	74.3	51.7	27.6	122.3	179.2	39.9	150.4	29.4	20	23.4	48.5	43.4	29.6	10.1	2.9
G3R4	46.7	73.4	50.1	28.1	124.5	121.5	23.2	137.7	32.6	29.2	11.2	51.3	29.4	56.2	6.6	2.7
G3R5	44.8	59.1	58.8	33.6	134	97.2	23.6	158.3	30.1	15.5	83.1	52.2	23.5	38.2	5.1	2.8
G3R6	57.7	69.5	75.6	46.1	151.3	135.8	32.3	181.4	24.6	12.4	25.8	86.9	46.9	81.1	6.9	9.5
G4R1	47.5	59.4	55	28.9	126.7	133.5	27	157.7	27.2	16	55.5	47.3	30.7	32	6.3	2.7
G4R2	52.7	69.5	62.2	39.3	133.9	152.1	25	174	39	11.5	71.4	43.7	15.5	38.6	5.2	4.2
G4R3	55.2	74.3	51.8	27.4	122.7	183.4	33.9	150.6	29.5	20.1	23.4	48.5	43.3	31.3	10.2	2.9
G4R4	52.5	73.5	50	28.5	132.8	159.6	27.7	136.4	33	29.8	11.3	51.2	29.1	50.9	6.8	2.4
G4R5	44.9	59	58.8	33.6	133.8	97.7	23.5	158.4	30.1	15.4	83.1	52.2	23.5	38.4	5.1	2.8
G4R6	57.8	68.6	75.6	45.8	154.2	135.2	32.4	181.4	24.6	12.4	25.8	86.9	46.9	80.8	6.9	9.5

**Table E.4-2  
Mean Weighted Residuals (m) for Individual Residual Zones and Combined Zones**

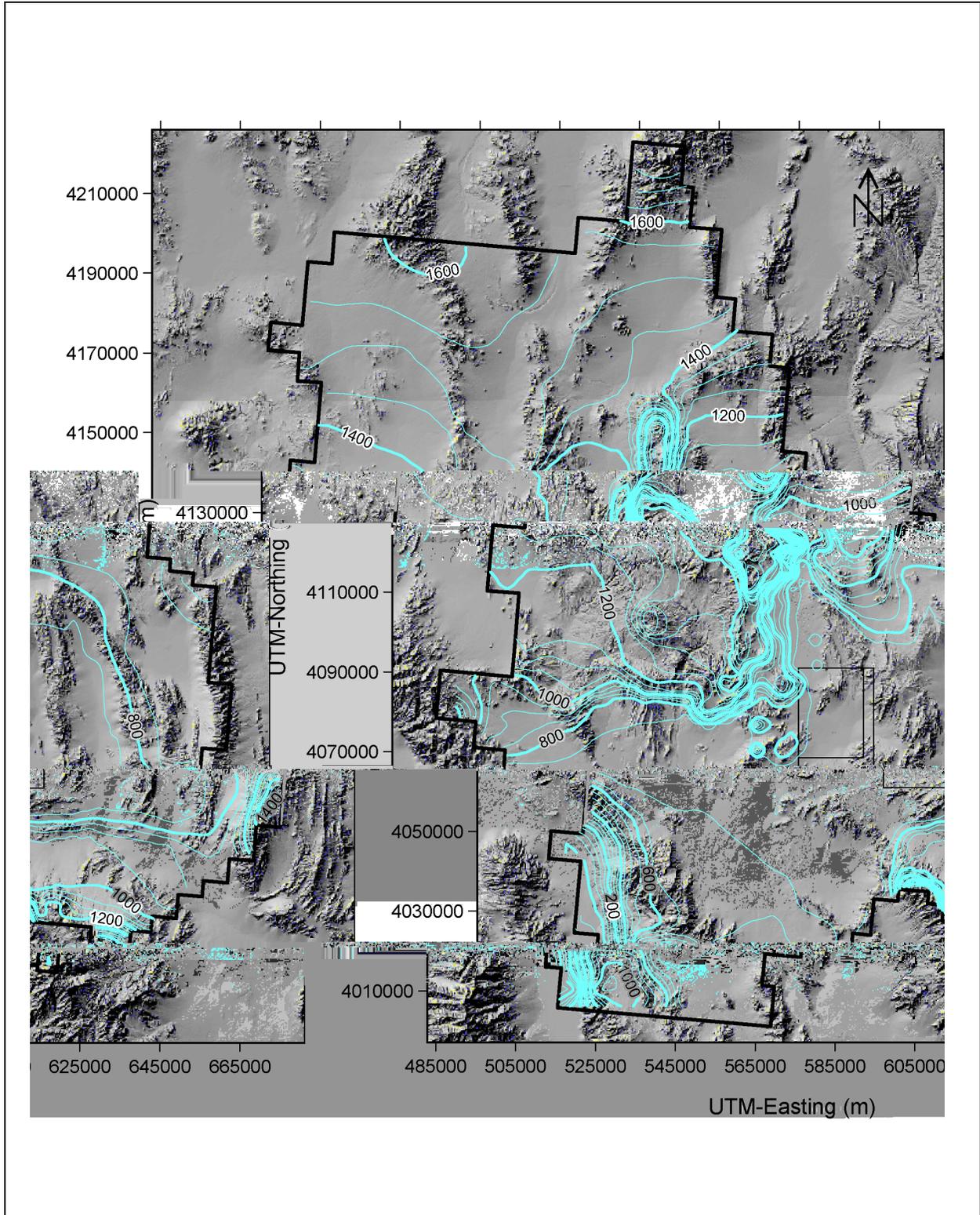
Model Name	All	Northern Area	Oasis Valley	Pahute Mesa	Barrier	Western Yucca Flat	Eastern Yucca Flat	Shoshone	Death Valley	Lower Carbonate Aquifer	Southwest of Pahrangat Valley	Spring Mountain	Sheep Range	Timber Mountain	Armagosa Farm	Frenchman Flat
G0R1	5.4	-0.1	26.3	8.8	72.4	-2.5	-3.3	119.4	-14.9	-1.7	56.3	14	30.9	-15.5	-2.6	0.5
G0R2	13.1	10.2	32.5	8.6	100.7	109.9	3.3	112.6	-21.5	2	72.2	-7.2	11.4	6.3	-1	3.3
G0R3	-5.6	-21.5	19.3	-5.1	67.3	-91.3	-13.1	124	-5.4	-4.4	23.6	-13.2	44.4	2.7	-8.9	-1.8
G0R4	6.6	-23	12.2	4.6	59.2	128.1	1.8	116.3	-22.5	-8.8	-8.4	16.8	29.8	40	-4.9	1
G0R5	11.9	6.7	35.6	15.5	93	49.5	3	120.1	-7.6	0.8	-82.3	13	-12.2	22.6	-0.4	1.8
G0R6	18.9	42.3	54.2	33.1	136.1	-83.9	14.6	134.5	2.5	4.8	26.2	68.4	48.9	58.1	-4	9
G1R1	5.3	-0.1	26.3	8.7	72.4	-4	-3.3	116.2	-14.9	-1.7	56.3	14	30.9	-15.7	-2.6	0.5
G1R2	13	10.3	32.5	8.8	102	103.1	3.1	134.7	-21.5	2	72.2	-7.2	11.4	6.4	-1	3.3
G1R3	-6.5	-20.3	18.9	-2	77	-118	-15.9	122.6	-5.3	-4.6	23.6	-13.3	44.3	5.1	-8.8	-1.9
G1R4	2.6	-21.6	12.9	5.5	44.6	55.6	-5.8	117.1	-23.7	-8.3	-8.4	16.7	29.6	45.4	-4.9	0.8
G1R5	11.9	6.8	35.6	15.4	92.2	52.1	3.1	118.3	-7.6	0.8	-82.2	13	-12.2	22.5	-0.4	1.8
G1R6	18.3	42.9	54.2	32.2	138.7	-99.2	14.6	132.9	2.5	4.8	26.3	68.4	48.9	58.7	-4	8.9
G2R1	5.7	-0.1	26.3	8.7	72.3	5.7	-3.3	116.4	-14.9	-1.7	56.3	14	30.9	-15.8	-2.6	0.5
G2R2	13.2	10.3	32.5	8.8	101.8	108	3	134.7	-21.5	2	72.1	-7.2	11.3	6.5	-1	3.3
G2R3	-1.2	-22.6	19.1	-4.6	64.1	-7.3	-6.3	123.2	-5.4	-4.4	23.5	-13.3	44.3	6.1	-9	-1.7
G2R4	3.7	-22.2	12.4	6.1	47.1	73.9	-2.9	114.1	-22.5	-8.8	-8.3	16.7	29.7	45.2	-4.9	0.5
G2R5	11.9	6.8	35.6	15.4	92.2	52	3.1	118.3	-7.6	0.8	-82.3	13	-12.2	22.5	-0.4	1.8
G2R6	20.2	42	54.2	30.4	117.9	-40.9	16.8	133.4	2.5	4.8	26.2	68.5	48.9	58.4	-4.1	9
G3R1	5.4	-0.2	26.2	8.6	71.8	-13.8	-0.1	116.1	-14.9	-1.7	56.3	14	30.9	-15.7	-2.6	0.5
G3R2	13.3	10.2	32.5	8.6	100.7	109.9	3.3	134.7	-21.5	2	72.2	-7.2	11.4	6.3	-1	3.3
G3R3	-6.2	-21.5	19.3	-5.7	70.8	-95.5	-15.1	122.9	-5.4	-4.4	23.5	-13.3	44.3	0.9	-9	-1.9
G3R4	4.6	-23	12.5	5.6	74.3	64.9	0.9	116.1	-22.5	-8.6	-8	17.1	30.1	41.4	-4.7	1.3
G3R5	11.7	6.7	35.6	15.4	93.3	44.9	3.2	118.1	-7.6	0.8	-82.3	13	-12.2	22.2	-0.4	1.8
G3R6	24.5	41.6	54.2	29.7	122.5	51.5	21.1	134	2.5	4.8	26.3	68.5	48.9	58.5	-4	9
G4R1	5.4	-0.2	26.2	8.6	71.8	-14	-0.1	116.1	-14.9	-1.7	56.3	14	30.9	-15.7	-2.6	0.5
G4R2	13.3	10.2	32.5	8.6	100.7	109.9	3.3	134.7	-21.5	2	72.2	-7.2	11.4	6.3	-1	3.3
G4R3	-5.8	-20.8	18.5	-4.8	70.3	-96.5	-13.1	123	-5.4	-4.5	23.4	-13.3	44.2	5.8	-9.1	-2
G4R4	-1.6	-22.3	12.2	6.7	84.2	-71.6	-5.1	114.9	-23.7	-8.9	-8.1	16.9	29.8	35.4	-4.8	0.7
G4R5	11.9	6.7	35.6	15.5	93	49.4	3	118.3	-7.6	0.8	-82.3	13	-12.2	22.6	-0.4	1.7
G4R6	21.9	40.7	54.2	29.3	130	-6.2	18.3	133.8	2.5	4.8	26.3	68.4	48.9	58.1	-4	9

**Table E.4-3  
Residuals (m) in Frenchman Flat Alluvium Wells**

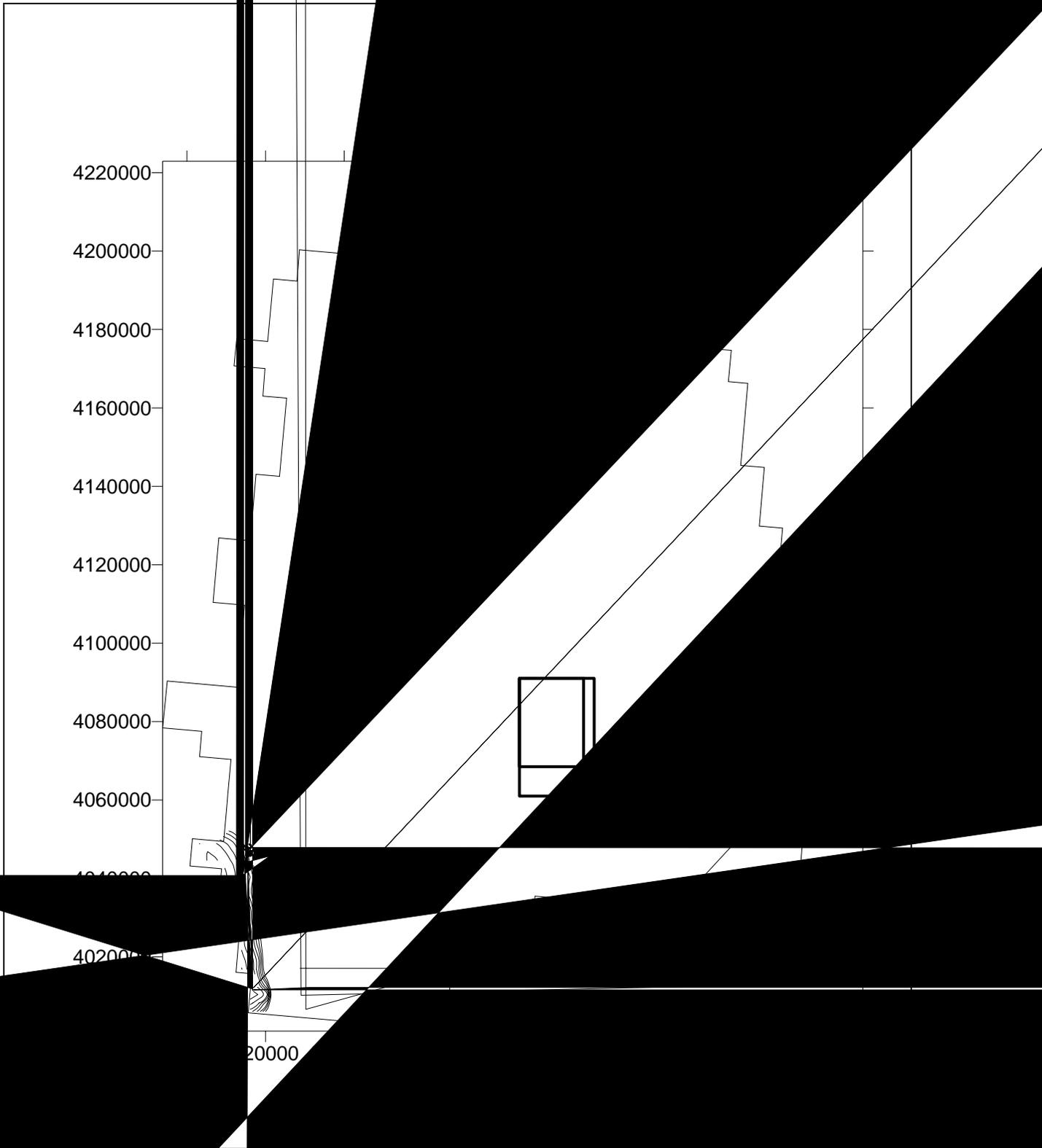
Model Name	Well Name													
	WW-5A	RNM-2S	WW-5C	UE-5f	UE-5 PW-2	RNM-2	ER 5-3	WW-5B	ER 5-3-3	UE-5 PW-1	WW-1	ER 5-4	RNM-1	UE-5n
G0R1	0.6	0.3	-4.1	4.1	2.9	-0.8	4.1	-0.6	4	2.8	-3.4	2	-2.6	0.3
G0R2	4.4	3.9	0.3	6.2	5	2.9	6.1	4.1	6	4.9	-0.2	4.3	0.8	4
G0R3	1.8	-0.9	-1.8	0.2	-1	-1.9	0.2	0.4	0.1	-0.9	-4.4	-0.1	-4	-0.8
G0R4	4.5	2.6	1.4	2.5	1.4	1.5	2.5	4.2	2.4	1.5	-2	2.8	-0.6	2.7
G0R5	6.2	1.6	1.7	4.2	3	0.6	4.3	3	4	3	-0.1	3.5	-1.3	1.8
G0R6	9.2	9.6	6.3	12	11	8.6	12	9.6	12	11	5.1	9.7	6.5	9.8
G1R1	0.6	0.3	-4.1	4.2	2.9	-0.8	4.2	-0.6	4.1	2.8	-3.4	2.1	-2.6	0.3
G1R2	4.4	3.9	0.3	6.2	5	2.9	6.1	4.1	6	4.9	-0.2	4.3	0.8	4
G1R3	1.7	-1.1	-1.9	0.1	-1.1	-2.1	0	0.3	-0.1	-1	-4.5	-0.2	-4.2	-1
G1R4	4.5	2.4	1.4	2.2	1.2	1.3	2.2	4.1	2.1	1.3	-2.1	2.7	-0.7	2.5
G1R5	6.2	1.6	1.8	4.3	3.1	0.6	4.3	3	4.1	3.1	0	3.5	-1.3	1.8
G1R6	9.2	9.6	6.3	12	11	8.6	12	9.6	12	11	5.2	9.7	6.4	9.8
G2R1	0.6	0.3	-4.1	4.1	2.9	-0.8	4.1	-0.6	4	2.8	-3.4	2	-2.6	0.3
G2R2	4.3	3.9	0.2	6.2	5	2.9	6.1	4	6	4.9	-0.2	4.3	0.8	4
G2R3	1.8	-0.9	-1.8	0.3	-0.9	-1.9	0.3	0.5	0.2	-0.8	-4.4	0	-3.9	-0.8
G2R4	4.4	2	1.1	2	0.9	0.9	2	3.7	1.8	1	-2.1	2.4	-1.1	2.1
G2R5	6.2	1.6	1.7	4.2	3	0.6	4.3	3	4	3	-0.1	3.5	-1.3	1.7
G2R6	9.2	9.6	6.3	12	11	8.6	12	9.6	12	11	5.1	9.7	6.5	9.8
G3R1	0.6	0.2	-4.1	4.2	2.9	-0.8	4.1	-0.6	4	2.8	-3.4	2	-2.6	0.2
G3R2	4.4	3.9	0.3	6.2	5	2.9	6.1	4.1	6	4.9	-0.2	4.3	0.9	4
G3R3	1.7	-1.1	-1.9	0	-1.1	-2.1	0	0.3	-0.1	-1.1	-4.5	-0.2	-4.2	-1
G3R4	4.9	2.9	1.7	2.8	1.7	1.8	2.8	4.5	2.7	1.8	-1.6	3.2	-0.3	3
G3R5	6.2	1.6	1.7	4.3	3	0.6	4.3	3	4.1	3	-0.1	3.5	-1.3	1.7
G3R6	9.3	9.7	6.4	12	11	8.7	12	9.7	12	11	5.2	9.8	6.5	9.9
G4R1	0.6	0.2	-4.1	4.2	2.9	-0.8	4.1	-0.6	4	2.8	-3.4	2.1	-2.6	0.2
G4R2	4.4	3.9	0.3	6.2	5	2.9	6.1	4	6	4.9	-0.2	4.3	0.8	4
G4R3	1.7	-1.1	-1.9	0	-1.1	-2.1	0	0.3	-0.1	-1.1	-4.6	-0.3	-4.2	-1
G4R4	4.5	2.2	1.3	2.1	1	1.2	2.1	3.9	1.9	1.1	-2.1	2.5	-0.9	2.3
G4R5	6.2	1.6	1.7	4.2	3	0.6	4.3	3	4	3	-0.1	3.4	-1.4	1.7
G4R6	9.3	9.7	6.4	12	11	8.7	12	9.7	12	11	5.2	9.8	6.5	9.9

**Table E.4-4**  
**Simulated Discharge Rates (m<sup>3</sup>/d) at Discharge Calibration Zones**

Model Name	Death Valley	Oasis Valley	Amargosa River	Ash Meadows	Franklin Lake/ Alkali Flat	Alkali Flat (Peter's Playa)	Penoyer Valley	Indian Springs	Pahrump Valley	Eagle Mountain
G0R1	-71000	-17000	-9300	-84000	-32000	-12000	-14000	0	2300	-5900
G0R2	-88000	-12000	-11000	-72000	-31000	-16000	-4000	-22	7460	-7900
G0R3	-63000	-27000	-18000	-93000	-39000	-26000	-24000	-25	2510	-11000
G0R4	-82000	-20000	-13000	-86000	-40000	-18000	-24000	0	2400	-11000
G0R5	-61000	-7900	-5700	-74000	-24000	-13000	-6100	0	2080	-6000
G0R6	-64000	-5600	-7900	-50000	-16000	-22000	0	0	3720	-4700
G1R1	-71000	-17000	-9300	-84000	-32000	-12000	-14000	0	2300	-5900
G1R2	-88000	-12000	-11000	-72000	-31000	-16000	-4000	-22	7460	-7900
G1R3	-63000	-27000	-18000	-93000	-39000	-26000	-24000	-25	2510	-11000
G1R4	-82000	-19000	-13000	-86000	-40000	-18000	-24000	0	2400	-11000
G1R5	-61000	-8000	-5700	-74000	-24000	-13000	-6000	0	2080	-6000
G1R6	-64000	-5500	-7900	-50000	-16000	-22000	0	0	3720	-4700
G2R1	-71000	-17000	-9300	-84000	-32000	-12000	-14000	0	2300	-5900
G2R2	-88000	-12000	-11000	-72000	-31000	-16000	-4000	-22	7460	-7900
G2R3	-63000	-28000	-18000	-93000	-39000	-26000	-24000	-25	2510	-11000
G2R4	-82000	-19000	-13000	-86000	-40000	-18000	-24000	0	2400	-11000
G2R5	-61000	-8000	-5700	-74000	-24000	-13000	-6000	0	2080	-6000
G2R6	-64000	-5600	-7900	-51000	-16000	-22000	0	0	3720	-4700
G3R1	-71000	-17000	-9300	-84000	-32000	-12000	-14000	0	2300	-5900
G3R2	-88000	-12000	-11000	-72000	-31000	-16000	-4000	-22	7460	-7900
G3R3	-63000	-27000	-18000	-93000	-39000	-26000	-24000	-25	2510	-11000
G3R4	-82000	-20000	-13000	-85000	-40000	-18000	-24000	0	2410	-11000
G3R5	-61000	-8000	-5700	-74000	-24000	-13000	-6100	0	2080	-6000
G3R6	-64000	-5600	-7800	-50000	-16000	-22000	0	0	3720	-4700
G4R1	-71000	-17000	-9300	-84000	-32000	-12000	-14000	0	2300	-5900
G4R2	-88000	-12000	-11000	-72000	-31000	-16000	-4000	-22	7460	-7900
G4R3	-63000	-26000	-19000	-93000	-39000	-26000	-24000	-26	2510	-11000
G4R4	-82000	-20000	-13000	-86000	-40000	-18000	-24000	0	2400	-11000
G4R5	-61000	-7900	-5700	-74000	-24000	-13000	-6100	0	2080	-6000
G4R6	-64000	-5700	-7800	-50000	-16000	-22000	0	0	3720	-4700



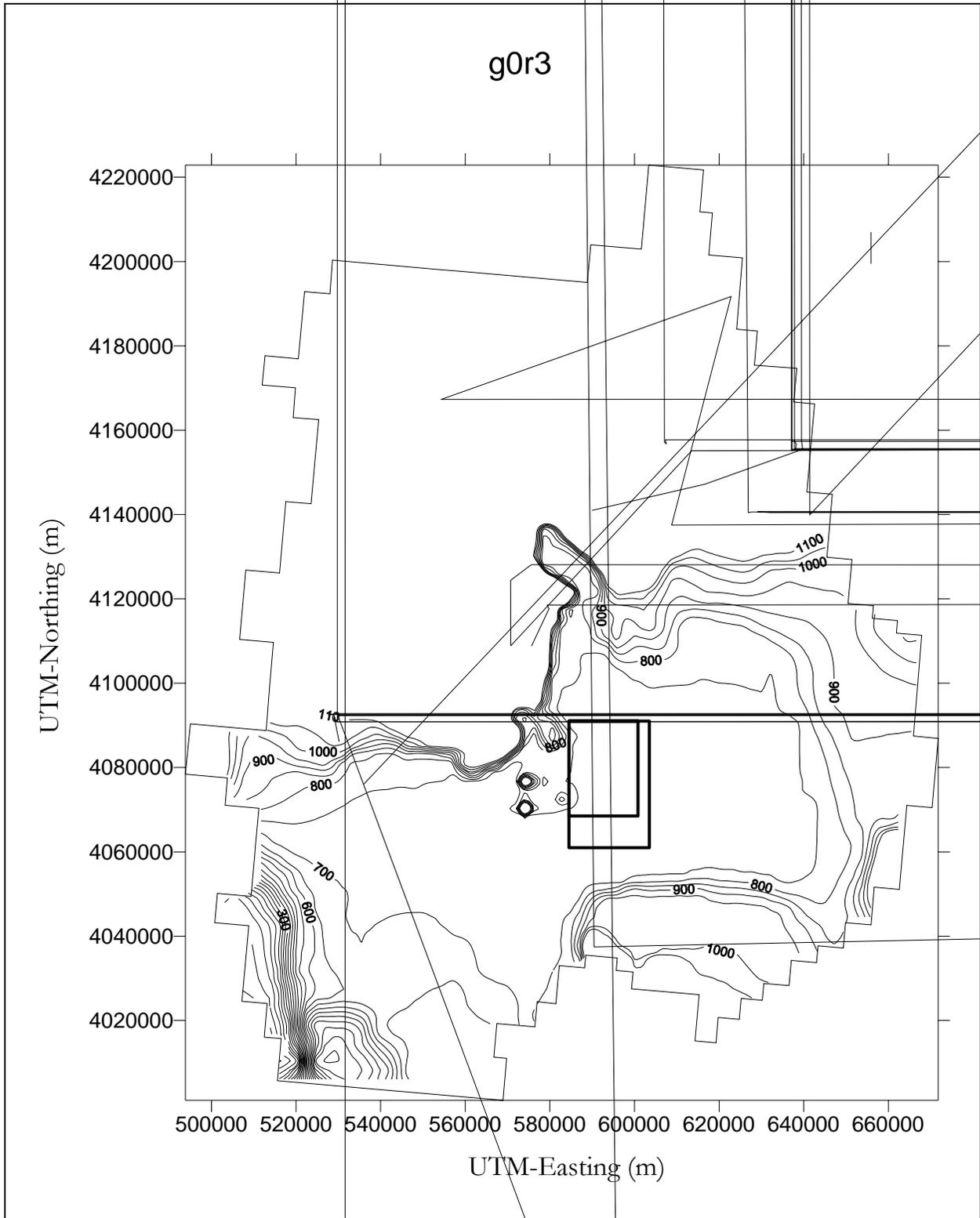
**Figure E.4-1**  
**GOR1 Water Table Contours on Topographic Relief Base Map**



Water Public Co

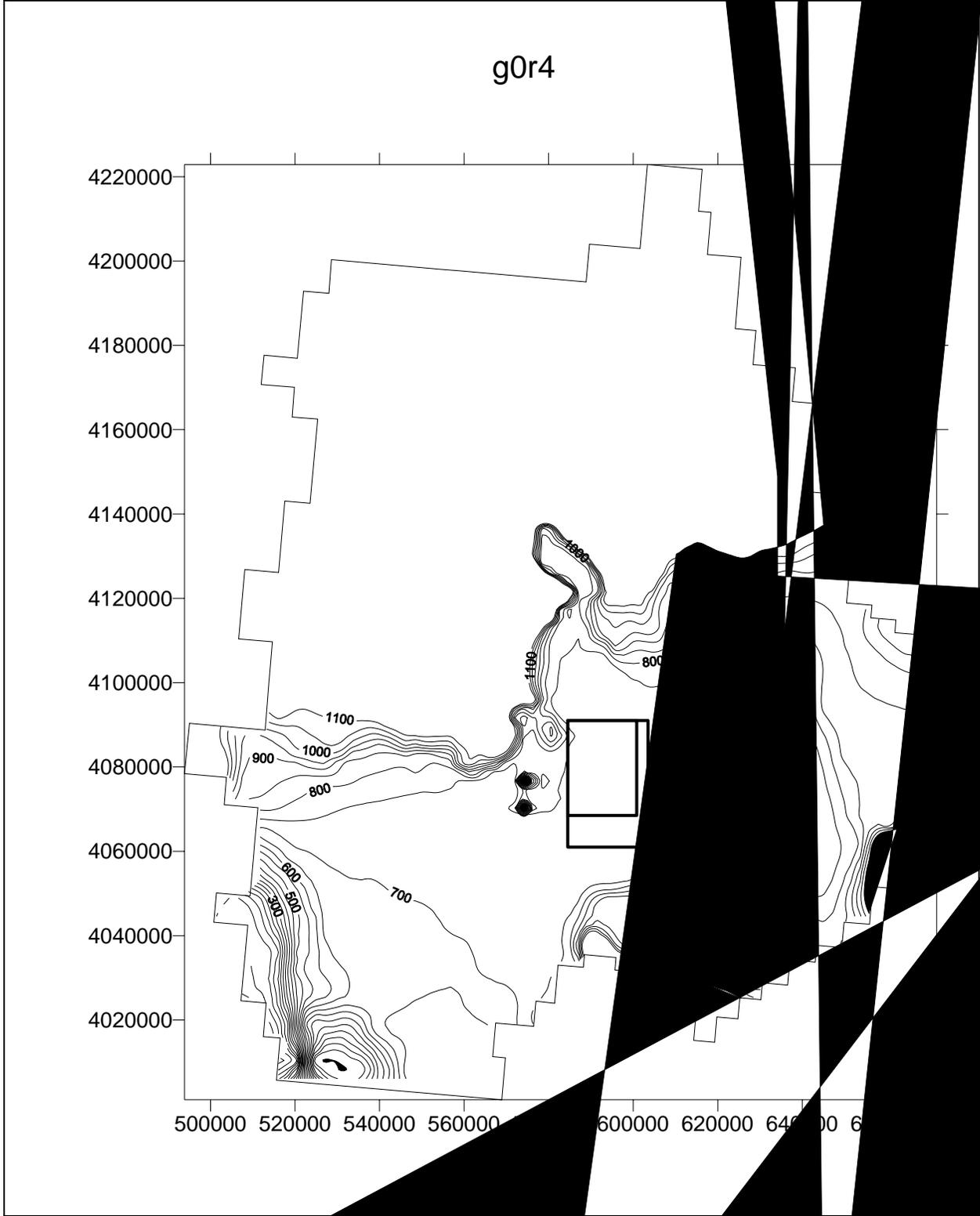


**Figure E.4-3**  
**Water Table Contours (m amsl) for Regional Groundwater Flow Model G0R2**



**Figure E.4-4**  
**Water Table Contours (m amsl) for Regional Groundwater Flow Model G0R3**

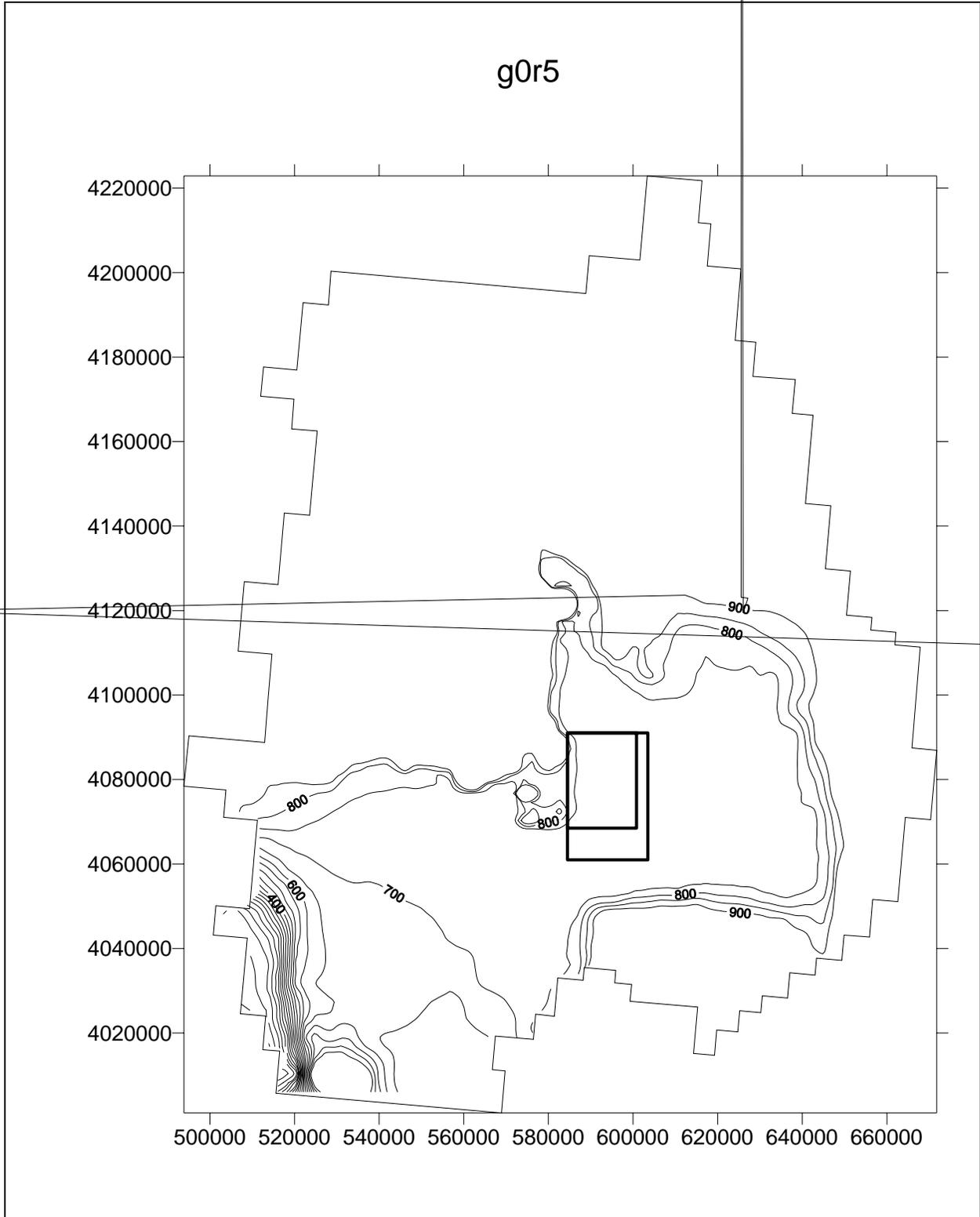
g0r4



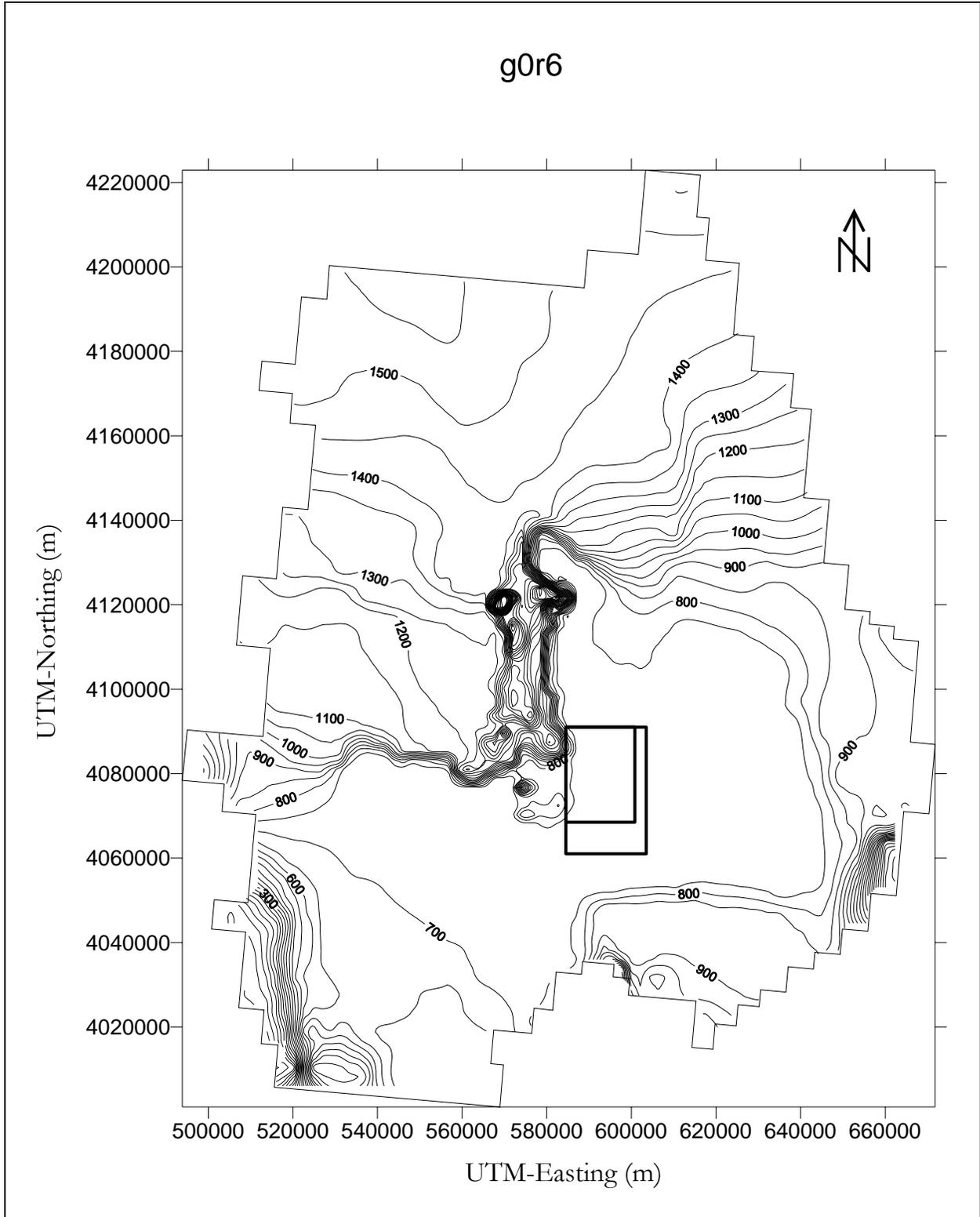
Water Table C

Groundwater

g0r4



**Figure E.4-5**  
**Water Table Contours (m amsl) for Regional Groundwater Flow Model G0R5**



**Figure E.4-7**  
**Water Table Contours (m amsl) for Regional Groundwater Flow Model G0R6**



**Table E.4-5**  
**Calibrated Horizontal Hydraulic Conductivity (m/d) at Land Surface ( $K_0$ ) for Frenchman Flat HSUs**

HSU Name	HSU Description	Zone	Initial K	Calibrated K for Each Recharge Model					
				R1	R2	R3	R4	R5	R6
AA	Alluvial Aquifer	1	6.1	3.1	1.1	1.5	1.5	0.96	2.6
		4	20	30	31	20	32	13	26
		5	5.5	14	18	5.5	7.1	5.7	17
		7	0.018	0.04	0.055	0.026	0.04	0.022	0.04
PCU2T	Playa Confining Unit		0.16	0.23	0.092	0.2	0.16	0.11	1.2
AA 2	Alluvial Aquifer		0.16	0.25	1.5	0.29	0.19	0.24	0.58
OAA1	Older Altered Alluvial Aquifer		29	39	6.7	31	26	37	27
BLFA	Basalt Lava Flow Aquifer		3.7	4	5.7	4.5	4.2	5.5	7.9
PCU1U	Older Playa Confining Unit - Upper		0.16	0.16	0.083	0.2	0.21	0.23	0.13
AA1	Alluvial Aquifer		5.5	7.1	3.8	5.7	6.1	14	9.1
OAA	Older Altered Alluvial Aquifer		29	51	210	44	32	56	31
PCU1L	Older Playa Confining Unit - Lower		0.16	0.14	0.17	0.24	0.21	0.21	0.12
VA	Volcanic Tuff Aquifer	1	5	7.4	11	12	7.2	6.6	6.3
		2	10	14	18	32	20	12	11
		4	3.3	1.6	0.33	2.3	3.2	3	4.2
TMLVTA	Timber Mountain Lower Vitric Tuff Aquifer		33	44	330	38	26	77	27
UTCU	Upper Tuff Confining Unit		0.16	0.2	0.095	0.15	0.18	0.2	0.11
TSA	Topopah Spring Aquifer		17	35	60	22	20	24	25
LVTA	Lower Vitric Tuff		33	51	71	27	47	23	44
VCU	Volcanic Confining Unit	1	0.1	0.06	0.095	0.31	0.24	0.093	0.049
		2	0.057	0.08	0.006	0.071	0.07	0.072	0.058
		4	0.041	0.02	0.052	0.037	0.05	0.056	0.097
WCU	Wahmonie Confining Unit		0.1	0.12	0.15	0.12	0.11	0.15	0.13
LTCU1	Lower Tuff Confining Unit		0.1	0.07	0.081	0.091	0.11	0.079	0.1
VCUff	Volcaniclastic Confining Unit		0.1	0.25	0.4	0.15	0.13	0.11	0.17
LCA3	Lower Carbonate Aquifer		0.058	0.06	0.024	0.1	0.05	0.031	0.021
UCCU	Upper Clastic Confining Unit		0.01	0	0.01	0.006	0.01	0.006	0.002
LCA	Lower Carbonate Aquifer	1	220	22	22	22	22	22	180
		7	290	430	510	220	200	130	400
LCCU	Lower Clastic Confining Unit		0.088	0.02	0.081	0.025	0.02	0.02	0.038

## **E.5.0** *References*

*Applied Groundwater Modeling.*

*Hydrostratigraphic Model of the Pahute Mesa-Oasis  
Valley Area, Nye County, Nevada,*

*Ground-Water Discharge Determined from Estimates of Evapotranspiration, Death Valley Regional Flow System, Nevada and California,*

*Groundwater in White River Valley, White Pine, Nye and Lincoln Counties, Nevada,*

*Selection of 3D Geostatistical Reservoir Representations Based on Dynamic Production Criteria*

*Reconnaissance Estimates of Recharge Based on an Elevation-dependent Chloride Mass-balance Approach*

*Hydrologic Data for the Groundwater Flow and Contaminant Transport Model of Corrective Action Units 101 and 102: Central and Western Pahute Mesa, Nye County, Nevada,*

*Regional Groundwater Flow and Tritium Transport Modeling and Risk Assessment of the Underground Test Area, Nevada Test Site, Nevada,*

*Resources Research*

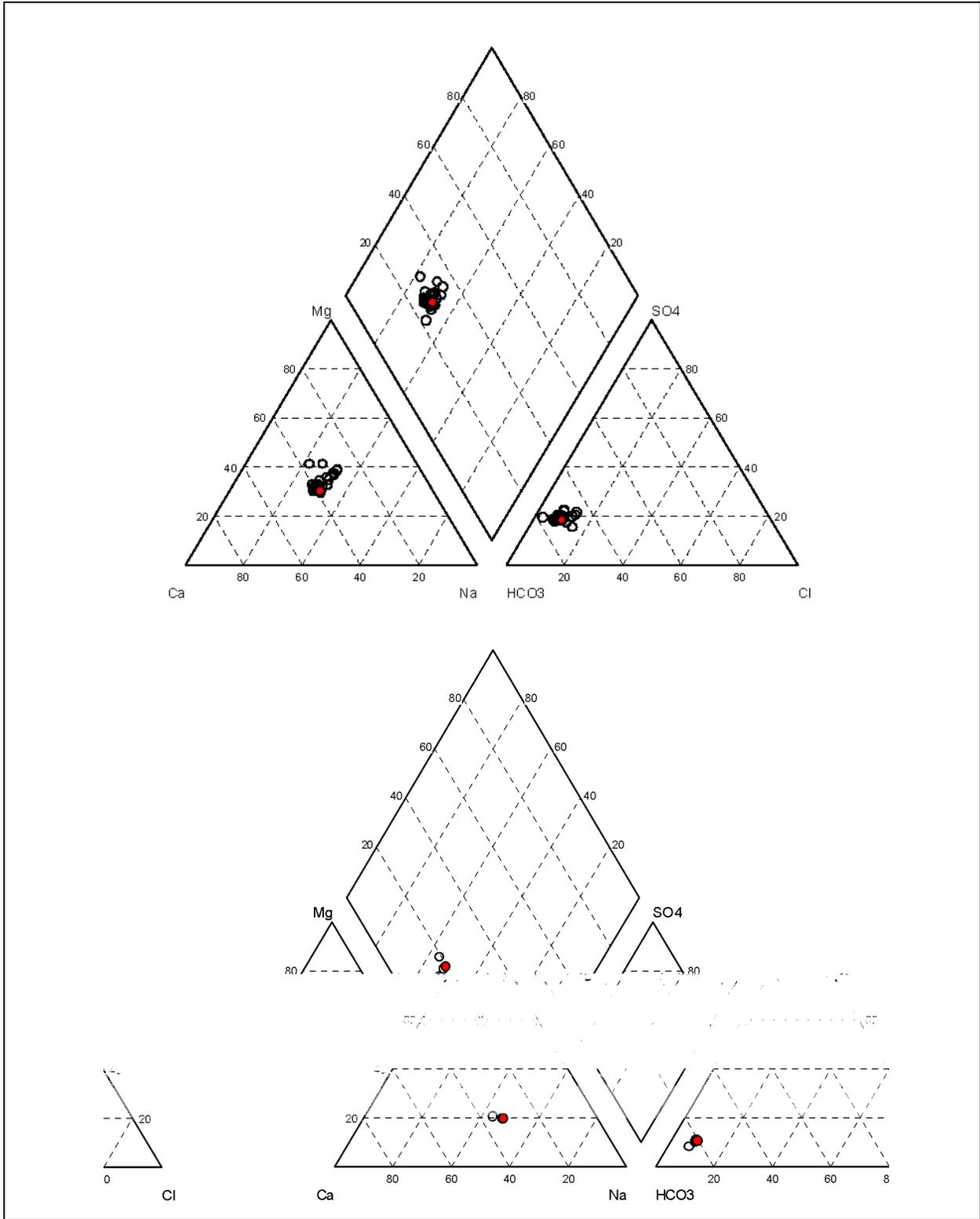
*Water*



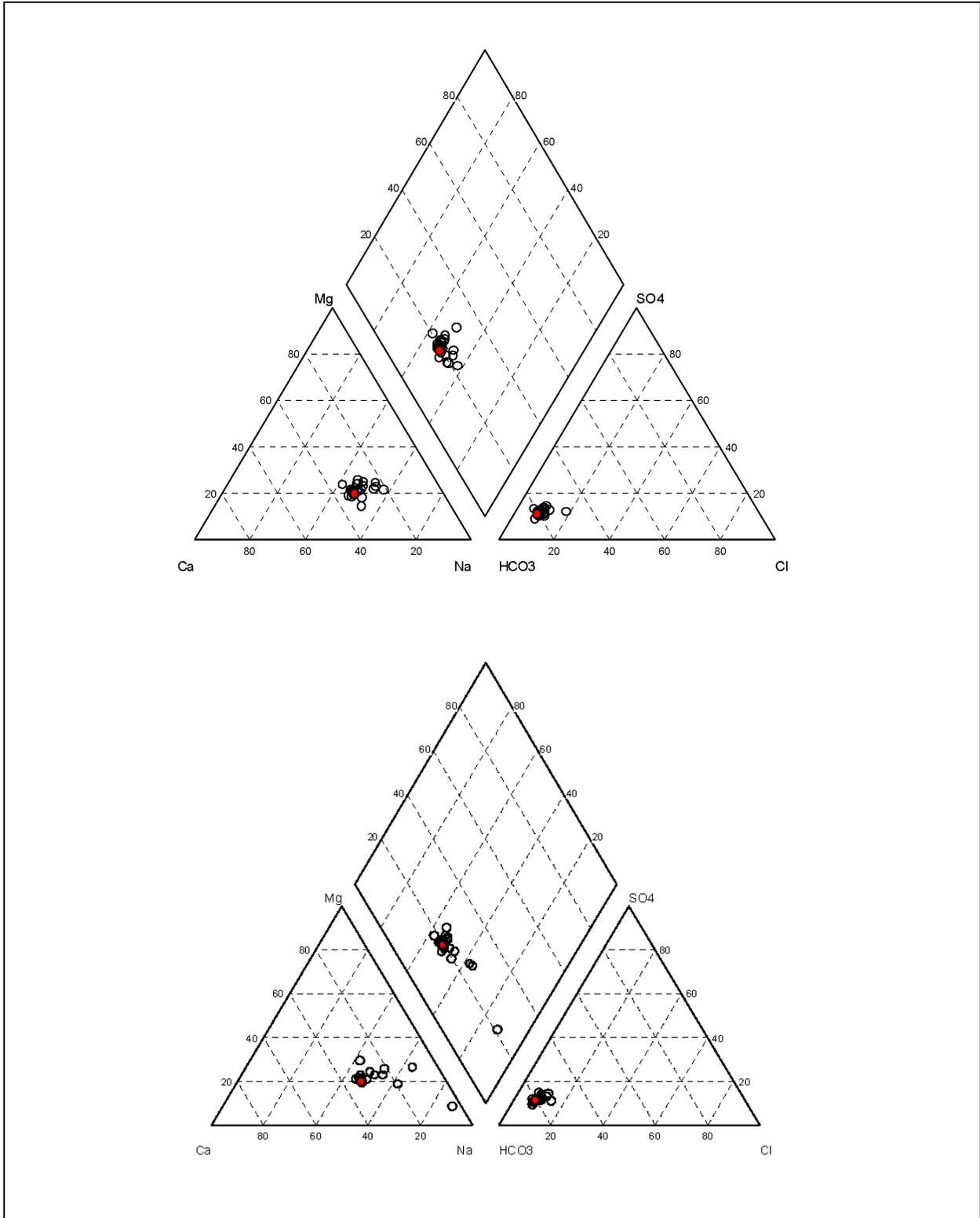
## **Appendix F**

### **Piper and Stiff Diagrams for FF Wells**

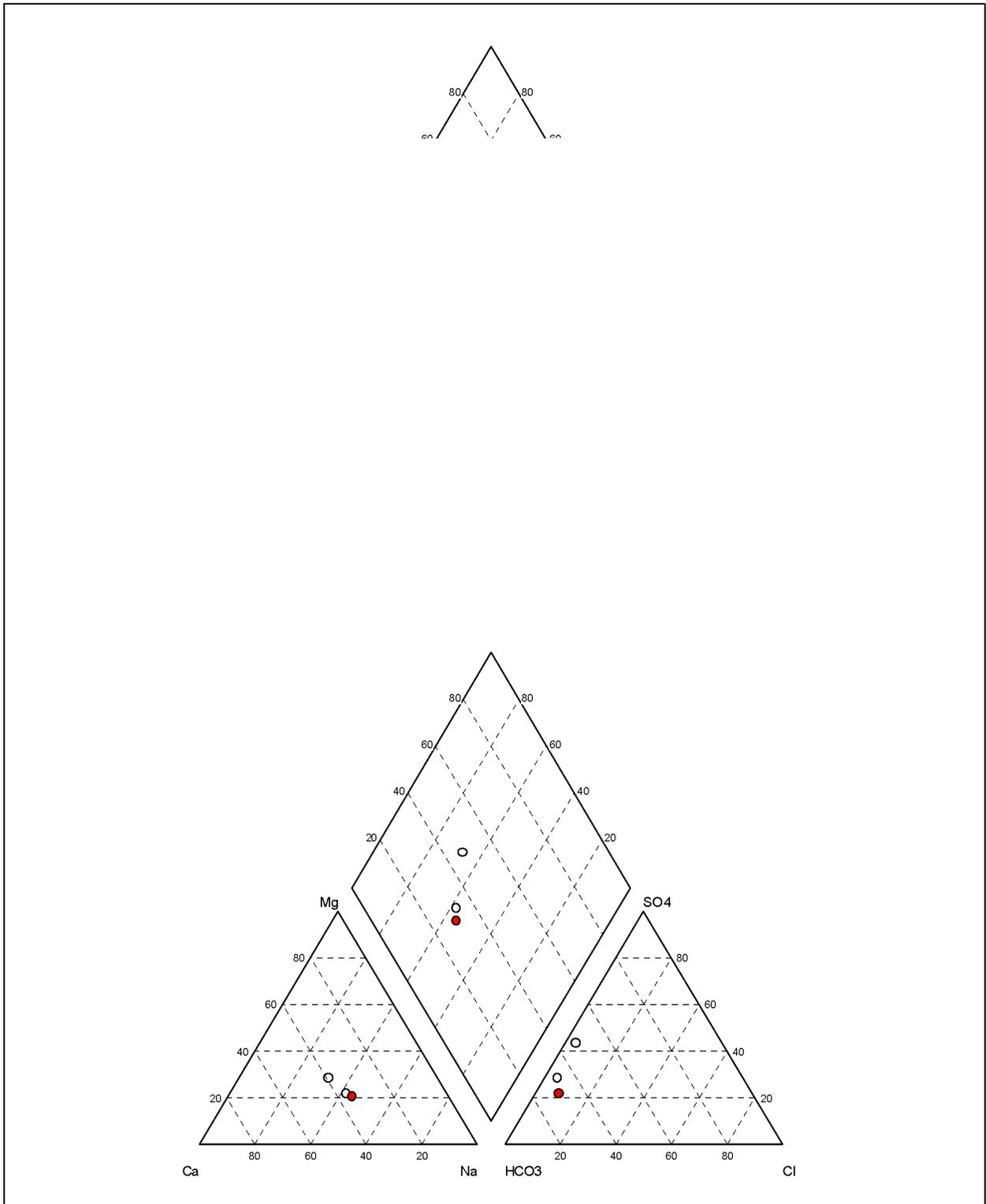
## ***F.1.0*** ***Geochemistry, Piper and Stiff Diagrams***



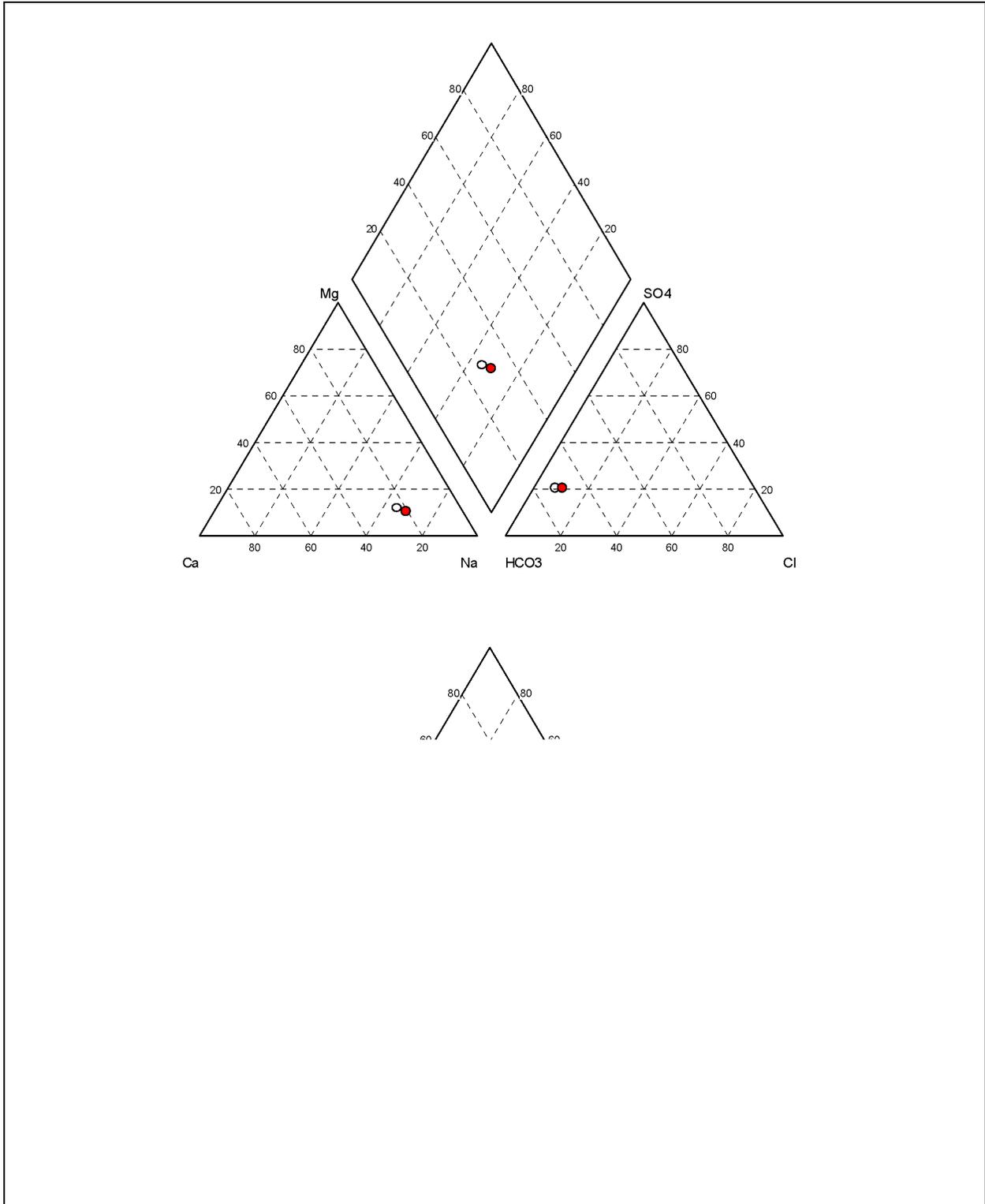
**Figure F.1-1**  
**Piper Diagram for Army #1 WW (Top) and ER-5-3#2 (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



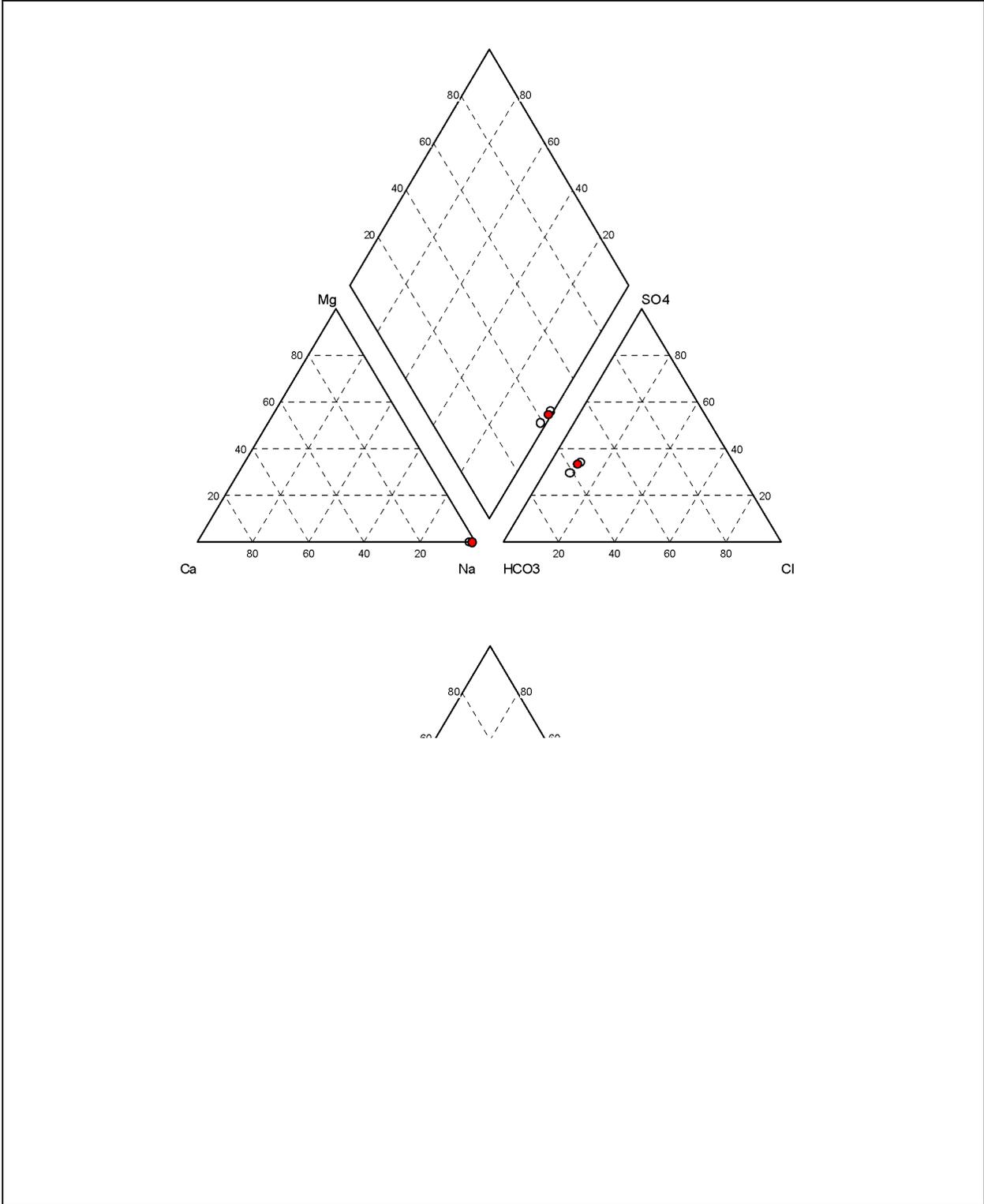
**Figure F.1-2**  
**Piper Diagram for Well WW-C (Top) and WW-C1 (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



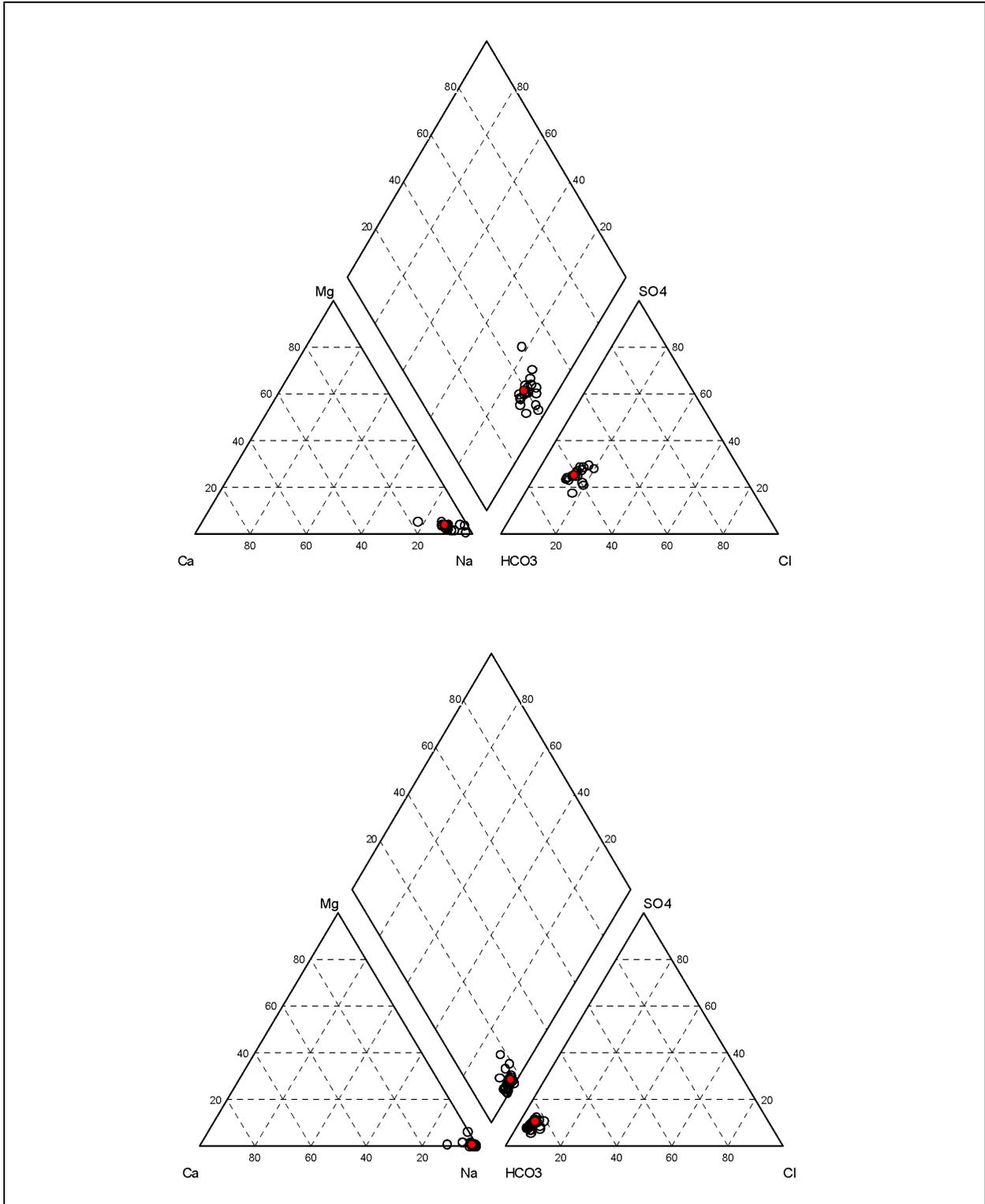
**Figure F.1-3**  
**Piper Diagram for Well TW-3 (Top) and TW-F (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



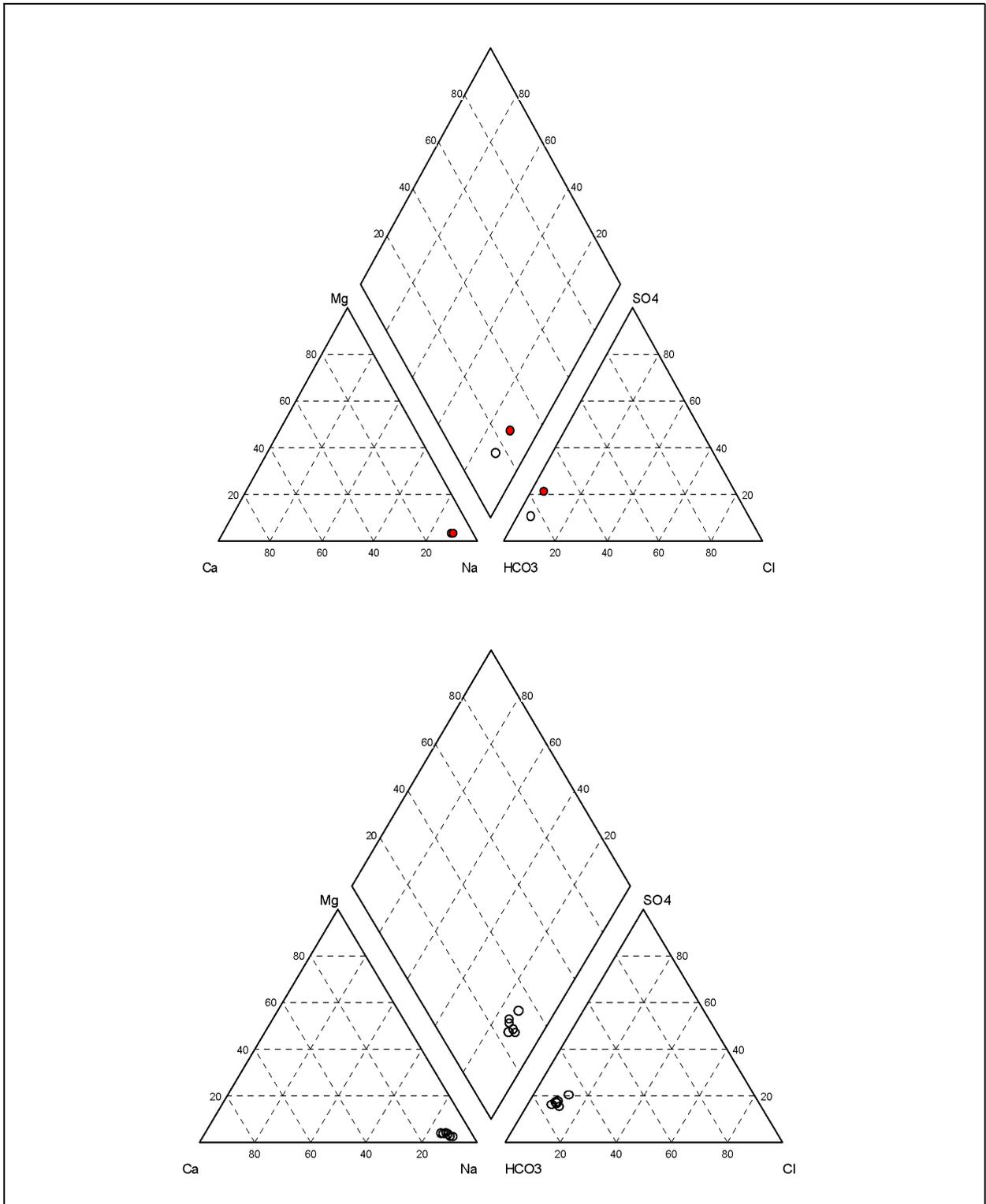
**Figure F.1-4**  
**Piper Diagram for UE-5 PW-1 (Top) and UE-5 PW-2 (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



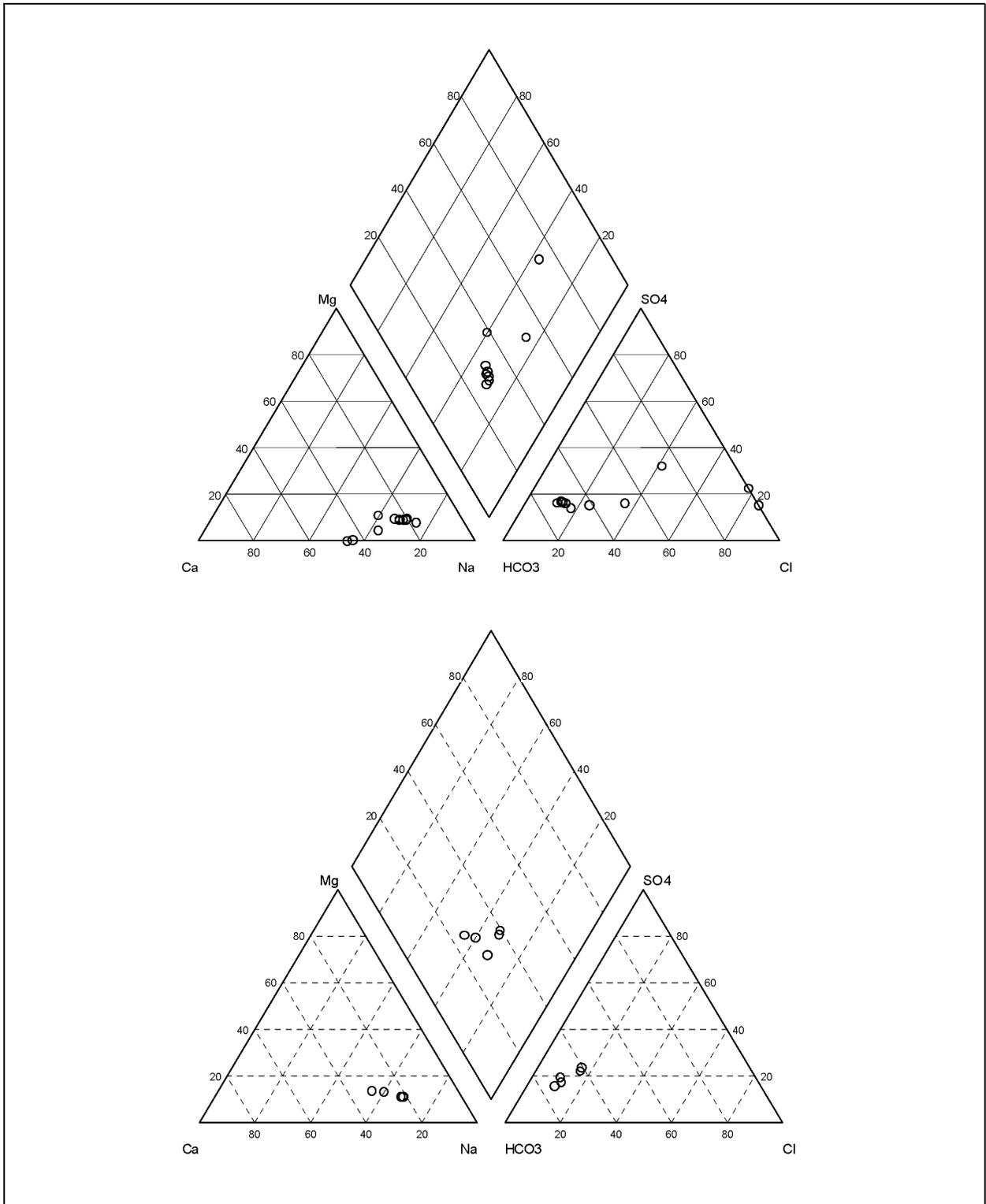
**Figure F.1-5**  
**Piper Diagram for ER-5-4 (Top) and WW-5a (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



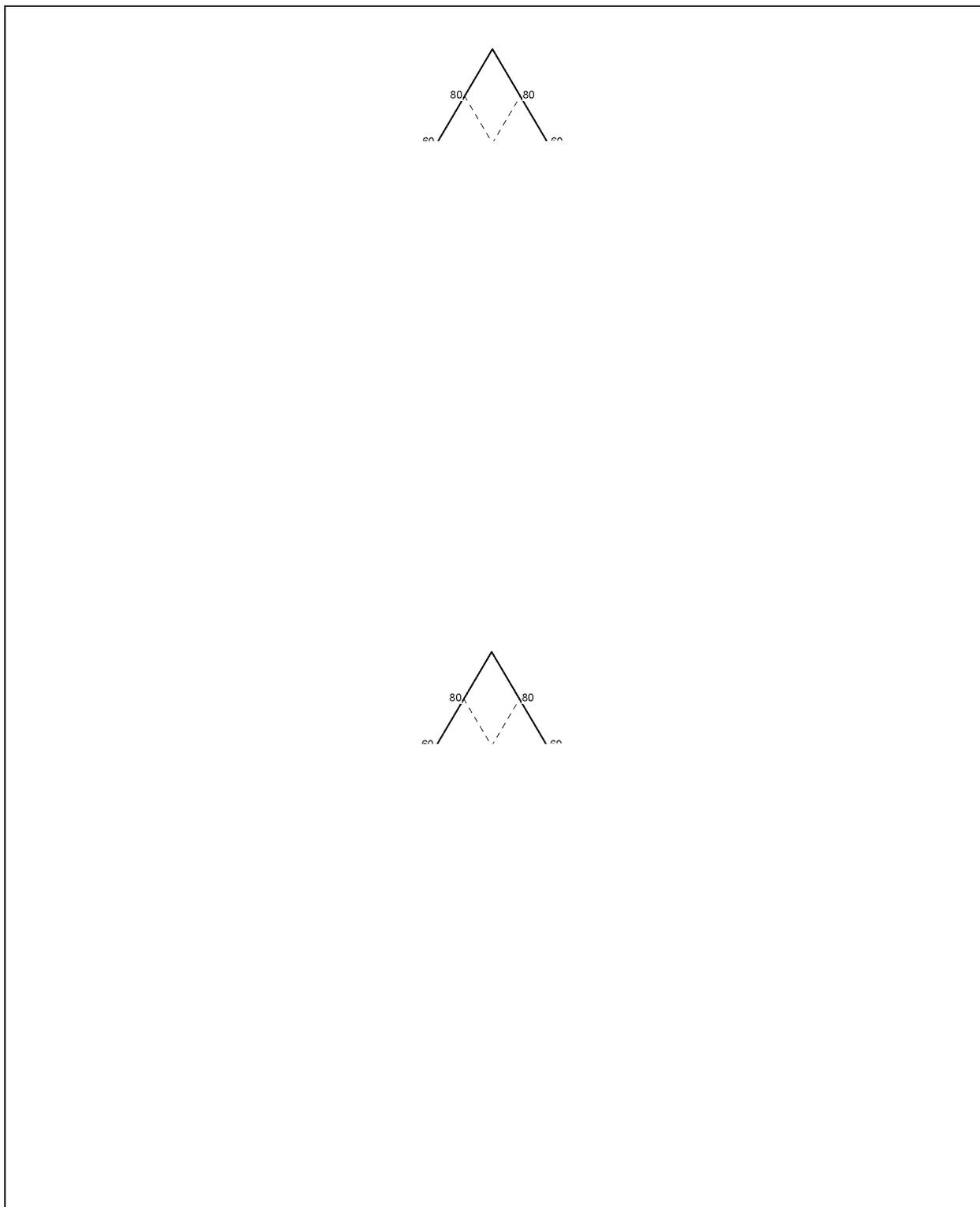
**Figure F.1-6**  
**Piper Diagram for WW-5b (Top) and WW-5c (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



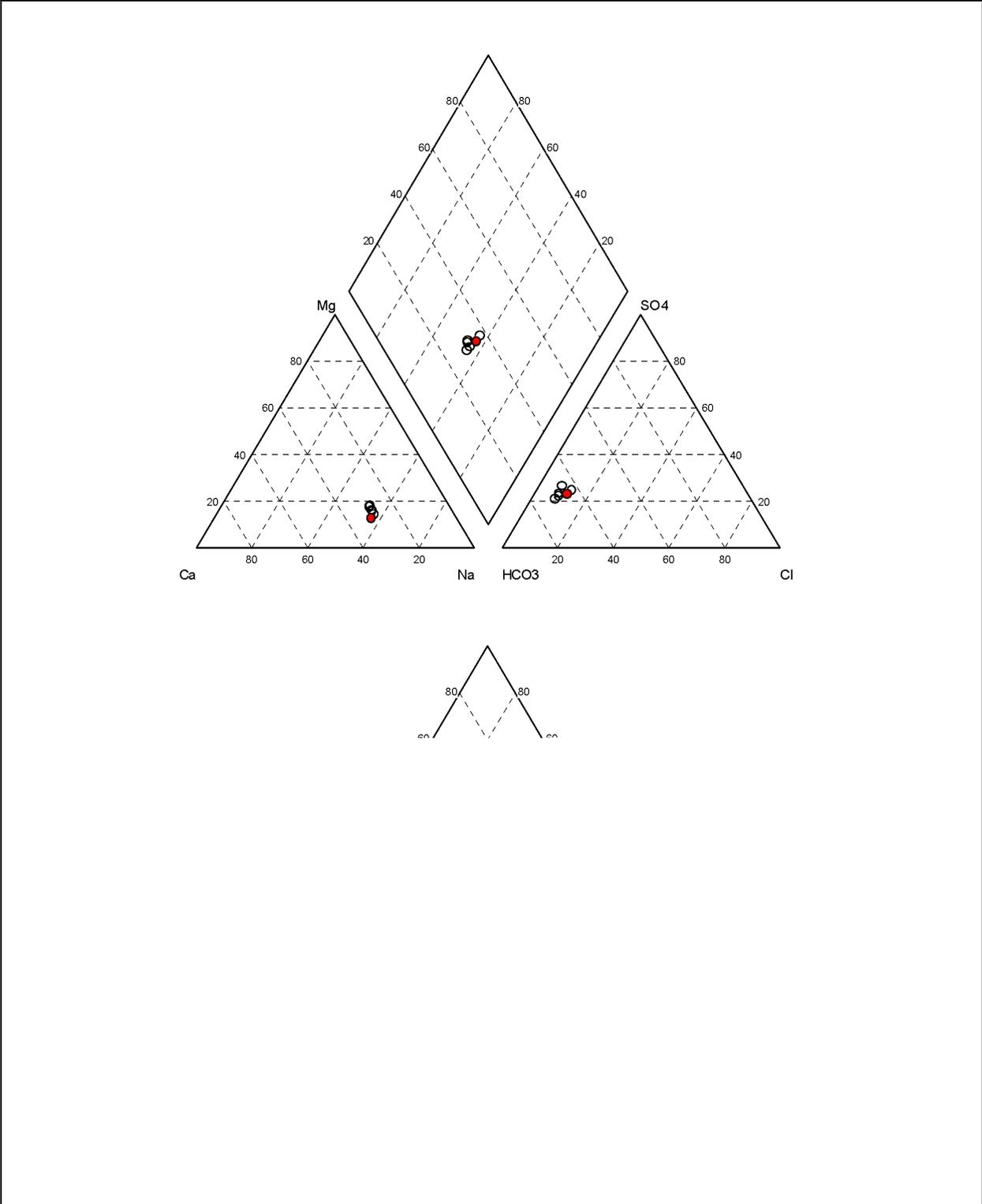
**Figure F.1-7**  
**Piper Diagram for WW-1 (Top) and UE-5n (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



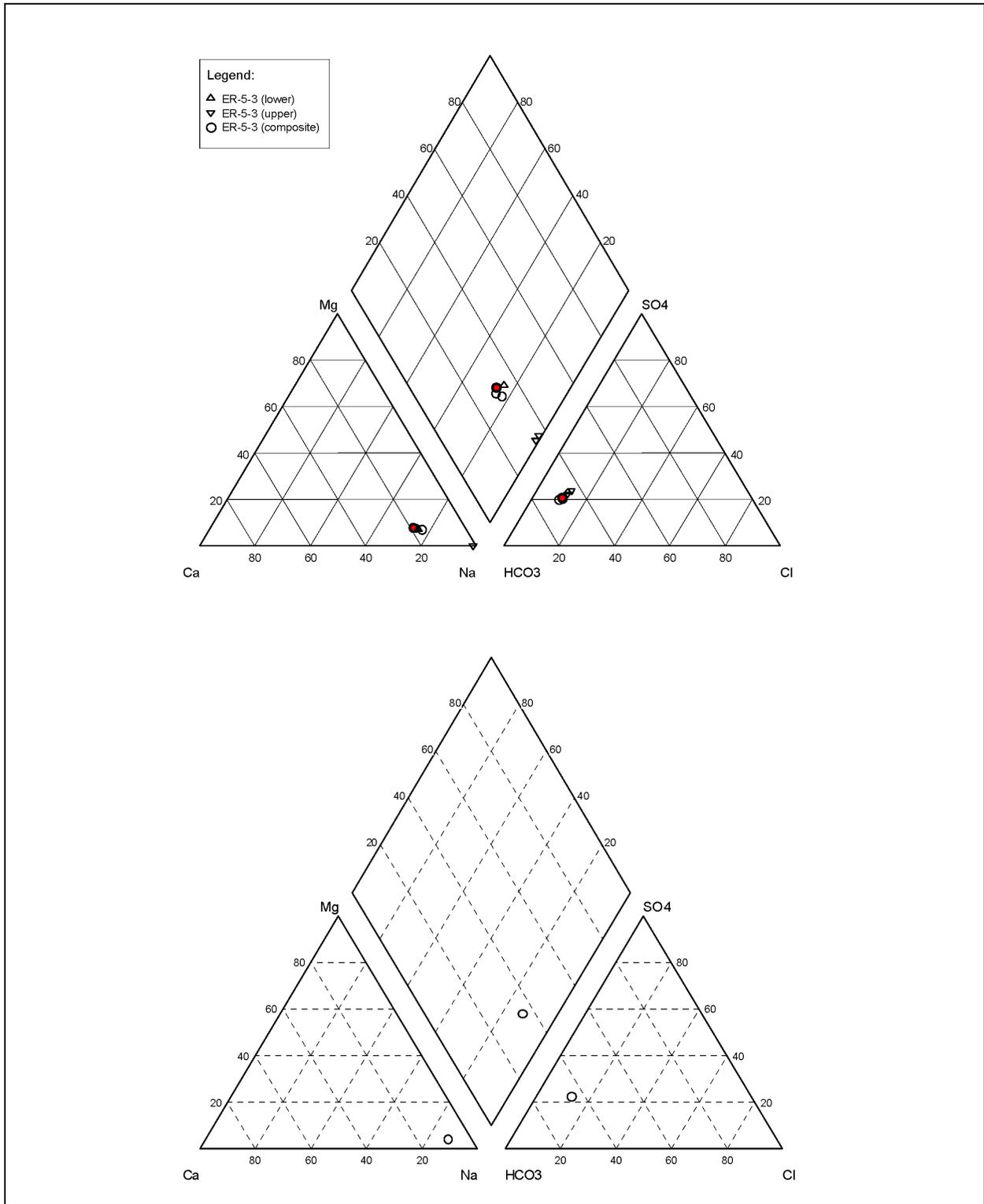
**Figure F.1-8**  
**Piper Diagram for RNM-1 (Top) and RNM-2S (Bottom)**



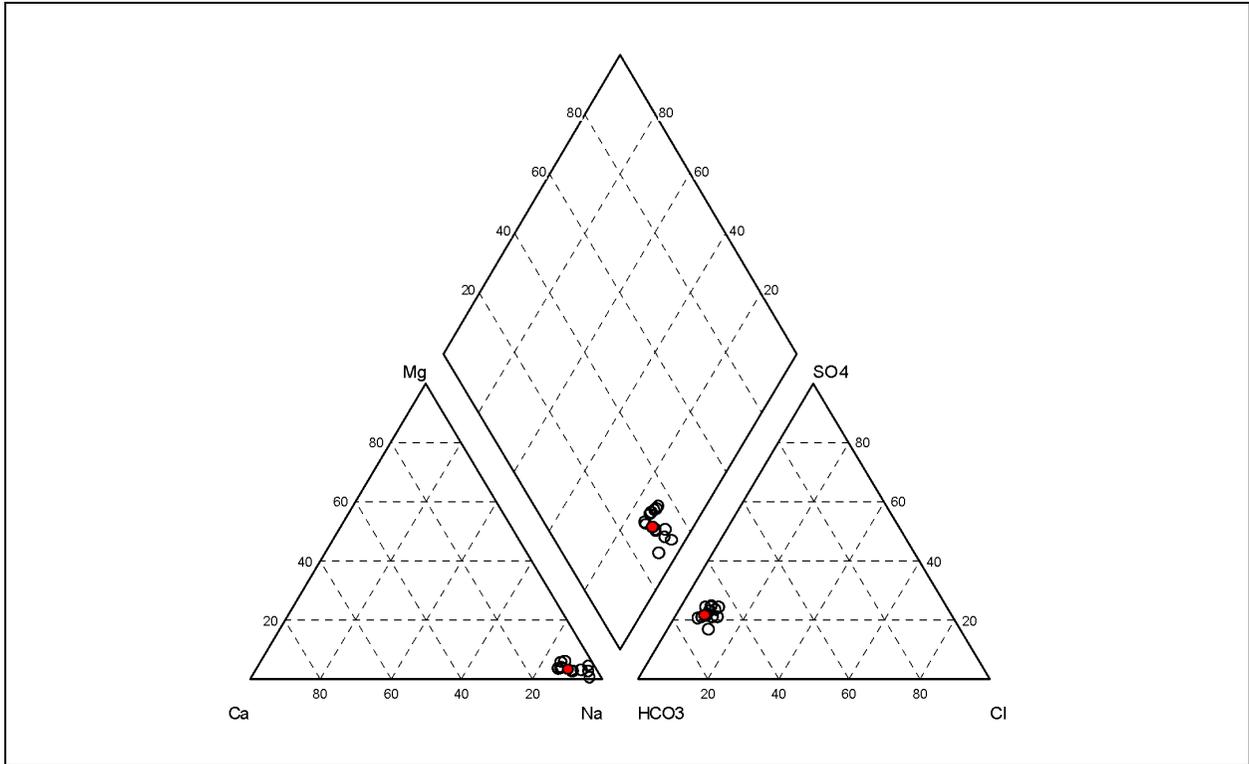
**Figure F.1-9**  
**Piper Diagram for ER-5-4 #2 (Top) and UE-5 PW-3 (Bottom)**  
**(Solid marker identified the sample used for geochemical modeling)**



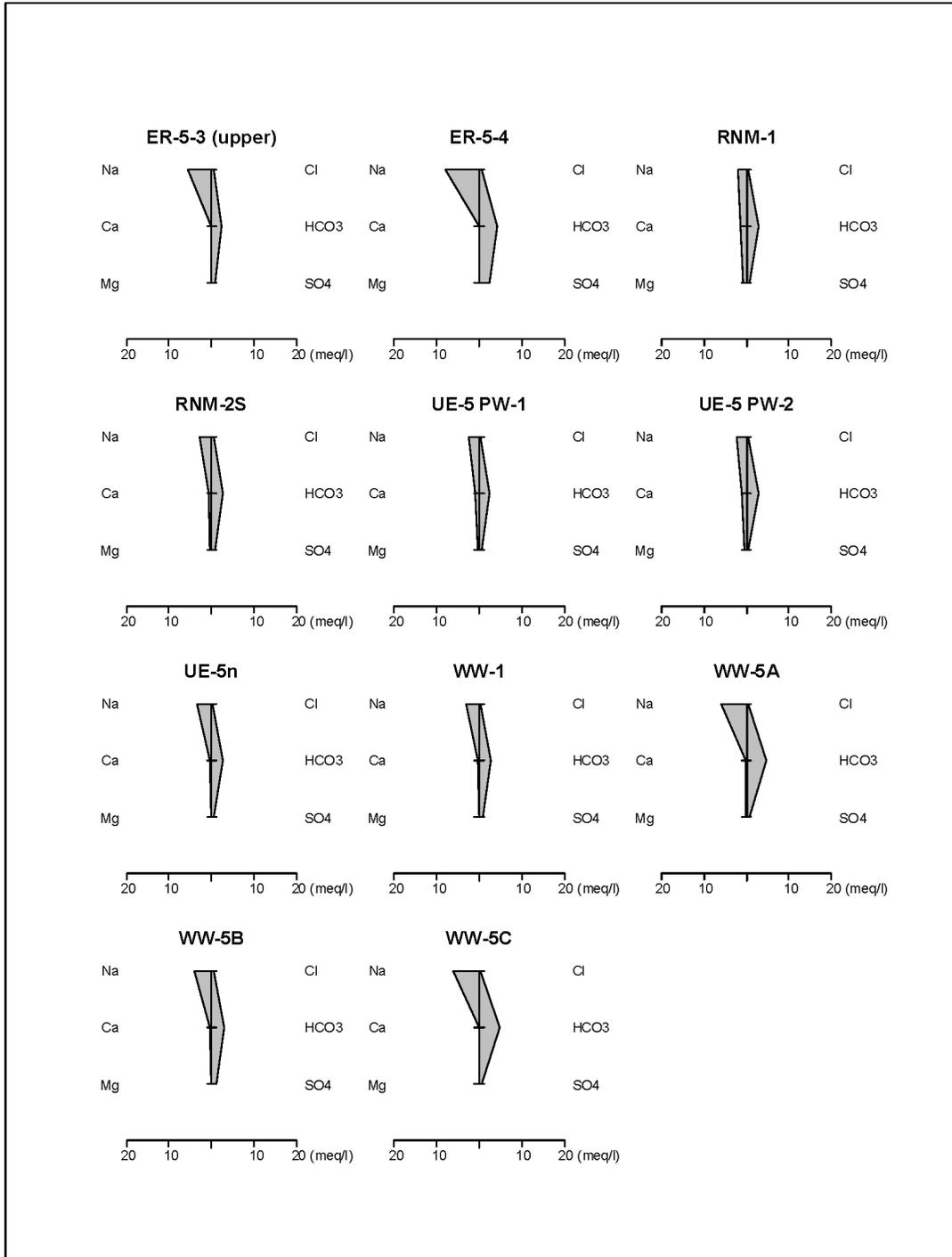
**Figure F.1-10**  
**Piper Diagram for Well WW-4 (Top) and WW-4a (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



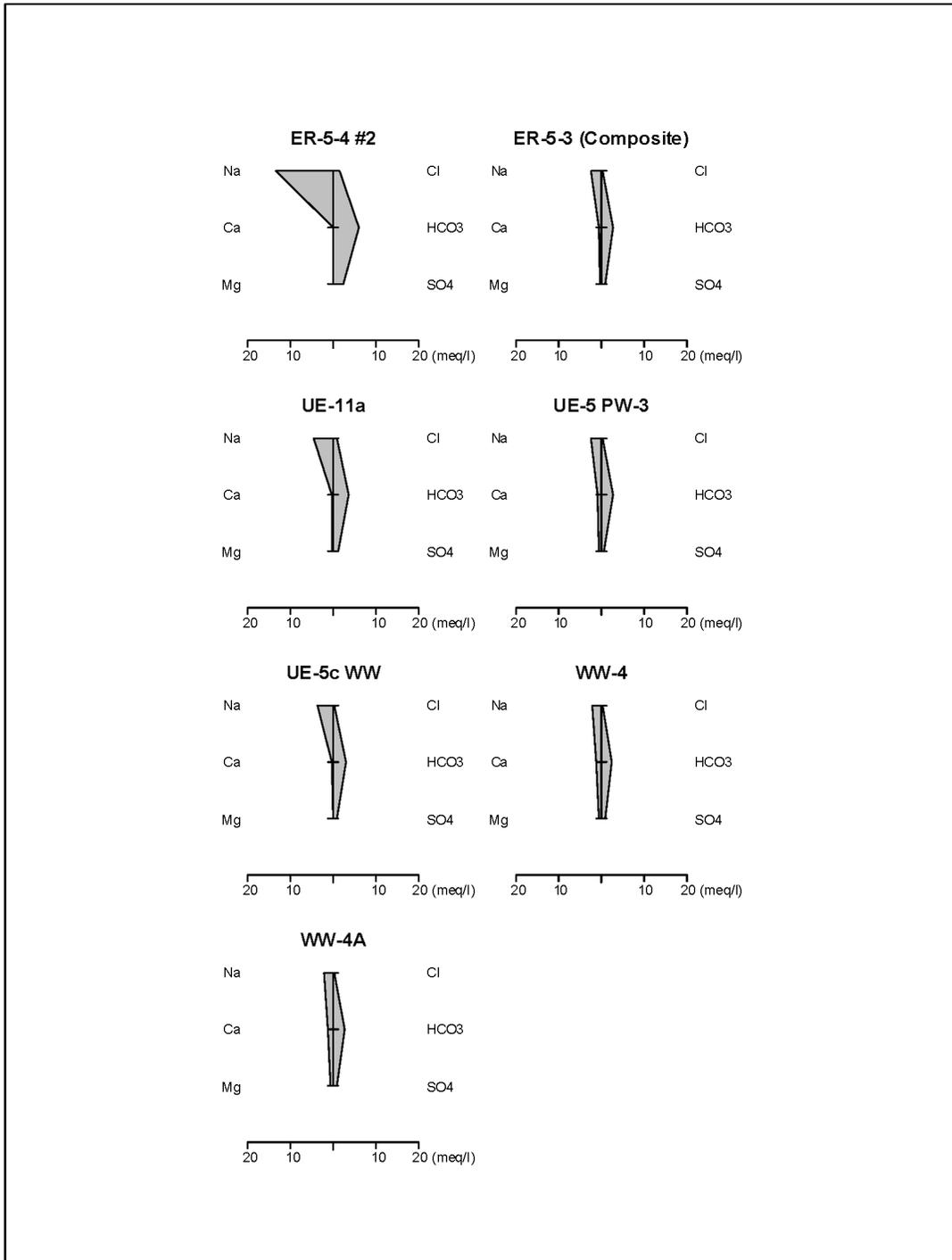
**Figure F.1-11**  
**Piper Diagram for ER-5-3 (Top) and UE-11a (Bottom)**  
**(Solid marker identifies the sample used for geochemical modeling)**



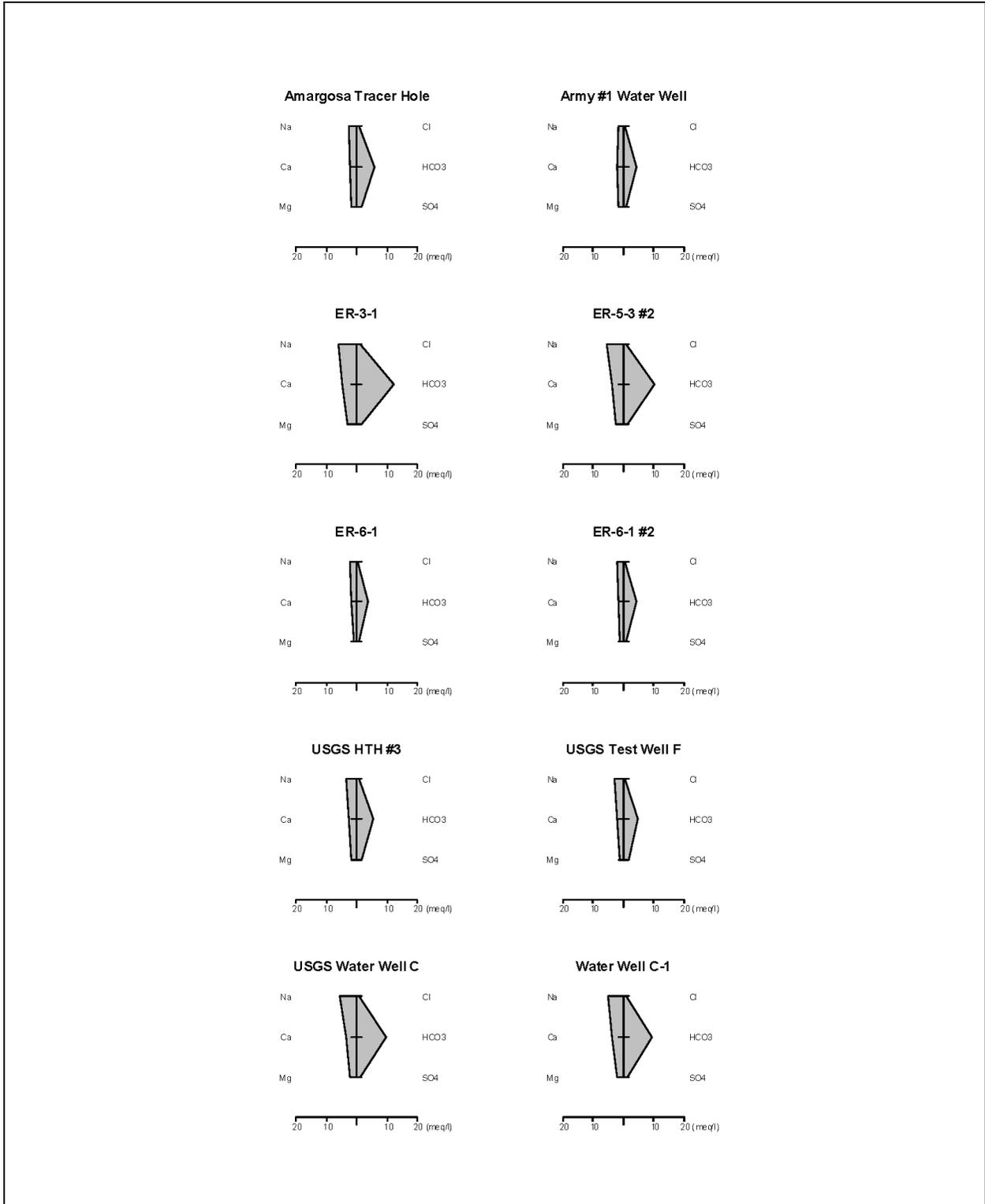
**Figure F.1-12**  
**Piper Diagram for UE-5c WW**  
**(Solid marker identifies the sample used for geochemical modeling)**



**Figure F.1-13**  
**Stiff Diagrams Based on Representative Concentrations**  
**for Alluvial Aquifer Groundwater**



**Figure F.1-14**  
**Stiff Diagrams Based on Representative Concentrations for Groundwater of the Volcanic HSUs**



**Figure F.1-15**  
**Stiff Diagrams Based on Representative Concentrations**  
**for Carbonate Aquifer Groundwater**

## Distribution



Army-1 WW Monthly Pumping Data

Month	Year	Million Gallons	Acre-Feet	Million Liters	Days Reported	Source <sup>a</sup>	Comment <sup>b</sup>
July	1962	0.70	2.15	2.65	0	R	estimated
August	1962	0.70	2.15	2.65	0	R	estimated
September	1962	0.70	2.15	2.65	0	R	estimated
October	1962	0.70	2.15	2.65	0	R	estimated
November	1962	0.70	2.15	2.65	0	R	estimated
December	1962	0.70	2.15	2.65	0	R	estimated
January	1963	--	--	--	0	R	--
February	1963	--	--	--	0	R	--
March	1963	--	--	--	0	R	--
April	1963	--	--	--	0	R	--
May	1963	--	--	--	0	R	--
June	1963	--	--	--	0	R	--
July	1963	--	--	--	0	R	--
August	1963	2.70	8.29	10.23	31	M	--
September	1963	0.00	0.00	0.00	30	M	--
October	1963	0.00	0.00	0.00	31	M	--
November	1963	0.00	0.00	0.00	30	M	--
December	1963	0.00	0.00	0.00	31	M	--
January	1964	0.00	0.00	0.00	31	M	--
February	1964	0.00	0.00	0.00	29	M	--
March	1964	0.00	0.00	0.00	31	M	--
April	1964	0.00	0.00	0.00	30	M	--
May	1964	0.00	0.00	0.00	31	M	--
June	1964	0.00	0.00	0.00	30	M	--
July	1964	1.99	6.10	7.52	31	M	--
August	1964	7.23	22.17	27.35	31	M	--
September	1964	7.25	22.24	27.43	30	M	--
October	1964	8.88	27.25	33.61	31	M	--
November	1964	1.84	5.65	6.97	30	M	--
December	1964	5.19	15.93	19.65	31	M	--
January	1965	0.52	1.60	1.97	31	M	--
February	1965	0.21	0.63	0.77	28	M	--
March	1965	0.00	0.00	0.00	31	M	--
April	1965	0.00	0.00	0.00	30	M	--
May	1965	0.00	0.00	0.00	31	M	--
June	1965	0.00	0.00	0.00	30	M	--
July	1965	4.18	12.82	15.81	31	M	--
August	1965	10.72	32.91	40.58	31	M	--
September	1965	3.83	11.75	14.50	26	M	--
October	1965	--	--	--	0	I	--
November	1965	3.63	11.15	13.75	29	M	--
December	1965	2.21	6.79	8.38	31	M	--
January	1966	1.98	6.08	7.50	31	M	--
February	1966	4.17	12.79	15.78	28	M	--
March	1966	4.93	15.14	18.67	31	M	--
April	1966	2.71	8.30	10.24	30	M	--
May	1966	1.29	3.95	4.87	29	M	--
June	1966	--	--	--	0	I	--
July	1966	--	--	--	0	I	--

Army-1 WW Monthly Pumping Data

August	1966	11.58	35.54	43.83	28	M	--
September	1966	0.82	2.52	3.10	5	M	--
October	1966	3.42	10.50	12.94	31	M	--
November	1966	2.55	7.81	9.64	30	M	--
December	1966	4.11	12.61	15.55	31	M	--
January	1967	0.88	2.71	3.35	31	M	--
February	1967	2.92	8.96	11.05	28	M	--
March	1967	5.76	17.69	21.82	31	M	--
April	1967	4.68	14.36	17.71	30	M	--
May	1967	10.11	31.02	38.26	31	M	--
June	1967	10.45	32.08	39.56	30	M	--
July	1967	3.55	10.89	13.43	365	R	estimated
August	1967	3.55	10.89	13.43	365	R	estimated
September	1967	3.55	10.89	13.43	365	R	estimated
October	1967	3.55	10.89	13.43	365	R	estimated
November	1967	3.55	10.89	13.43	365	R	estimated
December	1967	3.55	10.89	13.43	365	R	estimated
January	1968	4.39	13.48	16.62	366	R	estimated
February	1968	4.39	13.48	16.62	366	R	estimated
March	1968	4.39	13.48	16.62	366	R	estimated
April	1968	4.39	13.48	16.62	366	R	estimated
May	1968	4.39	13.48	16.62	366	R	estimated
June	1968	4.39	13.48	16.62	366	R	estimated
July	1968	4.39	13.48	16.62	366	R	estimated
August	1968	4.39	13.48	16.62	366	R	estimated
September	1968	4.39	13.48	16.62	366	R	estimated
October	1968	4.39	13.48	16.62	366	R	estimated
November	1968	4.39	13.48	16.62	366	R	estimated
December	1968	4.39	13.48	16.62	366	R	estimated
January	1969	6.51	19.97	24.63	365	R	estimated
February	1969	6.51	19.97	24.63	365	R	estimated
March	1969	6.51	19.97	24.63	365	R	estimated
April	1969	6.51	19.97	24.63	365	R	estimated
May	1969	6.51	19.97	24.63	365	R	estimated
June	1969	6.51	19.97	24.63	365	R	estimated
July	1969	6.51	19.97	24.63	365	R	estimated
August	1969	6.51	19.97	24.63	365	R	estimated
September	1969	6.51	19.97	24.63	365	R	estimated
October	1969	6.51	19.97	24.63	365	R	estimated
November	1969	6.51	19.97	24.63	365	R	estimated
December	1969	6.51	19.97	24.63	365	R	estimated
January	1970	5.78	17.75	21.89	365	R	estimated
February	1970	5.78	17.75	21.89	365	R	estimated
March	1970	5.78	17.75	21.89	365	R	estimated
April	1970	5.78	17.75	21.89	365	R	estimated
May	1970	5.78	17.75	21.89	365	R	estimated
June	1970	5.78	17.75	21.89	365	R	estimated
July	1970	5.78	17.75	21.89	365	R	estimated
August	1970	5.78	17.75	21.89	365	R	estimated
September	1970	5.78	17.75	21.89	365	R	estimated
October	1970	5.78	17.75	21.89	365	R	estimated
November	1970	5.78	17.75	21.89	365	R	estimated

Army-1 WW Monthly Pumping Data

December	1970	5.78	17.75	21.89	365	R	estimated
January	1971	8.01	24.57	30.31	365	R	estimated
February	1971	8.01	24.57	30.31	365	R	estimated
March	1971	8.01	24.57	30.31	365	R	estimated
April	1971	8.01	24.57	30.31	365	R	estimated
May	1971	8.01	24.57	30.31	365	R	estimated
June	1971	8.01	24.57	30.31	365	R	estimated
July	1971	8.01	24.57	30.31	365	R	estimated
August	1971	8.01	24.57	30.31	365	R	estimated
September	1971	8.01	24.57	30.31	365	R	estimated
October	1971	8.01	24.57	30.31	365	R	estimated
November	1971	8.01	24.57	30.31	365	R	estimated
December	1971	8.01	24.57	30.31	365	R	estimated
January	1972	7.12	21.84	26.94	366	H	estimated
February	1972	7.12	21.84	26.94	366	H	estimated
March	1972	7.12	21.84	26.94	366	H	estimated
April	1972	7.12	21.84	26.94	366	H	estimated
May	1972	7.12	21.84	26.94	366	H	estimated
June	1972	7.12	21.84	26.94	366	H	estimated
July	1972	7.12	21.84	26.94	366	H	estimated
August	1972	7.12	21.84	26.94	366	H	estimated
September	1972	7.12	21.84	26.94	366	H	estimated
October	1972	7.12	21.84	26.94	366	H	estimated
November	1972	7.12	21.84	26.94	366	H	estimated
December	1972	7.12	21.84	26.94	366	H	estimated
January	1973	5.84	17.92	22.11	365	H	estimated
February	1973	5.84	17.92	22.11	365	H	estimated
March	1973	5.84	17.92	22.11	365	H	estimated
April	1973	5.84	17.92	22.11	365	H	estimated
May	1973	5.84	17.92	22.11	365	H	estimated
June	1973	5.84	17.92	22.11	365	H	estimated
July	1973	5.84	17.92	22.11	365	H	estimated
August	1973	5.84	17.92	22.11	365	H	estimated
September	1973	5.84	17.92	22.11	365	H	estimated
October	1973	5.84	17.92	22.11	365	H	estimated
November	1973	5.84	17.92	22.11	365	H	estimated
December	1973	5.84	17.92	22.11	365	H	estimated
January	1974	6.49	19.92	24.57	365	H	estimated
February	1974	6.49	19.92	24.57	365	H	estimated
March	1974	6.49	19.92	24.57	365	H	estimated
April	1974	6.49	19.92	24.57	365	H	estimated
May	1974	6.49	19.92	24.57	365	H	estimated
June	1974	6.49	19.92	24.57	365	H	estimated
July	1974	6.49	19.92	24.57	365	H	estimated
August	1974	6.49	19.92	24.57	365	H	estimated
September	1974	6.49	19.92	24.57	365	H	estimated
October	1974	6.49	19.92	24.57	365	H	estimated
November	1974	6.49	19.92	24.57	365	H	estimated
December	1974	6.49	19.92	24.57	365	H	estimated
January	1975	6.38	19.59	24.16	365	H	estimated
February	1975	6.38	19.59	24.16	365	H	estimated
March	1975	6.38	19.59	24.16	365	H	estimated

### Army-1 WW Monthly Pumping Data

April	1975	6.38	19.59	24.16	365	H	estimated
May	1975	6.38	19.59	24.16	365	H	estimated
June	1975	6.38	19.59	24.16	365	H	estimated
July	1975	6.38	19.59	24.16	365	H	estimated
August	1975	6.38	19.59	24.16	365	H	estimated
September	1975	6.38	19.59	24.16	365	H	estimated
October	1975	6.38	19.59	24.16	365	H	estimated
November	1975	6.38	19.59	24.16	365	H	estimated
December	1975	6.38	19.59	24.16	365	H	estimated
January	1976	5.41	16.60	20.47	366	H	estimated
February	1976	5.41	16.60	20.47	366	H	estimated
March	1976	5.41	16.60	20.47	366	H	estimated
April	1976	5.41	16.60	20.47	366	H	estimated
May	1976	5.41	16.60	20.47	366	H	estimated
June	1976	5.41	16.60	20.47	366	H	estimated
July	1976	5.41	16.60	20.47	366	H	estimated
August	1976	5.41	16.60	20.47	366	H	estimated
September	1976	5.41	16.60	20.47	366	H	estimated
October	1976	5.41	16.60	20.47	366	H	estimated
November	1976	5.41	16.60	20.47	366	H	estimated
December	1976	5.41	16.60	20.47	366	H	estimated
January	1977	4.81	14.75	18.20	365	H	estimated
February	1977	4.81	14.75	18.20	365	H	estimated
March	1977	4.81	14.75	18.20	365	H	estimated
April	1977	4.81	14.75	18.20	365	H	estimated
May	1977	4.81	14.75	18.20	365	H	estimated
June	1977	4.81	14.75	18.20	365	H	estimated
July	1977	4.81	14.75	18.20	365	H	estimated
August	1977	4.81	14.75	18.20	365	H	estimated
September	1977	4.81	14.75	18.20	365	H	estimated
October	1977	4.81	14.75	18.20	365	H	estimated
November	1977	4.81	14.75	18.20	365	H	estimated
December	1977	4.81	14.75	18.20	365	H	estimated
January	1978	5.00	15.34	18.93	365	H	estimated
February	1978	5.00	15.34	18.93	365	H	estimated
March	1978	5.00	15.34	18.93	365	H	estimated
April	1978	5.00	15.34	18.93	365	H	estimated
May	1978	5.00	15.34	18.93	365	H	estimated
June	1978	5.00	15.34	18.93	365	H	estimated
July	1978	5.00	15.34	18.93	365	H	estimated
August	1978	5.00	15.34	18.93	365	H	estimated
September	1978	5.00	15.34	18.93	365	H	estimated
October	1978	5.00	15.34	18.93	365	H	estimated
November	1978	5.00	15.34	18.93	365	H	estimated
December	1978	5.00	15.34	18.93	365	H	estimated
January	1979	4.29	13.17	16.24	365	H	estimated
February	1979	4.29	13.17	16.24	365	H	estimated
March	1979	4.29	13.17	16.24	365	H	estimated
April	1979	4.29	13.17	16.24	365	H	estimated
May	1979	4.29	13.17	16.24	365	H	estimated
June	1979	4.29	13.17	16.24	365	H	estimated
July	1979	4.29	13.17	16.24	365	H	estimated

### Army-1 WW Monthly Pumping Data

August	1979	4.29	13.17	16.24	365	H	estimated
September	1979	4.29	13.17	16.24	365	H	estimated
October	1979	4.29	13.17	16.24	365	H	estimated
November	1979	4.29	13.17	16.24	365	H	estimated
December	1979	4.29	13.17	16.24	365	H	estimated
January	1980	4.94	15.16	18.70	366	H	estimated
February	1980	4.94	15.16	18.70	366	H	estimated
March	1980	4.94	15.16	18.70	366	H	estimated
April	1980	4.94	15.16	18.70	366	H	estimated
May	1980	4.94	15.16	18.70	366	H	estimated
June	1980	4.94	15.16	18.70	366	H	estimated
July	1980	4.94	15.16	18.70	366	H	estimated
August	1980	4.94	15.16	18.70	366	H	estimated
September	1980	4.94	15.16	18.70	366	H	estimated
October	1980	4.94	15.16	18.70	366	H	estimated
November	1980	4.94	15.16	18.70	366	H	estimated
December	1980	4.94	15.16	18.70	366	H	estimated
January	1981	5.46	16.75	20.66	365	H	estimated
February	1981	5.46	16.75	20.66	365	H	estimated
March	1981	5.46	16.75	20.66	365	H	estimated
April	1981	5.46	16.75	20.66	365	H	estimated
May	1981	5.46	16.75	20.66	365	H	estimated
June	1981	5.46	16.75	20.66	365	H	estimated
July	1981	5.46	16.75	20.66	365	H	estimated
August	1981	5.46	16.75	20.66	365	H	estimated
September	1981	5.46	16.75	20.66	365	H	estimated
October	1981	5.46	16.75	20.66	365	H	estimated
November	1981	5.46	16.75	20.66	365	H	estimated
December	1981	5.46	16.75	20.66	365	H	estimated
January	1982	6.08	18.67	23.03	365	H	estimated
February	1982	6.08	18.67	23.03	365	H	estimated
March	1982	6.08	18.67	23.03	365	H	estimated
April	1982	6.08	18.67	23.03	365	H	estimated
May	1982	6.08	18.67	23.03	365	H	estimated
June	1982	6.08	18.67	23.03	365	H	estimated
July	1982	6.08	18.67	23.03	365	H	estimated
August	1982	6.08	18.67	23.03	365	H	estimated
September	1982	6.08	18.67	23.03	365	H	estimated
October	1982	6.08	18.67	23.03	365	H	estimated
November	1982	6.08	18.67	23.03	365	H	estimated
December	1982	6.08	18.67	23.03	365	H	estimated
January	1983	5.18	15.88	19.59	31	M	--
February	1983	4.29	13.17	16.24	28	M	--
March	1983	3.41	10.46	12.90	31	M	--
April	1983	5.57	17.08	21.07	30	M	--
May	1983	4.15	12.72	15.69	31	M	--
June	1983	2.00	6.13	7.56	30	M	--
July	1983	5.99	18.38	22.67	31	M	--
August	1983	5.41	16.60	20.48	31	M	--
September	1983	6.45	19.79	24.41	30	M	--
October	1983	4.80	14.74	18.18	31	M	--
November	1983	4.61	14.14	17.44	30	M	--

Army-1 WW Monthly Pumping Data

December	1983	4.99	15.30	18.87	31	M	--
January	1984	4.01	12.30	15.18	31	M	--
February	1984	5.43	16.67	20.56	29	M	--
March	1984	5.19	15.91	19.62	31	M	--
April	1984	5.82	17.87	22.04	30	M	--
May	1984	4.45	13.66	16.84	31	M	--
June	1984	4.47	13.71	16.91	30	M	--
July	1984	7.25	22.24	27.44	31	M	--
August	1984	10.27	31.50	38.86	31	M	--
September	1984	10.15	31.13	38.40	30	M	--
October	1984	10.83	33.24	41.00	31	M	--
November	1984	9.35	28.69	35.39	30	M	--
December	1984	4.88	14.99	18.49	31	E	--
January	1985	1.06	3.26	4.02	31	E	--
February	1985	1.50	4.59	5.66	28	M	--
March	1985	1.59	4.88	6.02	31	M	--
April	1985	3.73	11.45	14.12	30	M	--
May	1985	2.18	6.70	8.26	31	M	--
June	1985	1.90	5.84	7.21	30	M	--
July	1985	4.88	14.97	18.46	31	M	--
August	1985	6.93	21.27	26.24	31	M	--
September	1985	4.04	12.40	15.29	30	M	--
October	1985	4.98	15.27	18.84	31	M	--
November	1985	5.16	15.82	19.51	30	M	--
December	1985	3.66	11.24	13.86	31	E	--
January	1986	5.33	16.36	20.18	31	M	--
February	1986	2.32	7.11	8.77	28	M	--
March	1986	1.47	4.50	5.55	31	M	--
April	1986	1.75	5.37	6.62	30	M	--
May	1986	0.92	2.83	3.50	31	M	--
June	1986	4.59	14.07	17.36	30	M	--
July	1986	5.67	17.41	21.47	31	M	--
August	1986	4.03	12.36	15.25	31	M	--
September	1986	3.18	9.75	12.02	30	M	--
October	1986	1.01	3.09	3.81	31	M	--
November	1986	1.91	5.87	7.24	30	M	--
December	1986	2.69	8.25	10.18	31	M	--
January	1987	2.70	8.30	10.23	31	M	--
February	1987	1.72	5.27	6.49	28	M	--
March	1987	2.07	6.35	7.83	31	M	--
April	1987	3.23	9.91	12.22	30	M	--
May	1987	3.61	11.08	13.67	31	M	--
June	1987	4.38	13.44	16.58	30	E	--
July	1987	5.62	17.23	21.26	31	M	--
August	1987	3.33	10.23	12.62	31	M	--
September	1987	0.12	0.37	0.46	30	M	--
October	1987	1.28	3.92	4.83	31	M	--
November	1987	3.59	11.02	13.60	30	M	--
December	1987	3.07	9.41	11.61	31	M	--
January	1988	2.73	8.39	10.35	31	M	--
February	1988	1.49	4.58	5.65	29	M	--
March	1988	7.24	22.22	27.40	31	M	--

Army-1 WW Monthly Pumping Data

April	1988	2.89	8.86	10.93	30	M	--
May	1988	5.92	18.16	22.39	31	M	--
June	1988	5.89	18.08	22.30	30	M	--
July	1988	3.80	11.67	14.39	31	M	--
August	1988	4.44	13.61	16.79	31	M	--
September	1988	2.68	8.21	10.13	30	M	--
October	1988	3.70	11.35	14.00	31	M	--
November	1988	5.73	17.58	21.68	30	E	--
December	1988	6.61	20.29	25.03	31	M	--
January	1989	6.29	19.29	23.79	31	M	--
February	1989	2.29	7.03	8.67	28	M	--
March	1989	8.29	25.43	31.36	31	M	--
April	1989	10.59	32.50	40.08	30	M	--
May	1989	11.76	36.08	44.50	31	M	--
June	1989	11.48	35.23	43.45	30	M	--
July	1989	11.25	34.51	42.56	31	M	--
August	1989	11.08	34.00	41.94	31	M	--
September	1989	10.72	32.91	40.59	30	M	--
October	1989	10.72	32.91	40.59	31	M	--
November	1989	9.49	29.13	35.93	30	M	--
December	1989	10.50	32.22	39.74	31	M	--
January	1990	11.43	35.07	43.26	31	M	--
February	1990	9.22	28.30	34.90	28	M	--
March	1990	10.64	32.64	40.25	31	M	--
April	1990	11.72	35.96	44.35	30	M	--
May	1990	10.97	33.67	41.53	31	M	--
June	1990	10.81	33.17	40.91	30	M	--
July	1990	10.90	33.46	41.27	31	M	--
August	1990	12.20	37.43	46.17	31	M	--
September	1990	9.57	29.37	36.23	30	M	--
October	1990	8.42	25.83	31.86	31	M	--
November	1990	9.94	30.51	37.62	30	M	--
December	1990	10.23	31.38	38.71	31	E	--
January	1991	11.32	34.74	42.84	31	E	--
February	1991	4.37	13.41	16.55	28	M	--
March	1991	6.12	18.78	23.16	31	M	--
April	1991	8.00	24.54	30.26	30	M	--
May	1991	12.24	37.56	46.32	31	M	--
June	1991	11.99	36.81	45.40	30	M	--
July	1991	7.07	21.70	26.77	31	M	--
August	1991	4.90	15.02	18.53	31	M	--
September	1991	11.37	34.89	43.04	30	M	--
October	1991	12.83	39.37	48.55	31	M	--
November	1991	11.09	34.02	41.96	30	M	--
December	1991	8.61	26.43	32.60	31	M	--
January	1992	11.21	34.40	42.43	31	M	--
February	1992	11.26	34.56	42.62	29	M	--
March	1992	10.65	32.69	40.32	31	M	--
April	1992	13.86	42.54	52.46	30	A	--
May	1992	13.52	41.49	51.18	31	A	--
June	1992	13.00	39.91	49.22	30	M	--
July	1992	11.41	35.00	43.17	31	M	--

Army-1 WW Monthly Pumping Data

August	1992	11.18	34.29	42.30	31	M	--
September	1992	10.32	31.67	39.06	30	A	--
October	1992	9.84	30.21	37.26	31	A	--
November	1992	11.53	35.38	43.64	30	M	--
December	1992	11.64	35.72	44.05	31	M	--
January	1993	11.69	35.88	44.25	31	M	--
February	1993	6.81	20.89	25.76	28	M	--
March	1993	7.65	23.47	28.94	31	M	--
April	1993	8.44	25.91	31.95	30	M	--
May	1993	12.71	39.01	48.12	31	M	--
June	1993	9.70	29.77	36.72	30	M	--
July	1993	9.72	29.83	36.79	31	M	--
August	1993	8.51	26.11	32.21	31	M	--
September	1993	6.76	20.73	25.57	30	M	--
October	1993	8.71	26.73	32.97	31	M	--
November	1993	7.20	22.11	27.27	30	M	--
December	1993	12.33	37.83	46.66	31	M	--
January	1994	10.57	32.43	39.99	31	A	--
February	1994	8.75	26.85	33.12	28	M	--
March	1994	12.22	37.51	46.26	31	M	--
April	1994	10.81	33.17	40.91	30	M	--
May	1994	9.98	30.62	37.76	31	M	--
June	1994	9.79	30.05	37.07	30	M	--
July	1994	2.22	6.82	8.41	31	M	--
August	1994	1.46	4.49	5.54	31	M	--
September	1994	3.15	9.68	11.94	30	M	--
October	1994	2.11	6.46	7.97	31	M	--
November	1994	2.55	7.82	9.65	30	M	--
December	1994	3.29	10.09	12.45	31	M	--
January	1995	3.81	11.70	14.43	31	M	--
February	1995	2.74	8.40	10.36	28	M	--
March	1995	0.47	1.43	1.77	31	M	--
April	1995	0.64	1.98	2.44	30	M	--
May	1995	2.07	6.36	7.84	31	M	--
June	1995	1.25	3.84	4.74	30	M	--
July	1995	2.95	9.05	11.17	31	M	--
August	1995	0.74	2.26	2.79	31	M	--
September	1995	2.99	9.17	11.31	30	M	--
October	1995	2.86	8.77	10.81	31	M	--
November	1995	1.64	5.03	6.20	30	M	--
December	1995	1.97	6.05	7.46	31	M	--
January	1996	2.30	7.06	8.71	31	M	--
February	1996	0.86	2.64	3.25	29	M	--
March	1996	0.74	2.27	2.80	31	M	--
April	1996	2.04	6.25	7.70	30	M	--
May	1996	3.80	11.67	14.39	31	M	--
June	1996	0.79	2.41	2.97	30	M	--
July	1996	1.26	3.86	4.76	31	M	--
August	1996	1.36	4.16	5.13	31	M	--
September	1996	1.53	4.70	5.80	30	M	--
October	1996	1.45	4.44	5.48	31	M	--
November	1996	0.68	2.09	2.58	30	M	--

Army-1 WW Monthly Pumping Data

December	1996	0.85	2.62	3.23	31	M	--
January	1997	1.35	4.15	5.11	31	M	--
February	1997	0.65	1.99	2.46	28	M	--
March	1997	0.61	1.86	2.29	31	M	--
April	1997	0.53	1.63	2.01	30	M	--
May	1997	1.27	3.88	4.79	31	M	--
June	1997	0.65	2.00	2.47	30	M	--
July	1997	0.93	2.85	3.52	31	M	--
August	1997	1.35	4.15	5.12	31	M	--
September	1997	1.23	3.77	4.64	30	M	--
October	1997	0.96	2.94	3.63	31	M	--
November	1997	1.08	3.32	4.10	30	M	--
December	1997	0.82	2.51	3.10	31	M	--
January	1998	0.91	2.78	3.43	31	M	--
February	1998	0.11	0.34	0.41	28	M	--
March	1998	0.00	0.00	0.00	31	M	--
April	1998	0.01	0.02	0.02	30	M	--
May	1998	0.01	0.02	0.02	31	M	--
June	1998	0.00	0.00	0.00	30	M	--
July	1998	0.00	0.00	0.00	31	M	--
August	1998	0.00	0.00	0.00	31	M	--
September	1998	0.00	0.00	0.00	30	M	--
October	1998	0.00	0.00	0.00	31	M	--
November	1998	0.00	0.00	0.00	30	M	--
December	1998	0.00	0.00	0.00	31	M	--
January	1999	0.01	0.04	0.05	31	M	--
February	1999	0.01	0.01	0.02	28	M	--
March	1999	0.12	0.37	0.45	31	M	--
April	1999	0.25	0.76	0.93	30	M	--
May	1999	0.63	1.94	2.39	31	M	--
June	1999	0.04	0.11	0.14	30	M	--
July	1999	0.19	0.57	0.70	31	M	--
August	1999	0.10	0.32	0.39	31	M	--
September	1999	0.08	0.25	0.31	30	M	--
October	1999	0.06	0.20	0.24	31	M	--
November	1999	0.01	0.04	0.05	30	M	--
December	1999	0.01	0.03	0.04	31	M	--
January	2000	0.04	0.11	0.14	31	M	--
February	2000	0.02	0.04	0.05	29	M	--
March	2000	0.04	0.12	0.15	31	M	--
April	2000	0.18	0.54	0.67	30	M	--
May	2000	0.14	0.42	0.52	31	M	--
June	2000	0.10	0.31	0.38	30	M	--
July	2000	0.04	0.13	0.16	31	M	--
August	2000	0.00	0.00	0.00	31	M	--
September	2000	0.01	0.01	0.02	30	M	--
October	2000	0.08	0.24	0.29	31	M	--
November	2000	0.00	0.00	0.00	30	M	--
December	2000	0.00	0.00	0.00	31	M	--
January	2001	0.00	0.00	0.00	31	M	--
February	2001	0.03	0.09	0.11	28	M	--
March	2001	0.00	0.00	0.00	31	M	--

### Army-1 WW Monthly Pumping Data

April	2001	2.15	6.59	8.13	30	M	--
May	2001	4.81	14.76	18.20	31	M	--
June	2001	4.74	14.53	17.92	30	M	--
July	2001	7.20	22.09	27.25	31	M	--
August	2001	4.61	14.14	17.44	31	M	--
September	2001	3.62	11.10	13.69	30	M	--
October	2001	4.40	13.51	16.66	31	M	--
November	2001	1.84	5.66	6.98	30	M	--
December	2001	4.16	12.78	15.76	31	M	--
January	2002	4.14	12.71	15.67	31	M	--
February	2002	3.78	11.59	14.29	28	M	--
March	2002	4.99	15.30	18.87	31	M	--
April	2002	4.94	15.15	18.69	30	M	--
May	2002	5.38	16.50	20.35	31	M	--
June	2002	5.42	16.65	20.53	30	M	--
July	2002	6.01	18.45	22.76	31	M	--
August	2002	4.94	15.15	18.69	31	M	--
September	2002	3.91	12.01	14.82	30	M	--
October	2002	4.39	13.48	16.63	31	M	--
November	2002	2.71	8.30	10.24	30	M	--
December	2002	2.41	7.39	9.12	31	M	--
January	2003	4.52	13.86	17.10	31	M	--
February	2003	4.34	13.31	16.42	28	M	--
March	2003	5.42	16.62	20.50	31	M	--
April	2003	4.89	15.01	18.52	30	M	--
May	2003	2.93	8.99	11.09	31	M	--
June	2003	1.87	5.74	7.07	30	M	--
July	2003	5.04	15.48	19.09	31	M	--
August	2003	4.11	12.61	15.55	31	M	--
September	2003	4.27	13.12	16.18	30	M	--
October	2003	4.74	14.54	17.94	31	M	--
November	2003	4.56	13.98	17.25	30	M	--
December	2003	4.25	13.04	16.08	31	M	--

<sup>a</sup>Source: A = Estimated from pump run times recorded on daily ammeter charts supplied by Bechtel, Nevada (Bechtel) or Reynolds Electrical and Engineering Company (REECO).

E = Taken from Bechtel or REECO water production reports and includes estimated values.

I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.

M = Taken from Bechtel or REECO water production reports.

R = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

<sup>b</sup> estimated indicates monthly value was estimated from yearly total

UE-5c WW Monthly Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>
April	1966	--	--	--	0	U
May	1966	--	--	--	0	U
June	1966	--	--	--	0	U
July	1966	--	--	--	0	U
August	1966	--	--	--	0	U
September	1966	--	--	--	0	U
October	1966	--	--	--	0	U
November	1966	--	--	--	0	U
December	1966	--	--	--	0	U
January	1967	--	--	--	0	U
February	1967	1.16	3.55	4.37	28	M
March	1967	6.71	20.60	25.40	31	M
April	1967	2.54	7.78	9.60	30	M
May	1967	0.00	0.00	0.00	31	M
June	1967	0.93	2.85	3.52	30	M
July	1967	--	--	--	0	I
August	1967	--	--	--	0	I
September	1967	--	--	--	0	I
October	1967	--	--	--	0	I
November	1967	--	--	--	0	I
December	1967	--	--	--	0	I
January	1968	--	--	--	0	I
February	1968	--	--	--	0	I
March	1968	--	--	--	0	I
April	1968	--	--	--	0	I
May	1968	--	--	--	0	I
June	1968	--	--	--	0	I
July	1968	--	--	--	0	I
August	1968	--	--	--	0	I
September	1968	--	--	--	0	I
October	1968	--	--	--	0	I
November	1968	--	--	--	0	I
December	1968	--	--	--	0	I
January	1969	--	--	--	0	I
February	1969	--	--	--	0	I
March	1969	--	--	--	0	I
April	1969	--	--	--	0	I
May	1969	--	--	--	0	I
June	1969	--	--	--	0	I
July	1969	--	--	--	0	I
August	1969	--	--	--	0	I
September	1969	--	--	--	0	I
October	1969	--	--	--	0	I
November	1969	--	--	--	0	I
December	1969	--	--	--	0	I
January	1970	--	--	--	0	I
February	1970	--	--	--	0	I
March	1970	--	--	--	0	I
April	1970	--	--	--	0	I

UE-5c WW Monthly Data

May	1970	--	--	--	0	
June	1970	--	--	--	0	
July	1970	--	--	--	0	
August	1970	--	--	--	0	
September	1970	--	--	--	0	
October	1970	--	--	--	0	
November	1970	--	--	--	0	
December	1970	--	--	--	0	
January	1971	--	--	--	0	
February	1971	--	--	--	0	
March	1971	--	--	--	0	
April	1971	--	--	--	0	
May	1971	--	--	--	0	
June	1971	--	--	--	0	
July	1971	--	--	--	0	
August	1971	--	--	--	0	
September	1971	--	--	--	0	
October	1971	--	--	--	0	
November	1971	--	--	--	0	
December	1971	--	--	--	0	
January	1972	--	--	--	0	
February	1972	--	--	--	0	
March	1972	--	--	--	0	
April	1972	--	--	--	0	
May	1972	--	--	--	0	
June	1972	--	--	--	0	
July	1972	--	--	--	0	
August	1972	--	--	--	0	
September	1972	--	--	--	0	
October	1972	--	--	--	0	
November	1972	--	--	--	0	
December	1972	--	--	--	0	
January	1973	--	--	--	0	
February	1973	--	--	--	0	
March	1973	--	--	--	0	
April	1973	--	--	--	0	
May	1973	--	--	--	0	
June	1973	--	--	--	0	
July	1973	--	--	--	0	
August	1973	--	--	--	0	
September	1973	--	--	--	0	
October	1973	--	--	--	0	
November	1973	--	--	--	0	
December	1973	--	--	--	0	
January	1974	--	--	--	0	
February	1974	--	--	--	0	
March	1974	--	--	--	0	
April	1974	--	--	--	0	
May	1974	--	--	--	0	
June	1974	--	--	--	0	
July	1974	--	--	--	0	
August	1974	--	--	--	0	

UE-5c WW Monthly Data

September	1974	--	--	--	0	
October	1974	--	--	--	0	
November	1974	--	--	--	0	
December	1974	--	--	--	0	
January	1975	--	--	--	0	
February	1975	--	--	--	0	
March	1975	--	--	--	0	
April	1975	--	--	--	0	
May	1975	--	--	--	0	
June	1975	--	--	--	0	
July	1975	--	--	--	0	
August	1975	--	--	--	0	
September	1975	--	--	--	0	
October	1975	--	--	--	0	
November	1975	--	--	--	0	
December	1975	--	--	--	0	
January	1976	--	--	--	0	
February	1976	--	--	--	0	
March	1976	--	--	--	0	
April	1976	--	--	--	0	
May	1976	--	--	--	0	
June	1976	--	--	--	0	
July	1976	--	--	--	0	
August	1976	--	--	--	0	
September	1976	--	--	--	0	
October	1976	--	--	--	0	
November	1976	--	--	--	0	
December	1976	--	--	--	0	
January	1977	--	--	--	0	
February	1977	--	--	--	0	
March	1977	--	--	--	0	
April	1977	--	--	--	0	
May	1977	--	--	--	0	
June	1977	--	--	--	0	
July	1977	--	--	--	0	
August	1977	--	--	--	0	
September	1977	--	--	--	0	
October	1977	--	--	--	0	
November	1977	--	--	--	0	
December	1977	--	--	--	0	
January	1978	--	--	--	0	
February	1978	--	--	--	0	
March	1978	--	--	--	0	
April	1978	--	--	--	0	
May	1978	--	--	--	0	
June	1978	--	--	--	0	
July	1978	--	--	--	0	
August	1978	--	--	--	0	
September	1978	--	--	--	0	
October	1978	--	--	--	0	
November	1978	--	--	--	0	
December	1978	--	--	--	0	

UE-5c WW Monthly Data

January	1979	--	--	--	0	
February	1979	--	--	--	0	
March	1979	--	--	--	0	
April	1979	--	--	--	0	
May	1979	--	--	--	0	
June	1979	--	--	--	0	
July	1979	--	--	--	0	
August	1979	--	--	--	0	
September	1979	--	--	--	0	
October	1979	--	--	--	0	
November	1979	--	--	--	0	
December	1979	--	--	--	0	
January	1980	--	--	--	0	
February	1980	--	--	--	0	
March	1980	--	--	--	0	
April	1980	--	--	--	0	
May	1980	--	--	--	0	
June	1980	--	--	--	0	
July	1980	--	--	--	0	
August	1980	--	--	--	0	
September	1980	--	--	--	0	
October	1980	--	--	--	0	
November	1980	--	--	--	0	
December	1980	--	--	--	0	
January	1981	--	--	--	0	
February	1981	--	--	--	0	
March	1981	--	--	--	0	
April	1981	--	--	--	0	
May	1981	--	--	--	0	
June	1981	--	--	--	0	
July	1981	--	--	--	0	
August	1981	--	--	--	0	
September	1981	--	--	--	0	
October	1981	--	--	--	0	
November	1981	--	--	--	0	
December	1981	--	--	--	0	
January	1982	--	--	--	0	
February	1982	--	--	--	0	
March	1982	--	--	--	0	
April	1982	--	--	--	0	
May	1982	--	--	--	0	
June	1982	--	--	--	0	
July	1982	--	--	--	0	
August	1982	--	--	--	0	
September	1982	--	--	--	0	
October	1982	--	--	--	0	
November	1982	--	--	--	0	
December	1982	--	--	--	0	
January	1983	0.12	0.36	0.45	31	M
February	1983	0.06	0.20	0.24	28	M
March	1983	0.21	0.63	0.78	31	M
April	1983	0.00	0.00	0.00	30	M

UE-5c WW Monthly Data

May	1983	0.18	0.56	0.69	31	M
June	1983	0.08	0.25	0.30	30	M
July	1983	0.22	0.68	0.84	31	M
August	1983	0.09	0.27	0.33	31	M
September	1983	0.11	0.33	0.40	30	M
October	1983	0.11	0.33	0.41	31	M
November	1983	0.05	0.14	0.17	30	M
December	1983	0.04	0.12	0.15	31	M
January	1984	0.83	2.55	3.15	31	M
February	1984	0.05	0.15	0.19	29	M
March	1984	0.14	0.42	0.52	31	M
April	1984	0.14	0.43	0.53	30	M
May	1984	0.27	0.82	1.02	31	M
June	1984	0.02	0.06	0.07	30	M
July	1984	0.26	0.81	0.99	31	M
August	1984	0.09	0.29	0.35	31	M
September	1984	0.11	0.34	0.42	30	M
October	1984	0.19	0.59	0.72	31	M
November	1984	0.13	0.40	0.50	30	M
December	1984	0.17	0.51	0.63	31	E
January	1985	0.54	1.66	2.04	31	E
February	1985	0.41	1.25	1.54	28	M
March	1985	0.49	1.50	1.85	31	M
April	1985	0.30	0.91	1.12	30	M
May	1985	0.31	0.96	1.18	31	M
June	1985	0.51	1.57	1.94	30	M
July	1985	0.42	1.28	1.58	31	M
August	1985	0.46	1.40	1.73	31	M
September	1985	0.46	1.42	1.75	30	M
October	1985	0.35	1.07	1.32	31	M
November	1985	0.44	1.36	1.68	30	M
December	1985	0.29	0.90	1.10	31	E
January	1986	0.14	0.44	0.54	31	M
February	1986	0.37	1.13	1.39	28	M
March	1986	0.37	1.13	1.40	31	M
April	1986	0.44	1.36	1.68	30	M
May	1986	0.47	1.43	1.77	31	M
June	1986	0.50	1.53	1.88	30	M
July	1986	0.30	0.92	1.14	31	M
August	1986	0.54	1.66	2.05	31	M
September	1986	0.34	1.03	1.27	30	M
October	1986	0.07	0.22	0.27	31	M
November	1986	0.00	0.00	0.00	30	M
December	1986	0.00	0.00	0.00	31	M
January	1987	0.00	0.00	0.00	31	M
February	1987	0.00	0.00	0.00	28	M
March	1987	0.00	0.00	0.00	31	M
April	1987	0.16	0.49	0.60	30	M
May	1987	0.00	0.00	0.00	31	M
June	1987	0.00	0.00	0.00	30	M
July	1987	0.00	0.00	0.00	31	M
August	1987	2.80	8.60	10.60	31	M

UE-5c WW Monthly Data

September	1987	0.86	2.64	3.26	30	M
October	1987	1.75	5.38	6.63	31	M
November	1987	1.51	4.62	5.70	30	M
December	1987	1.28	3.93	4.85	31	M
January	1988	0.66	2.02	2.50	31	M
February	1988	0.74	2.26	2.79	29	M
March	1988	0.57	1.73	2.14	31	M
April	1988	0.65	2.00	2.46	30	M
May	1988	0.97	2.98	3.67	31	M
June	1988	1.08	3.30	4.07	30	M
July	1988	1.33	4.08	5.03	31	M
August	1988	0.56	1.73	2.13	31	M
September	1988	0.57	1.74	2.15	30	M
October	1988	0.77	2.36	2.91	31	M
November	1988	0.56	1.70	2.10	30	M
December	1988	0.34	1.05	1.30	31	M
January	1989	0.36	1.09	1.35	31	M
February	1989	2.66	8.17	10.08	28	M
March	1989	0.16	0.50	0.62	31	M
April	1989	0.00	0.00	0.00	30	M
May	1989	0.00	0.00	0.00	31	M
June	1989	0.00	0.00	0.00	30	M
July	1989	0.00	0.00	0.00	31	M
August	1989	0.00	0.00	0.00	31	M
September	1989	0.00	0.00	0.00	30	M
October	1989	0.00	0.00	0.00	31	M
November	1989	0.00	0.00	0.00	30	M
December	1989	0.00	0.00	0.00	31	M
January	1990	0.00	0.00	0.00	31	M
February	1990	0.00	0.00	0.00	28	M
March	1990	0.00	0.00	0.00	31	M
April	1990	0.00	0.00	0.00	30	M
May	1990	0.00	0.00	0.00	31	M
June	1990	0.00	0.00	0.00	30	M
July	1990	0.00	0.00	0.00	31	M
August	1990	0.00	0.00	0.00	31	M
September	1990	0.00	0.00	0.00	30	M
October	1990	0.00	0.00	0.00	31	M
November	1990	0.00	0.00	0.00	30	M
December	1990	0.00	0.00	0.00	31	M
January	1991	0.00	0.00	0.00	31	M
February	1991	0.00	0.00	0.00	28	M
March	1991	0.14	0.42	0.52	31	M
April	1991	0.37	1.14	1.40	30	M
May	1991	0.41	1.26	1.55	31	M
June	1991	0.51	1.56	1.93	30	M
July	1991	0.57	1.74	2.15	31	M
August	1991	0.40	1.22	1.51	31	M
September	1991	0.50	1.55	1.91	30	M
October	1991	0.87	2.68	3.31	31	M
November	1991	0.44	1.35	1.66	30	M
December	1991	0.34	1.04	1.28	31	M

UE-5c WW Monthly Data

January	1992	0.16	0.48	0.59	31	M
February	1992	0.39	1.19	1.47	29	M
March	1992	0.16	0.49	0.60	31	M
April	1992	0.25	0.75	0.93	30	M
May	1992	0.48	1.47	1.81	31	M
June	1992	0.46	1.40	1.72	30	M
July	1992	0.68	2.10	2.59	31	M
August	1992	0.91	2.79	3.44	31	M
September	1992	0.77	2.37	2.93	30	M
October	1992	0.19	0.57	0.70	31	M
November	1992	0.57	1.75	2.15	30	M
December	1992	0.28	0.87	1.07	31	M
January	1993	1.07	3.29	4.05	31	M
February	1993	0.30	0.92	1.13	28	M
March	1993	0.45	1.38	1.70	31	M
April	1993	0.47	1.45	1.79	30	M
May	1993	1.06	3.25	4.01	31	M
June	1993	0.49	1.49	1.84	30	M
July	1993	0.49	1.49	1.84	31	M
August	1993	0.60	1.84	2.27	31	M
September	1993	0.56	1.72	2.12	30	M
October	1993	0.70	2.16	2.66	31	M
November	1993	0.52	1.60	1.97	30	M
December	1993	0.59	1.79	2.21	31	M
January	1994	0.71	2.17	2.68	31	M
February	1994	0.61	1.89	2.33	28	M
March	1994	0.54	1.64	2.03	31	M
April	1994	0.00	0.00	0.00	30	M
May	1994	0.61	1.86	2.30	31	M
June	1994	0.45	1.38	1.70	30	M
July	1994	0.36	1.10	1.35	31	M
August	1994	0.92	2.82	3.48	31	M
September	1994	0.72	2.21	2.73	30	M
October	1994	1.04	3.20	3.94	31	M
November	1994	0.14	0.42	0.52	30	M
December	1994	0.39	1.21	1.49	31	M
January	1995	0.53	1.61	1.99	31	M
February	1995	0.93	2.85	3.52	28	M
March	1995	0.00	0.00	0.00	31	M
April	1995	0.00	0.00	0.00	30	M
May	1995	0.00	0.01	0.02	31	M
June	1995	1.05	3.23	3.98	30	M
July	1995	1.79	5.50	6.79	31	M
August	1995	0.67	2.04	2.52	31	M
September	1995	0.79	2.41	2.98	30	M
October	1995	0.40	1.24	1.53	31	M
November	1995	0.00	0.00	0.00	30	M
December	1995	0.94	2.89	3.56	31	M
January	1996	0.49	1.49	1.84	31	M
February	1996	0.10	0.31	0.38	29	M
March	1996	0.42	1.28	1.58	31	M
April	1996	0.00	0.00	0.00	30	M

UE-5c WW Monthly Data

May	1996	2.07	6.36	7.84	31	M
June	1996	0.00	0.00	0.00	30	M
July	1996	0.94	2.89	3.56	31	M
August	1996	0.00	0.00	0.00	31	M
September	1996	0.48	1.49	1.83	30	M
October	1996	0.87	2.66	3.28	31	M
November	1996	0.87	2.68	3.31	30	M
December	1996	0.00	0.00	0.00	31	M
January	1997	1.01	3.11	3.84	31	M
February	1997	0.27	0.84	1.04	28	M
March	1997	0.85	2.60	3.20	31	M
April	1997	0.58	1.78	2.19	30	M
May	1997	0.00	0.00	0.00	31	M
June	1997	0.92	2.82	3.47	30	M
July	1997	0.83	2.55	3.14	31	M
August	1997	0.00	0.00	0.00	31	M
September	1997	0.40	1.22	1.51	30	M
October	1997	0.07	0.20	0.25	31	M
November	1997	1.34	4.11	5.07	30	M
December	1997	0.00	0.00	0.00	31	M
January	1998	1.31	4.01	4.94	31	M
February	1998	0.00	0.00	0.00	28	M
March	1998	0.00	0.00	0.00	31	M
April	1998	0.99	3.04	3.74	30	M
May	1998	0.00	0.00	0.00	31	M
June	1998	0.00	0.00	0.00	30	M
July	1998	0.46	1.42	1.75	31	M
August	1998	0.00	0.00	0.00	31	M
September	1998	0.00	0.00	0.00	30	M
October	1998	0.00	0.00	0.00	31	M
November	1998	0.01	0.03	0.04	30	M
December	1998	0.00	0.00	0.00	31	M
January	1999	0.04	0.11	0.14	31	M
February	1999	0.00	0.00	0.00	28	M
March	1999	0.00	0.00	0.00	31	M
April	1999	0.02	0.07	0.09	30	M
May	1999	0.00	0.00	0.00	31	M
June	1999	0.00	0.00	0.00	30	M
July	1999	0.11	0.34	0.42	31	M
August	1999	0.00	0.00	0.00	31	M
September	1999	0.00	0.00	0.00	30	M
October	1999	0.00	0.00	0.00	31	M
November	1999	0.00	0.00	0.00	30	M
December	1999	0.00	0.00	0.00	31	M
January	2000	0.00	0.00	0.00	31	M
February	2000	0.00	0.00	0.00	29	M
March	2000	0.00	0.00	0.00	31	M
April	2000	0.05	0.14	0.17	30	M
May	2000	0.00	0.00	0.00	31	M
June	2000	0.00	0.00	0.00	30	M
July	2000	0.13	0.41	0.51	31	M
August	2000	0.17	0.51	0.63	31	M

UE-5c WW Monthly Data

September	2000	0.00	0.00	0.00	30	M
October	2000	0.00	0.00	0.00	31	M
November	2000	0.00	0.00	0.00	30	M
December	2000	0.00	0.00	0.00	31	M
January	2001	0.00	0.00	0.00	31	M
February	2001	0.00	0.00	0.00	28	M
March	2001	0.03	0.10	0.12	31	M
April	2001	0.04	0.13	0.16	30	M
May	2001	0.00	0.00	0.00	31	M
June	2001	0.00	0.00	0.00	30	M
July	2001	0.00	0.00	0.00	31	M
August	2001	0.00	0.00	0.00	31	M
September	2001	0.00	0.00	0.00	30	M
October	2001	0.04	0.12	0.15	31	M
November	2001	0.00	0.00	0.00	30	M
December	2001	0.00	0.00	0.00	31	M
January	2002	0.00	0.00	0.00	31	M
February	2002	0.00	0.00	0.00	28	M
March	2002	0.00	0.00	0.00	31	M
April	2002	0.00	0.00	0.00	30	M
May	2002	0.00	0.00	0.00	31	M
June	2002	0.00	0.00	0.00	30	M
July	2002	0.00	0.00	0.00	31	M
August	2002	0.00	0.00	0.00	31	M
September	2002	0.00	0.00	0.00	30	M
October	2002	0.00	0.00	0.00	31	M
November	2002	0.00	0.00	0.00	30	M
December	2002	0.00	0.00	0.00	31	M
January	2003	0.09	0.27	0.33	31	M
February	2003	0.00	0.00	0.00	28	M
March	2003	0.00	0.00	0.00	31	M
April	2003	0.00	0.00	0.00	30	M
May	2003	0.00	0.00	0.00	31	M
June	2003	0.00	0.00	0.00	30	M
July	2003	0.00	0.00	0.00	31	M
August	2003	0.00	0.00	0.00	31	M
September	2003	0.00	0.00	0.00	30	M
October	2003	0.00	0.00	0.00	31	M
November	2003	0.00	0.00	0.00	30	M
December	2003	0.00	0.00	0.00	31	M

<sup>a</sup>Source: E = Taken from Bechtel or REECO water production reports and includes estimated values.

I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.

M = Taken from Bechtel or REECO water production reports.

U = Unknown whether well was available or used for water supply.

## Well RNM-2s Monthly Data

Month	Year	Million Gallons	Acre-Feet	Million Liters	Days Reported	Source <sup>a</sup>
October	1975	12.02	36.88	45.48	28	L
November	1975	13.53	41.53	51.22	30	L
December	1975	11.18	34.31	42.32	31	L
January	1976	8.87	27.21	33.56	31	L
February	1976	12.37	37.97	46.83	29	L
March	1976	13.76	42.21	52.06	31	L
April	1976	13.21	40.55	50.01	30	L
May	1976	8.14	24.99	30.82	31	L
June	1976	20.20	61.98	76.44	30	L
July	1976	16.48	50.56	62.36	31	L
August	1976	16.20	49.72	61.32	31	L
September	1976	16.15	49.56	61.13	30	L
October	1976	16.68	51.17	63.11	31	L
November	1976	16.16	49.59	61.16	30	L
December	1976	13.32	40.87	50.40	31	L
January	1977	16.55	50.79	62.64	31	L
February	1977	15.00	46.03	56.77	28	L
March	1977	16.00	49.10	60.56	31	L
April	1977	13.96	42.83	52.83	30	L
May	1977	16.61	50.97	62.87	31	L
June	1977	8.68	26.63	32.84	30	L
July	1977	4.11	12.60	15.55	31	L
August	1977	7.68	23.56	29.05	31	L
September	1977	2.59	7.94	9.80	30	L
October	1977	22.79	69.93	86.25	31	L
November	1977	27.37	83.99	103.58	30	L
December	1977	28.47	87.36	107.75	31	L
January	1978	28.27	86.75	106.99	31	L
February	1978	17.73	54.42	67.12	28	L
March	1978	28.19	86.52	106.71	31	L
April	1978	27.10	83.17	102.57	30	L
May	1978	28.08	86.16	106.26	31	L
June	1978	27.30	83.78	103.33	30	L
July	1978	27.90	85.62	105.60	31	L
August	1978	28.10	86.24	106.36	31	L
September	1978	27.10	83.17	102.57	30	L
October	1978	28.10	86.24	106.36	31	L
November	1978	27.10	83.17	102.57	30	L
December	1978	26.27	80.61	99.42	31	L
January	1979	27.93	85.72	105.73	31	L
February	1979	24.90	76.42	94.25	28	L
March	1979	28.00	85.93	105.98	31	L
April	1979	27.10	83.17	102.57	30	L
May	1979	28.00	85.93	105.98	31	L
June	1979	25.15	77.18	95.19	30	L
July	1979	27.65	84.85	104.66	31	L
August	1979	27.50	84.39	104.09	31	L
September	1979	26.93	82.63	101.91	30	L
October	1979	27.64	84.83	104.62	31	L

## Well RNM-2s Monthly Data

November	1979	26.73	82.04	101.19	30	L
December	1979	27.70	85.01	104.84	31	L
January	1980	27.70	85.01	104.84	31	L
February	1980	25.75	79.02	97.46	29	L
March	1980	14.45	44.35	54.69	31	L
April	1980	26.44	81.15	100.09	30	L
May	1980	27.59	84.66	104.41	31	L
June	1980	21.35	65.51	80.80	30	L
July	1980	27.33	83.86	103.43	31	L
August	1980	26.93	82.66	101.94	31	L
September	1980	24.93	76.52	94.37	30	L
October	1980	27.08	83.12	102.51	31	L
November	1980	23.32	71.57	88.27	30	L
December	1980	27.83	85.41	105.34	31	L
January	1981	13.58	41.66	51.38	31	L
February	1981	19.93	61.15	75.42	28	L
March	1981	27.84	85.43	105.36	31	L
April	1981	26.70	81.95	101.07	30	L
May	1981	26.72	81.99	101.12	31	L
June	1981	25.94	79.62	98.20	30	L
July	1981	26.51	81.36	100.34	31	L
August	1981	26.89	82.52	101.78	31	L
September	1981	25.75	79.02	97.46	30	L
October	1981	27.15	83.32	102.76	31	L
November	1981	25.94	79.62	98.19	30	L
December	1981	27.01	82.90	102.25	31	L
January	1982	26.96	82.73	102.03	31	L
February	1982	23.77	72.93	89.95	28	L
March	1982	26.87	82.46	101.70	31	L
April	1982	24.78	76.06	93.80	30	L
May	1982	27.37	83.99	103.58	31	L
June	1982	25.63	78.67	97.02	30	L
July	1982	26.22	80.46	99.23	31	L
August	1982	25.83	79.25	97.75	31	L
September	1982	26.71	81.98	101.11	30	L
October	1982	26.77	82.15	101.32	31	L
November	1982	25.40	77.95	96.14	30	L
December	1982	26.64	81.76	100.84	31	L
January	1983	26.50	81.33	100.30	31	L
February	1983	22.20	68.13	84.03	28	L
March	1983	26.36	80.90	99.77	31	L
April	1983	25.72	78.92	97.34	30	L
May	1983	26.38	80.95	99.84	31	L
June	1983	26.09	80.06	98.74	30	L
July	1983	26.55	81.48	100.49	31	L
August	1983	25.56	78.43	96.74	31	L
September	1983	25.82	79.23	97.72	30	L
October	1983	26.17	80.30	99.03	31	L
November	1983	25.87	79.38	97.91	30	L
December	1983	26.33	80.80	99.65	31	L
January	1984	26.21	80.45	99.22	31	L
February	1984	24.96	76.59	94.46	29	L

## Well RNM-2s Monthly Data

March	1984	26.37	80.93	99.82	31	L
April	1984	25.51	78.30	96.57	30	L
May	1984	26.41	81.06	99.98	31	L
June	1984	25.10	77.03	95.00	30	L
July	1984	24.69	75.76	93.44	31	L
August	1984	24.67	75.70	93.37	31	L
September	1984	24.96	76.60	94.47	30	L
October	1984	26.16	80.28	99.01	31	L
November	1984	25.26	77.51	95.59	30	L
December	1984	25.62	78.63	96.98	31	L
January	1985	25.50	78.27	96.53	31	L
February	1985	23.00	70.60	87.07	28	L
March	1985	25.45	78.09	96.31	31	L
April	1985	25.22	77.39	95.45	30	L
May	1985	26.94	82.67	101.95	31	L
June	1985	25.74	78.99	97.42	30	L
July	1985	26.55	81.49	100.50	31	L
August	1985	26.57	81.55	100.58	31	L
September	1985	25.79	79.14	97.60	30	L
October	1985	26.65	81.79	100.88	31	L
November	1985	23.96	73.52	90.68	30	L
December	1985	2.48	7.61	9.38	31	L
January	1986	9.04	27.75	34.23	31	L
February	1986	24.81	76.13	93.89	28	L
March	1986	27.10	83.18	102.58	31	L
April	1986	26.15	80.25	98.97	30	L
May	1986	27.02	82.93	102.29	31	L
June	1986	26.24	80.54	99.33	30	L
July	1986	27.00	82.86	102.20	31	L
August	1986	26.50	81.33	100.30	31	L
September	1986	28.03	86.01	106.08	30	L
October	1986	31.18	95.69	118.02	31	L
November	1986	23.86	73.22	90.31	30	L
December	1986	24.74	75.92	93.64	31	L
January	1987	27.49	84.36	104.05	31	L
February	1987	24.62	75.56	93.19	28	L
March	1987	27.12	83.22	102.63	31	L
April	1987	26.00	79.79	98.41	30	L
May	1987	26.94	82.67	101.96	31	L
June	1987	26.52	81.39	100.38	30	L
July	1987	26.91	82.57	101.84	31	L
August	1987	26.31	80.74	99.58	31	L
September	1987	26.06	79.98	98.64	30	L
October	1987	26.57	81.54	100.57	31	L
November	1987	25.22	77.41	95.47	30	L
December	1987	25.59	78.53	96.85	31	L
January	1988	25.39	77.93	96.11	31	L
February	1988	23.37	71.73	88.47	29	L
March	1988	26.03	79.88	98.52	31	L
April	1988	27.70	85.00	104.84	30	L
May	1988	26.47	81.23	100.19	31	L
June	1988	25.35	77.78	95.93	30	L

Well RNM-2s Monthly Data

July	1988	29.33	90.01	111.02	31	L
August	1988	25.58	78.50	96.81	31	L
September	1988	22.49	69.02	85.13	30	L
October	1988	26.03	79.89	98.53	31	L
November	1988	25.55	78.40	96.70	30	L
December	1988	26.95	82.69	101.99	31	L
January	1989	27.65	84.84	104.64	31	L
February	1989	23.88	73.30	90.40	28	L
March	1989	26.46	81.21	100.16	31	L
April	1989	25.24	77.45	95.52	30	L
May	1989	26.51	81.37	100.35	31	L
June	1989	25.68	78.80	97.19	30	L
July	1989	26.51	81.35	100.34	31	L
August	1989	26.63	81.73	100.80	31	L
September	1989	23.84	73.15	90.22	30	L
October	1989	26.42	81.07	99.99	31	L
November	1989	26.67	81.86	100.96	30	L
December	1989	26.14	80.21	98.93	31	L
January	1990	26.46	81.20	100.15	31	L
February	1990	23.89	73.33	90.44	28	L
March	1990	24.24	74.38	91.74	31	L
April	1990	23.20	71.19	87.80	30	L
May	1990	28.56	87.65	108.10	31	L
June	1990	26.59	81.61	100.65	30	L
July	1990	25.44	78.06	96.27	31	L
August	1990	24.53	75.29	92.85	31	L
September	1990	17.89	54.89	67.70	30	L
October	1990	0.35	1.09	1.34	31	L
November	1990	0.34	1.05	1.30	30	L
December	1990	11.63	35.69	44.02	31	L
January	1991	2.21	6.77	8.35	31	L
February	1991	18.13	55.64	68.63	28	L
March	1991	23.27	71.40	88.06	31	L
April	1991	22.49	69.01	85.11	30	L
May	1991	21.69	66.55	82.08	31	L
June	1991	25.43	78.04	96.24	30	L
July	1991	23.30	71.51	88.19	31	L
August	1991	18.10	55.55	68.51	28	L

<sup>a</sup>Source: L = Taken from data supplied by Los Alamos National Laboratory (LANL).

WW-1 Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>
January	1950	--	--	--	0	U
February	1950	--	--	--	0	U
March	1950	--	--	--	0	U
April	1950	--	--	--	0	U
May	1950	--	--	--	0	U
June	1950	--	--	--	0	U
July	1950	--	--	--	0	U
August	1950	--	--	--	0	U
September	1950	--	--	--	0	U
October	1950	--	--	--	0	U
November	1950	--	--	--	0	U
December	1950	--	--	--	0	U
January	1951	--	--	--	0	U
February	1951	--	--	--	0	U
March	1951	--	--	--	0	U
April	1951	--	--	--	0	U
May	1951	--	--	--	0	U
June	1951	--	--	--	0	U
July	1951	--	--	--	0	U
August	1951	--	--	--	0	U
September	1951	--	--	--	0	U
October	1951	--	--	--	0	U
November	1951	--	--	--	0	U
December	1951	--	--	--	0	U
January	1952	--	--	--	0	U
February	1952	--	--	--	0	U
March	1952	--	--	--	0	U
April	1952	--	--	--	0	U
May	1952	--	--	--	0	U
June	1952	--	--	--	0	U
July	1952	--	--	--	0	U
August	1952	--	--	--	0	U
September	1952	--	--	--	0	U
October	1952	--	--	--	0	U
November	1952	--	--	--	0	U
December	1952	--	--	--	0	U
January	1953	--	--	--	0	U
February	1953	--	--	--	0	U
March	1953	--	--	--	0	U
April	1953	--	--	--	0	U
May	1953	--	--	--	0	U
June	1953	--	--	--	0	U
July	1953	--	--	--	0	U
August	1953	--	--	--	0	U
September	1953	--	--	--	0	U
October	1953	--	--	--	0	U
November	1953	--	--	--	0	U
December	1953	--	--	--	0	U
January	1954	--	--	--	0	U

WW-1 Monthly Pumping Data

February	1954	--	--	--	0	U
March	1954	--	--	--	0	U
April	1954	--	--	--	0	U
May	1954	--	--	--	0	U
June	1954	--	--	--	0	U
July	1954	--	--	--	0	U
August	1954	--	--	--	0	U
September	1954	--	--	--	0	U
October	1954	--	--	--	0	U
November	1954	--	--	--	0	U
December	1954	--	--	--	0	U
January	1955	--	--	--	0	U
February	1955	--	--	--	0	U
March	1955	--	--	--	0	U
April	1955	--	--	--	0	U
May	1955	--	--	--	0	U
June	1955	--	--	--	0	U
July	1955	--	--	--	0	U
August	1955	--	--	--	0	U
September	1955	--	--	--	0	U
October	1955	--	--	--	0	U
November	1955	--	--	--	0	U
December	1955	--	--	--	0	U
January	1956	--	--	--	0	U
February	1956	--	--	--	0	U
March	1956	--	--	--	0	U
April	1956	--	--	--	0	U
May	1956	--	--	--	0	U
June	1956	--	--	--	0	U
July	1956	--	--	--	0	U
August	1956	--	--	--	0	U
September	1956	--	--	--	0	U
October	1956	--	--	--	0	U
November	1956	--	--	--	0	U
December	1956	--	--	--	0	U
January	1957	--	--	--	0	U
February	1957	--	--	--	0	U
March	1957	--	--	--	0	U
April	1957	--	--	--	0	U
May	1957	--	--	--	0	U
June	1957	--	--	--	0	U
July	1957	--	--	--	0	U
August	1957	--	--	--	0	U
September	1957	--	--	--	0	U
October	1957	--	--	--	0	U
November	1957	--	--	--	0	U
December	1957	--	--	--	0	U
January	1958	--	--	--	0	U
February	1958	--	--	--	0	U
March	1958	--	--	--	0	U
April	1958	--	--	--	0	U
May	1958	--	--	--	0	U

WW-1 Monthly Pumping Data

June	1958	--	--	--	0	U
July	1958	--	--	--	0	U
August	1958	--	--	--	0	U
September	1958	--	--	--	0	U
October	1958	--	--	--	0	U
November	1958	--	--	--	0	U
December	1958	--	--	--	0	U
January	1959	--	--	--	0	U
February	1959	--	--	--	0	U
March	1959	--	--	--	0	U
April	1959	--	--	--	0	U
May	1959	--	--	--	0	U
June	1959	--	--	--	0	U
July	1959	--	--	--	0	U
August	1959	--	--	--	0	U
September	1959	--	--	--	0	U
October	1959	--	--	--	0	U
November	1959	--	--	--	0	U
December	1959	--	--	--	0	U
January	1960	--	--	--	0	U
February	1960	--	--	--	0	U
March	1960	--	--	--	0	U
April	1960	--	--	--	0	U
May	1960	--	--	--	0	U
June	1960	--	--	--	0	U
July	1960	--	--	--	0	U
August	1960	--	--	--	0	U
September	1960	--	--	--	0	U
October	1960	--	--	--	0	U
November	1960	--	--	--	0	U
December	1960	--	--	--	0	U
January	1961	--	--	--	0	U
February	1961	--	--	--	0	U
March	1961	--	--	--	0	U
April	1961	--	--	--	0	U
May	1961	--	--	--	0	U
June	1961	--	--	--	0	U
July	1961	--	--	--	0	U
August	1961	--	--	--	0	U
September	1961	--	--	--	0	U
October	1961	--	--	--	0	U
November	1961	--	--	--	0	U
December	1961	--	--	--	0	U
January	1962	--	--	--	0	U
February	1962	--	--	--	0	U
March	1962	--	--	--	0	U
April	1962	--	--	--	0	U
May	1962	--	--	--	0	U
June	1962	--	--	--	0	U
July	1962	--	--	--	0	U
August	1962	--	--	--	0	U
September	1962	--	--	--	0	U

WW-1 Monthly Pumping Data

October	1962	--	--	--	0	U
November	1962	--	--	--	0	U
December	1962	--	--	--	0	U
January	1963	--	--	--	0	U
February	1963	--	--	--	0	U
March	1963	--	--	--	0	U
April	1963	--	--	--	0	U
May	1963	--	--	--	0	U
June	1963	--	--	--	0	U
July	1963	--	--	--	0	U
August	1963	--	--	--	0	U
September	1963	--	--	--	0	U
October	1963	--	--	--	0	U
November	1963	--	--	--	0	U
December	1963	--	--	--	0	U
January	1964	--	--	--	0	U
February	1964	4.98	15.29	18.86	29	M
March	1964	7.34	22.53	27.78	31	M
April	1964	5.96	18.28	22.54	30	M
May	1964	8.28	25.40	31.33	31	M
June	1964	7.37	22.62	27.90	30	M
July	1964	6.34	19.45	23.99	31	M
August	1964	7.34	22.53	27.79	31	M
September	1964	1.25	3.84	4.74	30	M
October	1964	4.06	12.46	15.37	31	M
November	1964	1.81	5.56	6.86	30	M
December	1964	0.37	1.14	1.40	31	M
January	1965	2.25	6.91	8.52	31	M
February	1965	3.07	9.42	11.62	28	M
March	1965	1.36	4.17	5.14	31	M
April	1965	4.22	12.94	15.96	30	M
May	1965	0.91	2.80	3.45	31	M
June	1965	1.78	5.46	6.74	30	M
July	1965	2.40	7.37	9.09	31	M
August	1965	3.16	9.69	11.95	31	M
September	1965	2.91	8.92	11.00	26	M
October	1965	--	--	--	0	I
November	1965	0.00	0.00	0.00	29	M
December	1965	0.15	0.45	0.55	31	M
January	1966	0.06	0.19	0.23	31	M
February	1966	1.90	5.82	7.18	28	M
March	1966	4.72	14.48	17.86	31	M
April	1966	3.98	12.23	15.08	30	M
May	1966	3.28	10.07	12.42	29	M
June	1966	--	--	--	0	I
July	1966	--	--	--	0	I
August	1966	3.20	9.81	12.10	28	M
September	1966	0.23	0.70	0.86	5	M
October	1966	2.49	7.65	9.44	31	M
November	1966	2.29	7.03	8.67	30	M
December	1966	2.14	6.57	8.10	31	M
January	1967	0.00	0.00	0.00	31	M

WW-1 Monthly Pumping Data

February	1967	0.00	0.00	0.00	28	M
March	1967	0.05	0.15	0.18	30	M
April	1967	--	--	--	0	U
May	1967	--	--	--	0	U
June	1967	--	--	--	0	U
July	1967	--	--	--	0	U
August	1967	--	--	--	0	U
September	1967	--	--	--	0	U
October	1967	--	--	--	0	U
November	1967	--	--	--	0	U
December	1967	--	--	--	0	U
January	1968	--	--	--	0	U
February	1968	--	--	--	0	U
March	1968	--	--	--	0	U
April	1968	--	--	--	0	U
May	1968	--	--	--	0	U
June	1968	--	--	--	0	U
July	1968	--	--	--	0	U
August	1968	--	--	--	0	U
September	1968	--	--	--	0	U
October	1968	--	--	--	0	U
November	1968	--	--	--	0	U
December	1968	--	--	--	0	U
January	1969	--	--	--	0	U
February	1969	--	--	--	0	U
March	1969	--	--	--	0	U
April	1969	--	--	--	0	U
May	1969	--	--	--	0	U
June	1969	--	--	--	0	U
July	1969	--	--	--	0	U
August	1969	--	--	--	0	U
September	1969	--	--	--	0	U
October	1969	--	--	--	0	U
November	1969	--	--	--	0	U
December	1969	--	--	--	0	U
January	1970	--	--	--	0	U
February	1970	--	--	--	0	U
March	1970	--	--	--	0	U
April	1970	--	--	--	0	U
May	1970	--	--	--	0	U
June	1970	--	--	--	0	U
July	1970	--	--	--	0	U
August	1970	--	--	--	0	U
September	1970	--	--	--	0	U
October	1970	--	--	--	0	U
November	1970	--	--	--	0	U
December	1970	--	--	--	0	U
January	1971	--	--	--	0	U
February	1971	--	--	--	0	U
March	1971	--	--	--	0	U
April	1971	--	--	--	0	U
May	1971	--	--	--	0	U

WW-1 Monthly Pumping Data

June	1971	--	--	--	0	U
July	1971	--	--	--	0	U
August	1971	--	--	--	0	U
September	1971	--	--	--	0	U
October	1971	--	--	--	0	U
November	1971	--	--	--	0	U
December	1971	--	--	--	0	U
January	1972	--	--	--	0	U
February	1972	--	--	--	0	U
March	1972	--	--	--	0	U
April	1972	--	--	--	0	U
May	1972	--	--	--	0	U
June	1972	--	--	--	0	U
July	1972	--	--	--	0	U
August	1972	--	--	--	0	U
September	1972	--	--	--	0	U
October	1972	--	--	--	0	U
November	1972	--	--	--	0	U
December	1972	--	--	--	0	U
January	1973	--	--	--	0	U
February	1973	--	--	--	0	U
March	1973	--	--	--	0	U
April	1973	--	--	--	0	U
May	1973	--	--	--	0	U
June	1973	--	--	--	0	U
July	1973	--	--	--	0	U
August	1973	--	--	--	0	U
September	1973	--	--	--	0	U
October	1973	--	--	--	0	U
November	1973	--	--	--	0	U
December	1973	--	--	--	0	U
January	1974	--	--	--	0	U
February	1974	--	--	--	0	U
March	1974	--	--	--	0	U
April	1974	--	--	--	0	U
May	1974	--	--	--	0	U
June	1974	--	--	--	0	U
July	1974	--	--	--	0	U
August	1974	--	--	--	0	U
September	1974	--	--	--	0	U
October	1974	--	--	--	0	U
November	1974	--	--	--	0	U
December	1974	--	--	--	0	U
January	1975	--	--	--	0	U
February	1975	--	--	--	0	U
March	1975	--	--	--	0	U
April	1975	--	--	--	0	U
May	1975	--	--	--	0	U
June	1975	--	--	--	0	U
July	1975	--	--	--	0	U
August	1975	--	--	--	0	U
September	1975	--	--	--	0	U

WW-1 Monthly Pumping Data

October	1975	--	--	--	0	U
November	1975	--	--	--	0	U
December	1975	--	--	--	0	U
January	1976	--	--	--	0	U
February	1976	--	--	--	0	U
March	1976	--	--	--	0	U
April	1976	--	--	--	0	U
May	1976	--	--	--	0	U
June	1976	--	--	--	0	U
July	1976	--	--	--	0	U
August	1976	--	--	--	0	U
September	1976	--	--	--	0	U
October	1976	--	--	--	0	U
November	1976	--	--	--	0	U
December	1976	--	--	--	0	U
January	1977	--	--	--	0	U
February	1977	--	--	--	0	U
March	1977	--	--	--	0	U
April	1977	--	--	--	0	U
May	1977	--	--	--	0	U
June	1977	--	--	--	0	U
July	1977	--	--	--	0	U
August	1977	--	--	--	0	U
September	1977	--	--	--	0	U
October	1977	--	--	--	0	U
November	1977	--	--	--	0	U
December	1977	--	--	--	0	U
January	1978	--	--	--	0	U
February	1978	--	--	--	0	U
March	1978	--	--	--	0	U
April	1978	--	--	--	0	U
May	1978	--	--	--	0	U
June	1978	--	--	--	0	U
July	1978	--	--	--	0	U
August	1978	--	--	--	0	U
September	1978	--	--	--	0	U
October	1978	--	--	--	0	U
November	1978	--	--	--	0	U
December	1978	--	--	--	0	U
January	1979	--	--	--	0	U
February	1979	--	--	--	0	U
March	1979	--	--	--	0	U
April	1979	--	--	--	0	U
May	1979	--	--	--	0	U
June	1979	--	--	--	0	U
July	1979	--	--	--	0	U
August	1979	--	--	--	0	U
September	1979	--	--	--	0	U
October	1979	--	--	--	0	U
November	1979	--	--	--	0	U
December	1979	--	--	--	0	U
January	1980	--	--	--	0	U

WW-1 Monthly Pumping Data

February	1980	--	--	--	0	U
March	1980	--	--	--	0	U
April	1980	--	--	--	0	U
May	1980	--	--	--	0	U
June	1980	--	--	--	0	U
July	1980	--	--	--	0	U
August	1980	--	--	--	0	U
September	1980	--	--	--	0	U
October	1980	--	--	--	0	U
November	1980	--	--	--	0	U
December	1980	--	--	--	0	U
January	1981	--	--	--	0	U
February	1981	--	--	--	0	U
March	1981	--	--	--	0	U
April	1981	--	--	--	0	U
May	1981	--	--	--	0	U
June	1981	--	--	--	0	U
July	1981	--	--	--	0	U
August	1981	--	--	--	0	U
September	1981	--	--	--	0	U
October	1981	--	--	--	0	U
November	1981	--	--	--	0	U
December	1981	--	--	--	0	U
January	1982	--	--	--	0	U
February	1982	--	--	--	0	U
March	1982	--	--	--	0	U
April	1982	--	--	--	0	U
May	1982	--	--	--	0	U
June	1982	--	--	--	0	U
July	1982	--	--	--	0	U
August	1982	--	--	--	0	U
September	1982	--	--	--	0	U
October	1982	--	--	--	0	U
November	1982	--	--	--	0	U
December	1982	--	--	--	0	U

<sup>a</sup>Source: I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.

M = Taken from Bechtel or REECO water production reports.

U = Unknown whether well was available or used for water supply.

WW-4 Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>
January	1983	0.00	0.00	0.00	31	M
February	1983	0.00	0.00	0.00	28	M
March	1983	0.00	0.00	0.00	31	M
April	1983	1.26	3.87	4.77	30	M
May	1983	1.21	3.71	4.57	31	M
June	1983	2.12	6.50	8.02	30	M
July	1983	1.81	5.54	6.83	31	M
August	1983	2.16	6.64	8.19	31	M
September	1983	3.21	9.84	12.14	30	M
October	1983	5.51	16.91	20.85	31	M
November	1983	2.39	7.34	9.06	30	M
December	1983	4.45	13.64	16.82	31	M
January	1984	5.27	16.16	19.94	31	M
February	1984	3.34	10.24	12.62	29	M
March	1984	4.90	15.02	18.53	31	M
April	1984	4.14	12.69	15.65	30	M
May	1984	4.90	15.05	18.56	31	M
June	1984	5.08	15.60	19.24	30	M
July	1984	4.54	13.94	17.20	31	M
August	1984	3.75	11.50	14.18	31	M
September	1984	5.51	16.92	20.87	30	M
October	1984	3.16	9.71	11.98	31	M
November	1984	2.01	6.16	7.60	30	M
December	1984	1.81	5.56	6.86	31	E
January	1985	1.22	3.73	4.60	31	E
February	1985	4.03	12.36	15.25	28	M
March	1985	4.56	13.99	17.25	31	M
April	1985	6.00	18.40	22.70	30	M
May	1985	4.19	12.85	15.84	31	M
June	1985	4.51	13.84	17.07	30	M
July	1985	4.04	12.40	15.30	31	M
August	1985	3.75	11.50	14.18	31	M
September	1985	2.33	7.15	8.82	30	M
October	1985	3.16	9.70	11.96	31	M
November	1985	1.52	4.68	5.77	30	M
December	1985	3.64	11.18	13.78	31	E
January	1986	3.33	10.20	12.59	31	M
February	1986	1.42	4.36	5.38	28	M
March	1986	2.17	6.67	8.23	31	M
April	1986	1.76	5.39	6.64	30	M
May	1986	2.28	7.01	8.65	31	M
June	1986	3.01	9.23	11.38	30	M
July	1986	3.92	12.04	14.85	31	M
August	1986	3.04	9.33	11.51	31	M
September	1986	2.13	6.53	8.05	30	M
October	1986	1.91	5.85	7.22	31	M
November	1986	2.87	8.81	10.87	30	M
December	1986	0.35	1.06	1.31	31	M
January	1987	0.72	2.22	2.74	31	M

WW-4 Monthly Pumping Data

February	1987	1.38	4.23	5.22	28	M
March	1987	2.18	6.68	8.24	31	M
April	1987	2.43	7.45	9.19	30	M
May	1987	2.30	7.05	8.70	31	M
June	1987	2.75	8.43	10.40	30	M
July	1987	4.09	12.56	15.50	31	M
August	1987	4.52	13.86	17.10	31	M
September	1987	1.40	4.29	5.29	30	M
October	1987	2.51	7.71	9.51	31	M
November	1987	1.51	4.64	5.72	30	M
December	1987	2.41	7.39	9.11	31	M
January	1988	1.35	4.15	5.12	31	M
February	1988	1.85	5.68	7.00	29	M
March	1988	3.67	11.26	13.89	31	M
April	1988	3.16	9.70	11.96	30	M
May	1988	4.47	13.72	16.92	31	M
June	1988	4.12	12.65	15.60	30	M
July	1988	4.66	14.30	17.64	31	M
August	1988	4.36	13.37	16.49	31	M
September	1988	3.47	10.65	13.13	30	M
October	1988	6.84	21.00	25.90	31	M
November	1988	4.73	14.50	17.88	30	M
December	1988	4.03	12.38	15.26	31	M
January	1989	6.12	18.79	23.17	31	M
February	1989	8.62	26.47	32.64	28	M
March	1989	10.23	31.39	38.71	31	M
April	1989	13.65	41.90	51.67	30	M
May	1989	14.76	45.29	55.86	31	M
June	1989	16.93	51.96	64.09	30	M
July	1989	19.16	58.79	72.51	31	M
August	1989	22.96	70.45	86.89	31	M
September	1989	22.86	70.15	86.52	30	M
October	1989	25.63	78.64	96.99	31	M
November	1989	17.31	53.13	65.53	30	M
December	1989	13.82	42.41	52.30	31	M
January	1990	9.95	30.52	37.64	31	M
February	1990	5.77	17.70	21.83	28	M
March	1990	9.80	30.06	37.08	31	M
April	1990	12.57	38.57	47.57	30	M
May	1990	7.53	23.12	28.51	31	M
June	1990	2.66	8.16	10.06	30	M
July	1990	0.86	2.64	3.26	31	M
August	1990	2.41	7.39	9.11	31	E
September	1990	3.76	11.52	14.21	30	E
October	1990	5.21	15.98	19.71	31	M
November	1990	3.89	11.92	14.70	30	M
December	1990	3.79	11.63	14.35	31	M
January	1991	7.63	23.43	28.90	31	M
February	1991	7.22	22.15	27.32	28	M
March	1991	5.65	17.33	21.37	31	M
April	1991	5.57	17.08	21.07	30	M
May	1991	6.35	19.49	24.03	31	M

WW-4 Monthly Pumping Data

June	1991	6.42	19.71	24.30	30	M
July	1991	5.77	17.70	21.83	31	M
August	1991	4.37	13.42	16.55	31	M
September	1991	4.95	15.19	18.73	30	M
October	1991	5.71	17.53	21.63	31	M
November	1991	5.48	16.82	20.74	30	M
December	1991	5.55	17.04	21.02	31	M
January	1992	3.89	11.93	14.71	31	M
February	1992	5.50	16.88	20.82	29	M
March	1992	5.90	18.09	22.31	31	M
April	1992	7.18	22.02	27.16	30	M
May	1992	8.01	24.59	30.33	31	M
June	1992	7.68	23.55	29.05	30	M
July	1992	7.34	22.52	27.77	31	M
August	1992	9.00	27.62	34.07	31	M
September	1992	11.19	34.34	42.35	30	M
October	1992	8.93	27.42	33.82	31	M
November	1992	4.94	15.17	18.71	30	M
December	1992	4.96	15.21	18.76	31	M
January	1993	5.03	15.44	19.05	31	M
February	1993	5.77	17.72	21.85	28	M
March	1993	6.79	20.82	25.68	31	M
April	1993	6.11	18.74	23.11	30	M
May	1993	8.75	26.85	33.11	31	M
June	1993	5.89	18.08	22.30	30	M
July	1993	9.09	27.89	34.39	31	M
August	1993	9.17	28.15	34.72	31	M
September	1993	3.82	11.72	14.46	30	M
October	1993	5.47	16.78	20.70	31	M
November	1993	4.98	15.29	18.86	30	M
December	1993	4.58	14.07	17.35	31	M
January	1994	5.10	15.66	19.32	31	M
February	1994	3.01	9.24	11.39	28	M
March	1994	5.34	16.38	20.20	31	M
April	1994	6.67	20.48	25.26	30	M
May	1994	7.50	23.03	28.40	31	M
June	1994	8.21	25.19	31.07	30	M
July	1994	7.67	23.54	29.03	31	M
August	1994	1.90	5.84	7.20	31	M
September	1994	1.40	4.29	5.29	30	M
October	1994	2.69	8.27	10.20	31	M
November	1994	2.39	7.35	9.06	30	M
December	1994	1.09	3.33	4.11	31	M
January	1995	0.61	1.86	2.29	31	M
February	1995	0.48	1.46	1.80	28	M
March	1995	0.53	1.61	1.99	31	M
April	1995	0.84	2.58	3.18	30	M
May	1995	0.44	1.34	1.65	31	M
June	1995	0.53	1.61	1.99	30	M
July	1995	2.18	6.67	8.23	31	M
August	1995	4.97	15.26	18.83	31	M
September	1995	1.78	5.48	6.75	30	M

WW-4 Monthly Pumping Data

October	1995	0.58	1.79	2.21	31	M
November	1995	0.90	2.75	3.39	30	M
December	1995	2.41	7.40	9.13	31	M
January	1996	2.71	8.30	10.24	31	M
February	1996	2.16	6.63	8.18	29	M
March	1996	1.14	3.50	4.32	31	M
April	1996	0.86	2.63	3.24	30	M
May	1996	2.79	8.55	10.55	31	M
June	1996	1.22	3.74	4.61	30	M
July	1996	0.12	0.36	0.44	31	M
August	1996	1.39	4.27	5.26	31	M
September	1996	1.33	4.07	5.01	30	M
October	1996	0.34	1.05	1.30	31	M
November	1996	0.83	2.53	3.12	30	M
December	1996	0.63	1.94	2.40	31	M
January	1997	0.58	1.77	2.18	31	M
February	1997	0.56	1.72	2.13	28	M
March	1997	0.62	1.89	2.33	31	M
April	1997	0.58	1.77	2.18	30	M
May	1997	1.46	4.46	5.51	31	M
June	1997	1.20	3.67	4.52	30	M
July	1997	1.44	4.42	5.45	31	M
August	1997	1.84	5.64	6.95	31	M
September	1997	1.57	4.82	5.94	30	M
October	1997	1.40	4.28	5.28	31	M
November	1997	1.22	3.74	4.61	30	M
December	1997	1.65	5.07	6.25	31	M
January	1998	1.41	4.33	5.35	31	M
February	1998	0.78	2.39	2.95	28	M
March	1998	0.82	2.51	3.09	31	M
April	1998	1.12	3.43	4.23	30	M
May	1998	0.62	1.91	2.35	31	M
June	1998	1.23	3.77	4.65	30	M
July	1998	1.27	3.90	4.81	31	M
August	1998	1.52	4.66	5.75	31	M
September	1998	0.93	2.85	3.52	30	M
October	1998	1.92	5.89	7.26	31	M
November	1998	0.58	1.76	2.18	30	M
December	1998	0.51	1.57	1.94	31	M
January	1999	0.60	1.84	2.27	31	M
February	1999	0.57	1.76	2.17	28	M
March	1999	0.95	2.90	3.57	31	M
April	1999	1.88	5.77	7.11	30	M
May	1999	2.63	8.06	9.94	31	M
June	1999	1.05	3.22	3.97	30	M
July	1999	0.20	0.60	0.74	31	M
August	1999	0.00	0.00	0.00	31	M
September	1999	0.18	0.56	0.69	30	M
October	1999	0.22	0.66	0.82	31	M
November	1999	0.18	0.55	0.68	30	M
December	1999	0.00	0.00	0.00	31	M
January	2000	0.00	0.00	0.00	31	M

WW-4 Monthly Pumping Data

February	2000	0.09	0.29	0.36	29	M
March	2000	0.58	1.79	2.21	31	M
April	2000	1.35	4.13	5.09	30	M
May	2000	1.12	3.45	4.26	31	M
June	2000	0.69	2.12	2.61	30	M
July	2000	0.71	2.19	2.70	31	M
August	2000	1.26	3.87	4.77	31	M
September	2000	1.08	3.32	4.10	30	M
October	2000	1.10	3.39	4.18	31	M
November	2000	1.26	3.87	4.77	30	M
December	2000	0.71	2.18	2.69	31	M
January	2001	0.77	2.36	2.91	31	M
February	2001	1.43	4.38	5.40	28	M
March	2001	1.84	5.64	6.95	31	M
April	2001	1.52	4.67	5.76	30	M
May	2001	2.39	7.34	9.06	31	M
June	2001	3.33	10.21	12.60	30	M
July	2001	3.04	9.32	11.49	31	M
August	2001	1.38	4.24	5.22	31	M
September	2001	1.57	4.83	5.96	30	M
October	2001	2.00	6.13	7.56	31	M
November	2001	1.21	3.71	4.57	30	M
December	2001	0.49	1.50	1.85	31	M
January	2002	0.88	2.70	3.33	31	M
February	2002	1.57	4.81	5.93	28	M
March	2002	0.30	0.92	1.13	31	M
April	2002	0.55	1.70	2.09	30	M
May	2002	0.99	3.04	3.75	31	M
June	2002	1.02	3.12	3.85	30	M
July	2002	1.09	3.35	4.13	31	M
August	2002	2.40	7.36	9.08	31	M
September	2002	2.97	9.12	11.25	30	M
October	2002	3.54	10.86	13.39	31	M
November	2002	2.68	8.21	10.13	30	M
December	2002	1.78	5.46	6.74	31	M
January	2003	2.27	6.95	8.58	31	M
February	2003	0.13	0.39	0.49	28	M
March	2003	1.23	3.77	4.64	31	M
April	2003	2.18	6.70	8.27	30	M
May	2003	1.98	6.08	7.50	31	M
June	2003	3.66	11.24	13.87	30	M
July	2003	3.63	11.13	13.73	31	M
August	2003	3.76	11.53	14.22	31	M
September	2003	3.42	10.48	12.93	30	M
October	2003	2.93	8.99	11.09	31	M
November	2003	1.72	5.27	6.50	30	M
December	2003	0.18	0.54	0.66	31	M

<sup>a</sup>Source: E = Taken from Bechtel or REECO water production reports and includes estimated values.  
M = Taken from Bechtel or REECO water production reports.

WW-4A Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>
December	1993	0.21	0.65	0.80	31	M
January	1994	0.00	0.00	0.00	31	M
February	1994	0.00	0.00	0.00	28	M
March	1994	0.00	0.00	0.00	31	M
April	1994	0.00	0.00	0.00	30	M
May	1994	0.29	0.90	1.11	31	M
June	1994	0.00	0.00	0.00	30	M
July	1994	1.30	3.98	4.91	31	M
August	1994	6.92	21.25	26.21	31	M
September	1994	4.74	14.54	17.93	30	M
October	1994	3.78	11.61	14.32	31	M
November	1994	1.57	4.81	5.93	30	M
December	1994	2.90	8.89	10.97	31	M
January	1995	2.47	7.57	9.34	31	M
February	1995	3.17	9.73	12.01	28	M
March	1995	2.95	9.07	11.18	31	M
April	1995	3.78	11.59	14.30	30	M
May	1995	3.56	10.93	13.48	31	M
June	1995	3.58	10.97	13.53	30	M
July	1995	1.31	4.03	4.97	31	M
August	1995	1.81	5.55	6.84	31	M
September	1995	3.67	11.26	13.88	30	M
October	1995	2.29	7.01	8.65	31	M
November	1995	0.03	0.09	0.12	30	M
December	1995	2.27	6.97	8.59	31	M
January	1996	1.89	5.81	7.16	31	M
February	1996	1.92	5.88	7.26	29	M
March	1996	1.79	5.48	6.76	31	M
April	1996	1.01	3.09	3.81	30	M
May	1996	0.87	2.68	3.31	31	M
June	1996	3.96	12.16	15.00	30	M
July	1996	4.18	12.83	15.82	31	M
August	1996	3.29	10.08	12.44	31	M
September	1996	4.02	12.33	15.20	30	M
October	1996	3.83	11.74	14.48	31	M
November	1996	3.15	9.65	11.90	30	M
December	1996	2.31	7.09	8.75	31	M
January	1997	2.32	7.13	8.79	31	M
February	1997	2.41	7.39	9.11	28	M
March	1997	3.21	9.85	12.15	31	M
April	1997	3.43	10.51	12.96	30	M
May	1997	3.84	11.78	14.53	31	M
June	1997	4.08	12.51	15.42	30	M
July	1997	4.18	12.82	15.81	31	M
August	1997	4.95	15.19	18.73	31	M
September	1997	3.74	11.46	14.14	30	M
October	1997	4.10	12.58	15.52	31	M
November	1997	4.55	13.97	17.23	30	M
December	1997	5.25	16.11	19.87	31	M

WW-4A Monthly Pumping Data

January	1998	2.97	9.11	11.23	31	M
February	1998	3.29	10.10	12.45	28	M
March	1998	3.49	10.72	13.22	31	M
April	1998	2.64	8.09	9.98	30	M
May	1998	10.88	33.38	41.18	31	M
June	1998	9.28	28.48	35.13	30	M
July	1998	4.09	12.55	15.48	31	M
August	1998	5.36	16.44	20.28	31	M
September	1998	3.58	10.98	13.55	30	M
October	1998	3.55	10.88	13.42	31	M
November	1998	3.38	10.36	12.77	30	M
December	1998	2.68	8.22	10.14	31	M
January	1999	4.03	12.38	15.26	31	M
February	1999	3.56	10.92	13.46	28	M
March	1999	4.75	14.58	17.98	31	M
April	1999	3.71	11.38	14.04	30	M
May	1999	5.00	15.34	18.92	31	M
June	1999	4.15	12.72	15.69	30	M
July	1999	5.04	15.47	19.08	31	M
August	1999	5.24	16.09	19.84	31	M
September	1999	4.96	15.22	18.77	30	M
October	1999	4.37	13.40	16.53	31	M
November	1999	3.46	10.60	13.08	30	M
December	1999	5.74	17.60	21.71	31	M
January	2000	5.99	18.37	22.66	31	A
February	2000	5.19	15.94	19.66	29	M
March	2000	6.76	20.73	25.57	31	M
April	2000	6.96	21.36	26.34	30	M
May	2000	7.96	24.42	30.12	31	M
June	2000	8.28	25.40	31.32	30	M
July	2000	5.53	16.97	20.94	31	M
August	2000	4.60	14.11	17.40	31	M
September	2000	3.90	11.97	14.77	30	M
October	2000	3.23	9.93	12.24	31	M
November	2000	3.83	11.75	14.49	30	M
December	2000	5.68	17.42	21.49	31	M
January	2001	3.18	9.76	12.03	31	M
February	2001	3.79	11.64	14.36	28	M
March	2001	3.89	11.95	14.74	31	M
April	2001	2.54	7.81	9.63	30	M
May	2001	4.16	12.77	15.75	31	M
June	2001	4.45	13.67	16.86	30	M
July	2001	9.34	28.67	35.37	31	M
August	2001	7.02	21.54	26.56	31	M
September	2001	4.63	14.22	17.53	30	M
October	2001	3.68	11.29	13.93	31	M
November	2001	3.39	10.39	12.82	30	M
December	2001	4.09	12.56	15.49	31	M
January	2002	5.16	15.84	19.54	31	M
February	2002	5.86	17.99	22.19	28	M
March	2002	5.56	17.05	21.03	31	M
April	2002	4.46	13.69	16.89	30	M

### WW-4A Monthly Pumping Data

May	2002	5.15	15.79	19.48	31	M
June	2002	6.03	18.52	22.84	30	M
July	2002	7.89	24.20	29.86	31	M
August	2002	8.39	25.76	31.77	31	M
September	2002	6.67	20.46	25.24	30	M
October	2002	5.68	17.44	21.51	31	M
November	2002	5.79	17.78	21.93	30	M
December	2002	4.87	14.94	18.42	31	M
January	2003	6.68	20.50	25.28	31	M
February	2003	6.93	21.26	26.22	28	M
March	2003	6.03	18.51	22.83	31	M
April	2003	4.31	13.23	16.32	30	M
May	2003	5.39	16.55	20.41	31	M
June	2003	6.89	21.13	26.07	30	M
July	2003	6.05	18.56	22.89	31	M
August	2003	6.06	18.60	22.94	31	M
September	2003	6.78	20.81	25.67	30	M
October	2003	5.84	17.94	22.12	31	M
November	2003	5.66	17.35	21.41	30	M
December	2003	4.38	13.45	16.59	31	M

Source: N = Estimated from pump run times recorded on daily ammeter charts supplied by Bechtel, Nevada (Bechtel) or Reynolds Electrical and Engineering Company (REECO).

M = Taken from Bechtel or REECO water production reports.

WW-5A Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>	Comment <sup>b</sup>
March	1951	0.97	2.98	3.67	365	Z	estimated
April	1951	0.97	2.98	3.67	365	Z	estimated
May	1951	0.97	2.98	3.67	365	Z	estimated
June	1951	0.97	2.98	3.67	365	Z	estimated
July	1951	0.97	2.98	3.67	365	Z	estimated
August	1951	0.97	2.98	3.67	365	Z	estimated
September	1951	0.97	2.98	3.67	365	Z	estimated
October	1951	0.97	2.98	3.67	365	Z	estimated
November	1951	0.97	2.98	3.67	365	Z	estimated
December	1951	0.97	2.98	3.67	365	Z	estimated
January	1952	0.81	2.48	3.06	366	Z	estimated
February	1952	0.81	2.48	3.06	366	Z	estimated
March	1952	0.81	2.48	3.06	366	Z	estimated
April	1952	0.81	2.48	3.06	366	Z	estimated
May	1952	0.81	2.48	3.06	366	Z	estimated
June	1952	0.81	2.48	3.06	366	Z	estimated
July	1952	0.81	2.48	3.06	366	Z	estimated
August	1952	0.81	2.48	3.06	366	Z	estimated
September	1952	0.81	2.48	3.06	366	Z	estimated
October	1952	0.81	2.48	3.06	366	Z	estimated
November	1952	0.81	2.48	3.06	366	Z	estimated
December	1952	0.81	2.48	3.06	366	Z	estimated
January	1953	0.81	2.48	3.06	365	Z	estimated
February	1953	0.81	2.48	3.06	365	Z	estimated
March	1953	0.81	2.48	3.06	365	Z	estimated
April	1953	0.81	2.48	3.06	365	Z	estimated
May	1953	0.81	2.48	3.06	365	Z	estimated
June	1953	0.81	2.48	3.06	365	Z	estimated
July	1953	0.81	2.48	3.06	365	Z	estimated
August	1953	0.81	2.48	3.06	365	Z	estimated
September	1953	0.81	2.48	3.06	365	Z	estimated
October	1953	0.81	2.48	3.06	365	Z	estimated
November	1953	0.81	2.48	3.06	365	Z	estimated
December	1953	0.81	2.48	3.06	365	Z	estimated
January	1954	0.81	2.48	3.06	365	Z	estimated
February	1954	0.81	2.48	3.06	365	Z	estimated
March	1954	0.81	2.48	3.06	365	Z	estimated
April	1954	0.81	2.48	3.06	365	Z	estimated
May	1954	0.81	2.48	3.06	365	Z	estimated
June	1954	0.81	2.48	3.06	365	Z	estimated
July	1954	0.81	2.48	3.06	365	Z	estimated
August	1954	0.81	2.48	3.06	365	Z	estimated
September	1954	0.81	2.48	3.06	365	Z	estimated
October	1954	0.81	2.48	3.06	365	Z	estimated
November	1954	0.81	2.48	3.06	365	Z	estimated
December	1954	0.81	2.48	3.06	365	Z	estimated
January	1955	0.81	2.48	3.06	365	Z	estimated
February	1955	0.81	2.48	3.06	365	Z	estimated
March	1955	0.81	2.48	3.06	365	Z	estimated

WW-5A Monthly Pumping Data

April	1955	0.81	2.48	3.06	365	Z	estimated
May	1955	0.81	2.48	3.06	365	Z	estimated
June	1955	0.81	2.48	3.06	365	Z	estimated
July	1955	0.81	2.48	3.06	365	Z	estimated
August	1955	0.81	2.48	3.06	365	Z	estimated
September	1955	0.81	2.48	3.06	365	Z	estimated
October	1955	0.81	2.48	3.06	365	Z	estimated
November	1955	0.81	2.48	3.06	365	Z	estimated
December	1955	0.81	2.48	3.06	365	Z	estimated
January	1956	0.81	2.48	3.06	366	Z	estimated
February	1956	0.81	2.48	3.06	366	Z	estimated
March	1956	0.81	2.48	3.06	366	Z	estimated
April	1956	0.81	2.48	3.06	366	Z	estimated
May	1956	0.81	2.48	3.06	366	Z	estimated
June	1956	0.81	2.48	3.06	366	Z	estimated
July	1956	0.81	2.48	3.06	366	Z	estimated
August	1956	0.81	2.48	3.06	366	Z	estimated
September	1956	0.81	2.48	3.06	366	Z	estimated
October	1956	0.81	2.48	3.06	366	Z	estimated
November	1956	0.81	2.48	3.06	366	Z	estimated
December	1956	0.81	2.48	3.06	366	Z	estimated
January	1957	0.81	2.48	3.06	365	Z	estimated
February	1957	0.81	2.48	3.06	365	Z	estimated
March	1957	0.81	2.48	3.06	365	Z	estimated
April	1957	0.81	2.48	3.06	365	Z	estimated
May	1957	0.81	2.48	3.06	365	Z	estimated
June	1957	0.81	2.48	3.06	365	Z	estimated
July	1957	0.81	2.48	3.06	365	Z	estimated
August	1957	0.81	2.48	3.06	365	Z	estimated
September	1957	0.81	2.48	3.06	365	Z	estimated
October	1957	0.81	2.48	3.06	365	Z	estimated
November	1957	0.81	2.48	3.06	365	Z	estimated
December	1957	0.81	2.48	3.06	365	Z	estimated
January	1958	0.37	1.12	1.39	365	R	estimated
February	1958	0.37	1.12	1.39	365	R	estimated
March	1958	0.37	1.12	1.39	365	R	estimated
April	1958	0.37	1.12	1.39	365	R	estimated
May	1958	0.37	1.12	1.39	365	R	estimated
June	1958	0.37	1.12	1.39	365	R	estimated
July	1958	0.37	1.12	1.39	365	R	estimated
August	1958	0.37	1.12	1.39	365	R	estimated
September	1958	1.66	5.09	6.28	30	M	--
October	1958	1.90	5.82	7.18	31	M	--
November	1958	0.70	2.14	2.64	30	M	--
December	1958	0.02	0.05	0.06	31	M	--
January	1959	0.59	1.82	2.25	31	M	--
February	1959	0.87	2.65	3.27	28	M	--
March	1959	0.89	2.74	3.38	31	M	--
April	1959	0.91	2.79	3.44	30	M	--
May	1959	0.69	2.11	2.60	31	M	--
June	1959	1.01	3.09	3.81	30	M	--
July	1959	0.00	0.00	0.00	31	M	--

WW-5A Monthly Pumping Data

August	1959	1.01	3.10	3.82	31	M	--
September	1959	1.15	3.52	4.34	30	M	--
October	1959	0.45	1.36	1.68	31	M	--
November	1959	0.70	2.16	2.66	30	M	--
December	1959	0.56	1.72	2.12	31	M	--
January	1960	0.42	1.29	1.59	31	M	--
February	1960	0.42	1.27	1.57	29	M	--
March	1960	0.43	1.31	1.62	31	M	--
April	1960	0.41	1.26	1.55	30	M	--
May	1960	0.52	1.60	1.98	31	M	--
June	1960	0.73	2.24	2.77	30	M	--
July	1960	1.50	4.60	5.67	31	M	--
August	1960	1.90	5.82	7.18	31	M	--
September	1960	1.98	6.09	7.51	30	M	--
October	1960	2.18	6.69	8.25	31	M	--
November	1960	1.19	3.64	4.49	30	M	--
December	1960	1.04	3.18	3.92	31	M	--
January	1961	1.30	3.98	4.91	31	M	--
February	1961	1.26	3.86	4.76	28	M	--
March	1961	1.41	4.32	5.33	31	M	--
April	1961	1.67	5.11	6.31	30	M	--
May	1961	0.71	2.16	2.67	31	M	--
June	1961	1.28	3.92	4.84	30	M	--
July	1961	1.50	4.59	5.66	31	M	--
August	1961	1.51	4.64	5.73	31	M	--
September	1961	1.27	3.90	4.81	30	M	--
October	1961	2.26	6.93	8.54	31	M	--
November	1961	2.78	8.53	10.52	30	M	--
December	1961	2.62	8.03	9.90	31	M	--
January	1962	2.88	8.84	10.90	31	M	--
February	1962	2.54	7.79	9.61	28	M	--
March	1962	3.60	11.03	13.61	31	M	--
April	1962	4.07	12.49	15.41	30	M	--
May	1962	4.25	13.05	16.09	31	M	--
June	1962	3.32	10.18	12.56	30	M	--
July	1962	3.11	9.53	11.75	31	M	--
August	1962	2.81	8.61	10.62	31	M	--
September	1962	1.98	6.08	7.50	30	M	--
October	1962	1.66	5.09	6.28	31	M	--
November	1962	2.18	6.69	8.25	30	M	--
December	1962	1.98	6.06	7.48	31	M	--
January	1963	1.89	5.80	7.16	31	M	--
February	1963	1.58	4.85	5.98	28	M	--
March	1963	1.84	5.65	6.97	31	M	--
April	1963	1.76	5.41	6.67	30	M	--
May	1963	2.60	7.98	9.84	31	M	--
June	1963	2.40	7.35	9.06	30	M	--
July	1963	2.40	7.36	9.07	31	M	--
August	1963	2.62	8.03	9.90	31	M	--
September	1963	1.83	5.63	6.94	30	M	--
October	1963	2.02	6.20	7.64	31	M	--
November	1963	1.61	4.94	6.10	30	M	--

WW-5A Monthly Pumping Data

December	1963	1.70	5.20	6.41	31	M	--
January	1964	1.75	5.38	6.63	31	M	--
February	1964	1.63	5.01	6.18	29	M	--
March	1964	1.73	5.30	6.53	31	M	--
April	1964	1.97	6.03	7.44	30	M	--
May	1964	2.36	7.23	8.91	31	M	--
June	1964	2.38	7.29	9.00	30	M	--
July	1964	2.56	7.85	9.68	31	M	--
August	1964	1.80	5.52	6.80	31	M	--
September	1964	1.18	3.61	4.45	30	M	--
October	1964	0.76	2.32	2.86	31	M	--
November	1964	0.82	2.51	3.09	30	M	--
December	1964	0.99	3.04	3.75	31	M	--
January	1965	1.60	4.91	6.05	31	M	--
February	1965	0.30	0.91	1.12	28	M	--
March	1965	0.46	1.40	1.72	31	M	--
April	1965	0.53	1.63	2.01	30	M	--
May	1965	0.23	0.71	0.88	31	M	--
June	1965	0.67	2.06	2.54	30	M	--
July	1965	1.10	3.37	4.16	31	M	--
August	1965	0.03	0.10	0.12	31	M	--
September	1965	0.31	0.95	1.17	26	M	--
October	1965	--	--	--	0	I	--
November	1965	1.18	3.62	4.46	29	M	--
December	1965	1.38	4.23	5.21	31	M	--
January	1966	2.61	8.02	9.90	31	M	--
February	1966	1.01	3.09	3.81	28	M	--
March	1966	1.20	3.69	4.55	31	M	--
April	1966	1.74	5.33	6.58	30	M	--
May	1966	1.30	3.99	4.92	29	M	--
June	1966	--	--	--	0	I	--
July	1966	--	--	--	0	I	--
August	1966	0.35	1.07	1.32	28	M	--
September	1966	0.18	0.54	0.67	5	M	--
October	1966	1.62	4.96	6.12	31	M	--
November	1966	1.37	4.20	5.17	30	M	--
December	1966	0.74	2.28	2.81	31	M	--
January	1967	1.64	5.02	6.19	31	M	--
February	1967	1.11	3.41	4.20	28	M	--
March	1967	1.49	4.57	5.63	31	M	--
April	1967	0.84	2.56	3.16	30	M	--
May	1967	0.09	0.29	0.36	31	M	--
June	1967	0.26	0.79	0.97	30	M	--
July	1967	1.86	5.69	7.02	365	R	estimated
August	1967	1.86	5.69	7.02	365	R	estimated
September	1967	1.86	5.69	7.02	365	R	estimated
October	1967	1.86	5.69	7.02	365	R	estimated
November	1967	1.86	5.69	7.02	365	R	estimated
December	1967	1.86	5.69	7.02	365	R	estimated
January	1968	1.35	4.14	5.11	366	R	estimated
February	1968	1.35	4.14	5.11	366	R	estimated
March	1968	1.35	4.14	5.11	366	R	estimated

### WW-5A Monthly Pumping Data

April	1968	1.35	4.14	5.11	366	R	estimated
May	1968	1.35	4.14	5.11	366	R	estimated
June	1968	1.35	4.14	5.11	366	R	estimated
July	1968	1.35	4.14	5.11	366	R	estimated
August	1968	1.35	4.14	5.11	366	R	estimated
September	1968	1.35	4.14	5.11	366	R	estimated
October	1968	1.35	4.14	5.11	366	R	estimated
November	1968	1.35	4.14	5.11	366	R	estimated
December	1968	1.35	4.14	5.11	366	R	estimated
January	1969	0.48	1.46	1.80	365	R	estimated
February	1969	0.48	1.46	1.80	365	R	estimated
March	1969	0.48	1.46	1.80	365	R	estimated
April	1969	0.48	1.46	1.80	365	R	estimated
May	1969	0.48	1.46	1.80	365	R	estimated
June	1969	0.48	1.46	1.80	365	R	estimated
July	1969	0.48	1.46	1.80	365	R	estimated
August	1969	0.48	1.46	1.80	365	R	estimated
September	1969	0.48	1.46	1.80	365	R	estimated
October	1969	0.48	1.46	1.80	365	R	estimated
November	1969	0.48	1.46	1.80	365	R	estimated
December	1969	0.48	1.46	1.80	365	R	estimated
January	1970	0.29	0.89	1.10	365	R	estimated
February	1970	0.29	0.89	1.10	365	R	estimated
March	1970	0.29	0.89	1.10	365	R	estimated
April	1970	0.29	0.89	1.10	365	R	estimated
May	1970	0.29	0.89	1.10	365	R	estimated
June	1970	0.29	0.89	1.10	365	R	estimated
July	1970	0.29	0.89	1.10	365	R	estimated
August	1970	0.29	0.89	1.10	365	R	estimated
September	1970	0.29	0.89	1.10	365	R	estimated
October	1970	0.29	0.89	1.10	365	R	estimated
November	1970	0.29	0.89	1.10	365	R	estimated
December	1970	0.29	0.89	1.10	365	R	estimated

<sup>a</sup>Source: I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.  
M = Taken from Bechtel or REECO water production reports.

R = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

Z = Insufficient data to determine monthly value. Annual value listed in annual data set as estimated in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

<sup>b</sup> estimated indicates monthly value was estimated from yearly total

WW-5B Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>	Comment <sup>b</sup>
May	1951	2.54	7.79	9.60	365	Z	estimated
June	1951	2.54	7.79	9.60	365	Z	estimated
July	1951	2.54	7.79	9.60	365	Z	estimated
August	1951	2.54	7.79	9.60	365	Z	estimated
September	1951	2.54	7.79	9.60	365	Z	estimated
October	1951	2.54	7.79	9.60	365	Z	estimated
November	1951	2.54	7.79	9.60	365	Z	estimated
December	1951	2.54	7.79	9.60	365	Z	estimated
January	1952	1.69	5.19	6.40	366	Z	estimated
February	1952	1.69	5.19	6.40	366	Z	estimated
March	1952	1.69	5.19	6.40	366	Z	estimated
April	1952	1.69	5.19	6.40	366	Z	estimated
May	1952	1.69	5.19	6.40	366	Z	estimated
June	1952	1.69	5.19	6.40	366	Z	estimated
July	1952	1.69	5.19	6.40	366	Z	estimated
August	1952	1.69	5.19	6.40	366	Z	estimated
September	1952	1.69	5.19	6.40	366	Z	estimated
October	1952	1.69	5.19	6.40	366	Z	estimated
November	1952	1.69	5.19	6.40	366	Z	estimated
December	1952	1.69	5.19	6.40	366	Z	estimated
January	1953	1.69	5.19	6.40	365	Z	estimated
February	1953	1.69	5.19	6.40	365	Z	estimated
March	1953	1.69	5.19	6.40	365	Z	estimated
April	1953	1.69	5.19	6.40	365	Z	estimated
May	1953	1.69	5.19	6.40	365	Z	estimated
June	1953	1.69	5.19	6.40	365	Z	estimated
July	1953	1.69	5.19	6.40	365	Z	estimated
August	1953	1.69	5.19	6.40	365	Z	estimated
September	1953	1.69	5.19	6.40	365	Z	estimated
October	1953	1.69	5.19	6.40	365	Z	estimated
November	1953	1.69	5.19	6.40	365	Z	estimated
December	1953	1.69	5.19	6.40	365	Z	estimated
January	1954	1.69	5.19	6.40	365	Z	estimated
February	1954	1.69	5.19	6.40	365	Z	estimated
March	1954	1.69	5.19	6.40	365	Z	estimated
April	1954	1.69	5.19	6.40	365	Z	estimated
May	1954	1.69	5.19	6.40	365	Z	estimated
June	1954	1.69	5.19	6.40	365	Z	estimated
July	1954	1.69	5.19	6.40	365	Z	estimated
August	1954	1.69	5.19	6.40	365	Z	estimated
September	1954	1.69	5.19	6.40	365	Z	estimated
October	1954	1.69	5.19	6.40	365	Z	estimated
November	1954	1.69	5.19	6.40	365	Z	estimated
December	1954	1.69	5.19	6.40	365	Z	estimated
January	1955	1.69	5.19	6.40	365	Z	estimated
February	1955	1.69	5.19	6.40	365	Z	estimated
March	1955	1.69	5.19	6.40	365	Z	estimated
April	1955	1.69	5.19	6.40	365	Z	estimated
May	1955	1.69	5.19	6.40	365	Z	estimated

WW-5B Monthly Pumping Data

June	1955	1.69	5.19	6.40	365	Z	estimated
July	1955	1.69	5.19	6.40	365	Z	estimated
August	1955	1.69	5.19	6.40	365	Z	estimated
September	1955	1.69	5.19	6.40	365	Z	estimated
October	1955	1.69	5.19	6.40	365	Z	estimated
November	1955	1.69	5.19	6.40	365	Z	estimated
December	1955	1.69	5.19	6.40	365	Z	estimated
January	1956	1.69	5.19	6.40	366	Z	estimated
February	1956	1.69	5.19	6.40	366	Z	estimated
March	1956	1.69	5.19	6.40	366	Z	estimated
April	1956	1.69	5.19	6.40	366	Z	estimated
May	1956	1.69	5.19	6.40	366	Z	estimated
June	1956	1.69	5.19	6.40	366	Z	estimated
July	1956	1.69	5.19	6.40	366	Z	estimated
August	1956	1.69	5.19	6.40	366	Z	estimated
September	1956	1.69	5.19	6.40	366	Z	estimated
October	1956	1.69	5.19	6.40	366	Z	estimated
November	1956	1.69	5.19	6.40	366	Z	estimated
December	1956	1.69	5.19	6.40	366	Z	estimated
January	1957	1.69	5.19	6.40	365	Z	estimated
February	1957	1.69	5.19	6.40	365	Z	estimated
March	1957	1.69	5.19	6.40	365	Z	estimated
April	1957	1.69	5.19	6.40	365	Z	estimated
May	1957	1.69	5.19	6.40	365	Z	estimated
June	1957	1.69	5.19	6.40	365	Z	estimated
July	1957	1.69	5.19	6.40	365	Z	estimated
August	1957	1.69	5.19	6.40	365	Z	estimated
September	1957	1.69	5.19	6.40	365	Z	estimated
October	1957	1.69	5.19	6.40	365	Z	estimated
November	1957	1.69	5.19	6.40	365	Z	estimated
December	1957	1.69	5.19	6.40	365	Z	estimated
January	1958	2.10	6.45	7.96	365	R	estimated
February	1958	2.10	6.45	7.96	365	R	estimated
March	1958	2.10	6.45	7.96	365	R	estimated
April	1958	2.10	6.45	7.96	365	R	estimated
May	1958	2.10	6.45	7.96	365	R	estimated
June	1958	2.10	6.45	7.96	365	R	estimated
July	1958	2.10	6.45	7.96	365	R	estimated
August	1958	2.10	6.45	7.96	365	R	estimated
September	1958	1.66	5.09	6.28	30	M	--
October	1958	1.90	5.82	7.18	31	M	--
November	1958	0.70	2.14	2.64	30	M	--
December	1958	0.02	0.05	0.06	31	M	--
January	1959	0.59	1.82	2.25	31	M	--
February	1959	0.87	2.65	3.27	28	M	--
March	1959	0.89	2.74	3.38	31	M	--
April	1959	0.91	2.79	3.44	30	M	--
May	1959	0.69	2.11	2.60	31	M	--
June	1959	1.01	3.09	3.81	30	M	--
July	1959	0.00	0.00	0.00	31	M	--
August	1959	1.01	3.10	3.82	31	M	--
September	1959	1.15	3.52	4.34	30	M	--

WW-5B Monthly Pumping Data

October	1959	0.45	1.36	1.68	31	M	--
November	1959	0.70	2.16	2.66	30	M	--
December	1959	0.56	1.72	2.12	31	M	--
January	1960	0.42	1.29	1.59	31	M	--
February	1960	0.42	1.27	1.57	29	M	--
March	1960	0.43	1.31	1.62	31	M	--
April	1960	0.41	1.26	1.55	30	M	--
May	1960	0.52	1.60	1.98	31	M	--
June	1960	0.73	2.24	2.77	30	M	--
July	1960	1.50	4.60	5.67	31	M	--
August	1960	1.90	5.82	7.18	31	M	--
September	1960	1.98	6.09	7.51	30	M	--
October	1960	2.18	6.69	8.25	31	M	--
November	1960	1.19	3.64	4.49	30	M	--
December	1960	1.04	3.18	3.92	31	M	--
January	1961	1.30	3.98	4.91	31	M	--
February	1961	1.26	3.86	4.76	28	M	--
March	1961	1.41	4.32	5.33	31	M	--
April	1961	1.67	5.11	6.31	30	M	--
May	1961	0.71	2.16	2.67	31	M	--
June	1961	1.28	3.92	4.84	30	M	--
July	1961	1.50	4.59	5.66	31	M	--
August	1961	1.51	4.64	5.73	31	M	--
September	1961	1.27	3.90	4.81	30	M	--
October	1961	2.26	6.93	8.54	31	M	--
November	1961	2.78	8.53	10.52	30	M	--
December	1961	2.62	8.03	9.90	31	M	--
January	1962	2.88	8.84	10.90	31	M	--
February	1962	2.54	7.79	9.61	28	M	--
March	1962	3.60	11.03	13.61	31	M	--
April	1962	4.07	12.49	15.41	30	M	--
May	1962	4.25	13.05	16.09	31	M	--
June	1962	3.32	10.18	12.56	30	M	--
July	1962	3.11	9.53	11.75	31	M	--
August	1962	2.81	8.61	10.62	31	M	--
September	1962	1.98	6.08	7.50	30	M	--
October	1962	1.66	5.09	6.28	31	M	--
November	1962	2.18	6.69	8.25	30	M	--
December	1962	1.98	6.06	7.48	31	M	--
January	1963	1.89	5.80	7.16	31	M	--
February	1963	1.58	4.85	5.98	28	M	--
March	1963	1.84	5.65	6.97	31	M	--
April	1963	1.76	5.41	6.67	30	M	--
May	1963	2.60	7.98	9.84	31	M	--
June	1963	2.40	7.35	9.06	30	M	--
July	1963	2.40	7.36	9.07	31	M	--
August	1963	2.62	8.03	9.90	31	M	--
September	1963	1.83	5.63	6.94	30	M	--
October	1963	2.02	6.20	7.64	31	M	--
November	1963	1.61	4.94	6.10	30	M	--
December	1963	1.70	5.20	6.41	31	M	--
January	1964	1.75	5.38	6.63	31	M	--

WW-5B Monthly Pumping Data

February	1964	1.63	5.01	6.18	29	M	--
March	1964	1.73	5.30	6.53	31	M	--
April	1964	1.97	6.03	7.44	30	M	--
May	1964	2.36	7.23	8.91	31	M	--
June	1964	2.38	7.29	9.00	30	M	--
July	1964	2.56	7.85	9.68	31	M	--
August	1964	1.80	5.52	6.80	31	M	--
September	1964	1.18	3.61	4.45	30	M	--
October	1964	0.76	2.32	2.86	31	M	--
November	1964	0.82	2.51	3.09	30	M	--
December	1964	0.99	3.04	3.75	31	M	--
January	1965	1.60	4.91	6.05	31	M	--
February	1965	0.30	0.91	1.12	28	M	--
March	1965	0.46	1.40	1.72	31	M	--
April	1965	0.53	1.63	2.01	30	M	--
May	1965	0.23	0.71	0.88	31	M	--
June	1965	0.67	2.06	2.54	30	M	--
July	1965	1.10	3.37	4.16	31	M	--
August	1965	0.03	0.10	0.12	31	M	--
September	1965	0.31	0.95	1.17	26	M	--
October	1965	--	--	--	0	I	--
November	1965	1.18	3.62	4.46	29	M	--
December	1965	1.38	4.23	5.21	31	M	--
January	1966	2.61	8.02	9.90	31	M	--
February	1966	1.01	3.09	3.81	28	M	--
March	1966	1.20	3.69	4.55	31	M	--
April	1966	1.74	5.33	6.58	30	M	--
May	1966	1.30	3.99	4.92	29	M	--
June	1966	--	--	--	0	I	--
July	1966	--	--	--	0	I	--
August	1966	0.35	1.07	1.32	28	M	--
September	1966	0.18	0.54	0.67	5	M	--
October	1966	1.62	4.96	6.12	31	M	--
November	1966	1.37	4.20	5.17	30	M	--
December	1966	0.74	2.28	2.81	31	M	--
January	1967	1.64	5.02	6.19	31	M	--
February	1967	1.11	3.41	4.20	28	M	--
March	1967	1.49	4.57	5.63	31	M	--
April	1967	0.84	2.56	3.16	30	M	--
May	1967	0.09	0.29	0.36	31	M	--
June	1967	0.26	0.79	0.97	30	M	--
July	1967	0.69	2.12	2.62	365	R	estimated
August	1967	0.69	2.12	2.62	365	R	estimated
September	1967	0.69	2.12	2.62	365	R	estimated
October	1967	0.69	2.12	2.62	365	R	estimated
November	1967	0.69	2.12	2.62	365	R	estimated
December	1967	0.69	2.12	2.62	365	R	estimated
January	1968	0.87	2.66	3.28	366	R	estimated
February	1968	0.87	2.66	3.28	366	R	estimated
March	1968	0.87	2.66	3.28	366	R	estimated
April	1968	0.87	2.66	3.28	366	R	estimated
May	1968	0.87	2.66	3.28	366	R	estimated

WW-5B Monthly Pumping Data

June	1968	0.87	2.66	3.28	366	R	estimated
July	1968	0.87	2.66	3.28	366	R	estimated
August	1968	0.87	2.66	3.28	366	R	estimated
September	1968	0.87	2.66	3.28	366	R	estimated
October	1968	0.87	2.66	3.28	366	R	estimated
November	1968	0.87	2.66	3.28	366	R	estimated
December	1968	0.87	2.66	3.28	366	R	estimated
January	1969	0.57	1.74	2.14	365	R	estimated
February	1969	0.57	1.74	2.14	365	R	estimated
March	1969	0.57	1.74	2.14	365	R	estimated
April	1969	0.57	1.74	2.14	365	R	estimated
May	1969	0.57	1.74	2.14	365	R	estimated
June	1969	0.57	1.74	2.14	365	R	estimated
July	1969	0.57	1.74	2.14	365	R	estimated
August	1969	0.57	1.74	2.14	365	R	estimated
September	1969	0.57	1.74	2.14	365	R	estimated
October	1969	0.57	1.74	2.14	365	R	estimated
November	1969	0.57	1.74	2.14	365	R	estimated
December	1969	0.57	1.74	2.14	365	R	estimated
January	1970	1.97	6.03	7.44	365	R	estimated
February	1970	1.97	6.03	7.44	365	R	estimated
March	1970	1.97	6.03	7.44	365	R	estimated
April	1970	1.97	6.03	7.44	365	R	estimated
May	1970	1.97	6.03	7.44	365	R	estimated
June	1970	1.97	6.03	7.44	365	R	estimated
July	1970	1.97	6.03	7.44	365	R	estimated
August	1970	1.97	6.03	7.44	365	R	estimated
September	1970	1.97	6.03	7.44	365	R	estimated
October	1970	1.97	6.03	7.44	365	R	estimated
November	1970	1.97	6.03	7.44	365	R	estimated
December	1970	1.97	6.03	7.44	365	R	estimated
January	1971	0.68	2.07	2.55	365	R	estimated
February	1971	0.68	2.07	2.55	365	R	estimated
March	1971	0.68	2.07	2.55	365	R	estimated
April	1971	0.68	2.07	2.55	365	R	estimated
May	1971	0.68	2.07	2.55	365	R	estimated
June	1971	0.68	2.07	2.55	365	R	estimated
July	1971	0.68	2.07	2.55	365	R	estimated
August	1971	0.68	2.07	2.55	365	R	estimated
September	1971	0.68	2.07	2.55	365	R	estimated
October	1971	0.68	2.07	2.55	365	R	estimated
November	1971	0.68	2.07	2.55	365	R	estimated
December	1971	0.68	2.07	2.55	365	R	estimated
January	1972	1.47	4.50	5.55	366	H	estimated
February	1972	1.47	4.50	5.55	366	H	estimated
March	1972	1.47	4.50	5.55	366	H	estimated
April	1972	1.47	4.50	5.55	366	H	estimated
May	1972	1.47	4.50	5.55	366	H	estimated
June	1972	1.47	4.50	5.55	366	H	estimated
July	1972	1.47	4.50	5.55	366	H	estimated
August	1972	1.47	4.50	5.55	366	H	estimated
September	1972	1.47	4.50	5.55	366	H	estimated

WW-5B Monthly Pumping Data

October	1972	1.47	4.50	5.55	366	H	estimated
November	1972	1.47	4.50	5.55	366	H	estimated
December	1972	1.47	4.50	5.55	366	H	estimated
January	1973	1.36	4.17	5.14	365	H	estimated
February	1973	1.36	4.17	5.14	365	H	estimated
March	1973	1.36	4.17	5.14	365	H	estimated
April	1973	1.36	4.17	5.14	365	H	estimated
May	1973	1.36	4.17	5.14	365	H	estimated
June	1973	1.36	4.17	5.14	365	H	estimated
July	1973	1.36	4.17	5.14	365	H	estimated
August	1973	1.36	4.17	5.14	365	H	estimated
September	1973	1.36	4.17	5.14	365	H	estimated
October	1973	1.36	4.17	5.14	365	H	estimated
November	1973	1.36	4.17	5.14	365	H	estimated
December	1973	1.36	4.17	5.14	365	H	estimated
January	1974	1.71	5.24	6.47	365	H	estimated
February	1974	1.71	5.24	6.47	365	H	estimated
March	1974	1.71	5.24	6.47	365	H	estimated
April	1974	1.71	5.24	6.47	365	H	estimated
May	1974	1.71	5.24	6.47	365	H	estimated
June	1974	1.71	5.24	6.47	365	H	estimated
July	1974	1.71	5.24	6.47	365	H	estimated
August	1974	1.71	5.24	6.47	365	H	estimated
September	1974	1.71	5.24	6.47	365	H	estimated
October	1974	1.71	5.24	6.47	365	H	estimated
November	1974	1.71	5.24	6.47	365	H	estimated
December	1974	1.71	5.24	6.47	365	H	estimated
January	1975	1.88	5.75	7.10	365	H	estimated
February	1975	1.88	5.75	7.10	365	H	estimated
March	1975	1.88	5.75	7.10	365	H	estimated
April	1975	1.88	5.75	7.10	365	H	estimated
May	1975	1.88	5.75	7.10	365	H	estimated
June	1975	1.88	5.75	7.10	365	H	estimated
July	1975	1.88	5.75	7.10	365	H	estimated
August	1975	1.88	5.75	7.10	365	H	estimated
September	1975	1.88	5.75	7.10	365	H	estimated
October	1975	1.88	5.75	7.10	365	H	estimated
November	1975	1.88	5.75	7.10	365	H	estimated
December	1975	1.88	5.75	7.10	365	H	estimated
January	1976	1.77	5.42	6.69	366	H	estimated
February	1976	1.77	5.42	6.69	366	H	estimated
March	1976	1.77	5.42	6.69	366	H	estimated
April	1976	1.77	5.42	6.69	366	H	estimated
May	1976	1.77	5.42	6.69	366	H	estimated
June	1976	1.77	5.42	6.69	366	H	estimated
July	1976	1.77	5.42	6.69	366	H	estimated
August	1976	1.77	5.42	6.69	366	H	estimated
September	1976	1.77	5.42	6.69	366	H	estimated
October	1976	1.77	5.42	6.69	366	H	estimated
November	1976	1.77	5.42	6.69	366	H	estimated
December	1976	1.77	5.42	6.69	366	H	estimated
January	1977	1.74	5.34	6.59	365	H	estimated

WW-5B Monthly Pumping Data

February	1977	1.74	5.34	6.59	365	H	estimated
March	1977	1.74	5.34	6.59	365	H	estimated
April	1977	1.74	5.34	6.59	365	H	estimated
May	1977	1.74	5.34	6.59	365	H	estimated
June	1977	1.74	5.34	6.59	365	H	estimated
July	1977	1.74	5.34	6.59	365	H	estimated
August	1977	1.74	5.34	6.59	365	H	estimated
September	1977	1.74	5.34	6.59	365	H	estimated
October	1977	1.74	5.34	6.59	365	H	estimated
November	1977	1.74	5.34	6.59	365	H	estimated
December	1977	1.74	5.34	6.59	365	H	estimated
January	1978	2.01	6.16	7.60	365	H	estimated
February	1978	2.01	6.16	7.60	365	H	estimated
March	1978	2.01	6.16	7.60	365	H	estimated
April	1978	2.01	6.16	7.60	365	H	estimated
May	1978	2.01	6.16	7.60	365	H	estimated
June	1978	2.01	6.16	7.60	365	H	estimated
July	1978	2.01	6.16	7.60	365	H	estimated
August	1978	2.01	6.16	7.60	365	H	estimated
September	1978	2.01	6.16	7.60	365	H	estimated
October	1978	2.01	6.16	7.60	365	H	estimated
November	1978	2.01	6.16	7.60	365	H	estimated
December	1978	2.01	6.16	7.60	365	H	estimated
January	1979	1.90	5.83	7.19	365	H	estimated
February	1979	1.90	5.83	7.19	365	H	estimated
March	1979	1.90	5.83	7.19	365	H	estimated
April	1979	1.90	5.83	7.19	365	H	estimated
May	1979	1.90	5.83	7.19	365	H	estimated
June	1979	1.90	5.83	7.19	365	H	estimated
July	1979	1.90	5.83	7.19	365	H	estimated
August	1979	1.90	5.83	7.19	365	H	estimated
September	1979	1.90	5.83	7.19	365	H	estimated
October	1979	1.90	5.83	7.19	365	H	estimated
November	1979	1.90	5.83	7.19	365	H	estimated
December	1979	1.90	5.83	7.19	365	H	estimated
January	1980	2.39	7.34	9.05	366	H	estimated
February	1980	2.39	7.34	9.05	366	H	estimated
March	1980	2.39	7.34	9.05	366	H	estimated
April	1980	2.39	7.34	9.05	366	H	estimated
May	1980	2.39	7.34	9.05	366	H	estimated
June	1980	2.39	7.34	9.05	366	H	estimated
July	1980	2.39	7.34	9.05	366	H	estimated
August	1980	2.39	7.34	9.05	366	H	estimated
September	1980	2.39	7.34	9.05	366	H	estimated
October	1980	2.39	7.34	9.05	366	H	estimated
November	1980	2.39	7.34	9.05	366	H	estimated
December	1980	2.39	7.34	9.05	366	H	estimated
January	1981	2.91	8.92	11.01	365	H	estimated
February	1981	2.91	8.92	11.01	365	H	estimated
March	1981	2.91	8.92	11.01	365	H	estimated
April	1981	2.91	8.92	11.01	365	H	estimated
May	1981	2.91	8.92	11.01	365	H	estimated

WW-5B Monthly Pumping Data

June	1981	2.91	8.92	11.01	365	H	estimated
July	1981	2.91	8.92	11.01	365	H	estimated
August	1981	2.91	8.92	11.01	365	H	estimated
September	1981	2.91	8.92	11.01	365	H	estimated
October	1981	2.91	8.92	11.01	365	H	estimated
November	1981	2.91	8.92	11.01	365	H	estimated
December	1981	2.91	8.92	11.01	365	H	estimated
January	1982	3.56	10.92	13.47	365	H	estimated
February	1982	3.56	10.92	13.47	365	H	estimated
March	1982	3.56	10.92	13.47	365	H	estimated
April	1982	3.56	10.92	13.47	365	H	estimated
May	1982	3.56	10.92	13.47	365	H	estimated
June	1982	3.56	10.92	13.47	365	H	estimated
July	1982	3.56	10.92	13.47	365	H	estimated
August	1982	3.56	10.92	13.47	365	H	estimated
September	1982	3.56	10.92	13.47	365	H	estimated
October	1982	3.56	10.92	13.47	365	H	estimated
November	1982	3.56	10.92	13.47	365	H	estimated
December	1982	3.56	10.92	13.47	365	H	estimated
January	1983	1.49	4.58	5.65	31	M	--
February	1983	1.87	5.73	7.07	28	M	--
March	1983	3.51	10.78	13.30	31	M	--
April	1983	2.67	8.19	10.10	30	M	--
May	1983	4.95	15.19	18.73	31	M	--
June	1983	3.49	10.71	13.20	30	M	--
July	1983	3.49	10.71	13.20	31	M	--
August	1983	2.67	8.20	10.11	31	M	--
September	1983	2.38	7.29	8.99	30	M	--
October	1983	2.26	6.95	8.57	31	M	--
November	1983	1.55	4.74	5.85	30	M	--
December	1983	1.85	5.67	7.00	31	M	--
January	1984	2.39	7.32	9.03	31	M	--
February	1984	6.57	20.16	24.86	29	M	--
March	1984	5.84	17.91	22.09	31	M	--
April	1984	5.10	15.65	19.30	30	M	--
May	1984	3.77	11.56	14.26	31	M	--
June	1984	3.23	9.90	12.21	30	M	--
July	1984	7.27	22.32	27.53	31	M	--
August	1984	5.79	17.77	21.92	31	M	--
September	1984	4.89	15.02	18.52	30	M	--
October	1984	4.66	14.29	17.62	31	M	--
November	1984	4.18	12.82	15.81	30	M	--
December	1984	4.18	12.82	15.81	31	E	--
January	1985	6.38	19.58	24.15	31	E	--
February	1985	5.46	16.76	20.67	28	M	--
March	1985	5.86	17.99	22.19	31	M	--
April	1985	6.01	18.43	22.73	30	M	--

WW-5B Monthly Pumping Data

May	1985	6.40	19.65	24.24	31	M	--
June	1985	5.32	16.31	20.12	30	M	--
July	1985	3.18	9.76	12.04	31	M	--
August	1985	3.14	9.62	11.87	31	M	--
September	1985	6.61	20.29	25.02	30	M	--
October	1985	6.39	19.60	24.17	31	M	--
November	1985	6.05	18.55	22.88	30	M	--
December	1985	7.05	21.63	26.68	31	E	--
January	1986	6.16	18.89	23.30	31	M	--
February	1986	4.02	12.35	15.23	28	M	--
March	1986	5.84	17.92	22.10	31	M	--
April	1986	5.21	16.00	19.73	30	M	--
May	1986	4.99	15.31	18.88	31	M	--
June	1986	3.94	12.08	14.90	30	M	--
July	1986	5.19	15.93	19.64	31	M	--
August	1986	6.25	19.17	23.64	31	M	--
September	1986	5.87	18.00	22.20	30	M	--
October	1986	3.63	11.14	13.74	31	M	--
November	1986	4.08	12.51	15.43	30	M	--
December	1986	3.34	10.25	12.64	31	M	--
January	1987	3.34	10.26	12.65	31	M	--
February	1987	3.55	10.90	13.45	28	M	--
March	1987	3.64	11.17	13.78	31	M	--
April	1987	3.93	12.05	14.87	30	M	--
May	1987	3.69	11.32	13.96	31	M	--
June	1987	3.70	11.37	14.02	30	M	--
July	1987	3.73	11.46	14.13	31	M	--
August	1987	4.96	15.22	18.77	31	M	--
September	1987	4.98	15.27	18.83	30	M	--
October	1987	6.60	20.24	24.96	31	M	--
November	1987	4.69	14.39	17.74	30	M	--
December	1987	3.68	11.28	13.91	31	M	--
January	1988	3.73	11.44	14.11	31	M	--
February	1988	4.62	14.16	17.47	29	M	--
March	1988	9.01	27.66	34.11	31	M	--
April	1988	6.53	20.05	24.73	30	M	--
May	1988	7.19	22.05	27.20	31	M	--
June	1988	5.65	17.34	21.38	30	M	--
July	1988	6.20	19.03	23.47	31	M	--
August	1988	5.09	15.63	19.28	31	M	--
September	1988	5.12	15.71	19.37	30	M	--
October	1988	4.32	13.26	16.35	31	M	--
November	1988	0.00	0.00	0.00	30	M	--
December	1988	0.00	0.00	0.00	31	M	--

WW-5B Monthly Pumping Data

January	1989	0.00	0.00	0.00	31	M	--
February	1989	0.00	0.00	0.00	28	M	--
March	1989	0.00	0.00	0.00	31	M	--
April	1989	0.00	0.00	0.00	30	M	--
May	1989	0.00	0.00	0.00	31	M	--
June	1989	0.00	0.00	0.00	30	M	--
July	1989	0.00	0.00	0.00	31	M	--
August	1989	0.00	0.00	0.00	31	M	--
September	1989	0.00	0.00	0.00	30	M	--
October	1989	0.00	0.00	0.00	31	M	--
November	1989	0.00	0.00	0.00	30	M	--
December	1989	0.00	0.00	0.00	31	M	--
January	1990	0.00	0.00	0.00	31	M	--
February	1990	0.00	0.00	0.00	28	M	--
March	1990	0.00	0.00	0.00	31	M	--
April	1990	0.00	0.00	0.00	30	M	--
May	1990	0.00	0.00	0.00	31	M	--
June	1990	0.00	0.00	0.00	30	M	--
July	1990	0.00	0.00	0.00	31	M	--
August	1990	0.00	0.00	0.00	31	M	--
September	1990	0.00	0.00	0.00	30	M	--
October	1990	0.00	0.00	0.00	31	M	--
November	1990	0.00	0.00	0.00	30	M	--
December	1990	0.00	0.00	0.00	31	M	--
January	1991	0.00	0.00	0.00	31	M	--
February	1991	0.00	0.00	0.00	28	M	--
March	1991	0.00	0.00	0.00	31	M	--
April	1991	0.00	0.00	0.00	30	M	--
May	1991	0.00	0.00	0.00	31	M	--
June	1991	0.00	0.00	0.00	30	M	--
July	1991	0.00	0.00	0.00	31	M	--
August	1991	0.00	0.00	0.00	31	M	--
September	1991	0.00	0.00	0.00	30	M	--
October	1991	0.00	0.00	0.00	31	M	--
November	1991	0.00	0.00	0.00	30	M	--
December	1991	0.00	0.00	0.00	31	M	--
January	1992	0.00	0.00	0.00	31	M	--
February	1992	0.00	0.00	0.00	29	M	--
March	1992	0.00	0.00	0.00	31	M	--
April	1992	0.00	0.00	0.00	30	M	--
May	1992	0.00	0.00	0.00	31	M	--
June	1992	0.00	0.00	0.00	30	M	--
July	1992	0.00	0.00	0.00	31	M	--
August	1992	0.00	0.00	0.00	31	M	--

WW-5B Monthly Pumping Data

September	1992	0.00	0.00	0.00	30	M	--
October	1992	0.00	0.00	0.00	31	M	--
November	1992	0.00	0.00	0.00	30	M	--
December	1992	0.00	0.00	0.00	31	M	--
January	1993	0.00	0.00	0.00	31	M	--
February	1993	0.00	0.00	0.00	28	M	--
March	1993	0.00	0.00	0.00	31	M	--
April	1993	0.00	0.00	0.00	30	M	--
May	1993	0.57	1.74	2.14	31	M	--
June	1993	1.25	3.82	4.72	30	M	--
July	1993	6.66	20.45	25.22	31	M	--
August	1993	9.77	29.97	36.96	31	M	--
September	1993	4.53	13.91	17.15	30	M	--
October	1993	3.39	10.39	12.82	31	M	--
November	1993	2.21	6.78	8.36	30	M	--
December	1993	1.39	4.26	5.26	31	M	--
January	1994	2.05	6.29	7.75	31	M	--
February	1994	1.89	5.78	7.13	28	M	--
March	1994	3.04	9.34	11.52	31	M	--
April	1994	3.29	10.10	12.46	30	M	--
May	1994	3.90	11.97	14.76	31	M	--
June	1994	3.30	10.12	12.48	30	M	--
July	1994	6.96	21.35	26.34	31	M	--
August	1994	5.76	17.68	21.80	31	M	--
September	1994	4.13	12.66	15.62	30	M	--
October	1994	8.31	25.49	31.44	31	M	--
November	1994	6.64	20.38	25.14	30	M	--
December	1994	5.92	18.17	22.41	31	M	--
January	1995	6.86	21.04	25.94	31	M	--
February	1995	7.72	23.69	29.21	28	M	--
March	1995	9.33	28.63	35.31	31	M	--
April	1995	9.71	29.80	36.75	30	M	--
May	1995	9.96	30.58	37.71	31	M	--
June	1995	7.99	24.51	30.22	30	M	--
July	1995	7.76	23.83	29.39	31	M	--
August	1995	9.59	29.44	36.31	31	M	--
September	1995	4.79	14.69	18.11	30	M	--
October	1995	4.40	13.50	16.65	31	M	--
November	1995	4.98	15.30	18.86	30	M	--
December	1995	4.58	14.06	17.35	31	M	--
January	1996	4.32	13.25	16.34	31	M	--
February	1996	4.24	13.02	16.06	29	M	--
March	1996	4.93	15.14	18.67	31	M	--
April	1996	4.20	12.89	15.90	30	M	--

WW-5B Monthly Pumping Data

May	1996	3.66	11.23	13.85	31	M	--
June	1996	3.56	10.92	13.46	30	M	--
July	1996	4.22	12.94	15.96	31	M	--
August	1996	3.16	9.70	11.96	31	M	--
September	1996	3.80	11.67	14.40	30	M	--
October	1996	3.66	11.24	13.86	31	M	--
November	1996	3.73	11.43	14.10	30	M	--
December	1996	4.37	13.40	16.53	31	M	--
January	1997	3.27	10.04	12.38	31	M	--
February	1997	3.49	10.70	13.20	28	M	--
March	1997	4.16	12.76	15.74	31	M	--
April	1997	3.50	10.73	13.23	30	M	--
May	1997	4.04	12.40	15.30	31	M	--
June	1997	3.57	10.95	13.51	30	M	--
July	1997	3.60	11.04	13.62	31	M	--
August	1997	3.73	11.44	14.11	31	M	--
September	1997	3.21	9.85	12.14	30	M	--
October	1997	3.38	10.37	12.79	31	M	--
November	1997	3.55	10.89	13.43	30	M	--
December	1997	3.15	9.67	11.93	31	M	--
January	1998	3.49	10.70	13.20	31	M	--
February	1998	3.46	10.62	13.09	28	M	--
March	1998	4.04	12.39	15.28	31	M	--
April	1998	3.21	9.84	12.14	30	M	--
May	1998	0.91	2.78	3.43	31	M	--
June	1998	1.25	3.82	4.71	30	M	--
July	1998	5.18	15.90	19.61	31	M	--
August	1998	3.14	9.62	11.87	31	M	--
September	1998	3.42	10.48	12.93	30	M	--
October	1998	3.53	10.84	13.37	31	M	--
November	1998	3.20	9.83	12.12	30	M	--
December	1998	3.17	9.71	11.98	31	M	--
January	1999	4.28	13.13	16.19	31	M	--
February	1999	3.52	10.81	13.33	28	M	--
March	1999	3.85	11.81	14.57	31	M	--
April	1999	3.07	9.43	11.63	30	M	--
May	1999	3.58	10.98	13.54	31	M	--
June	1999	4.05	12.42	15.32	30	M	--
July	1999	3.85	11.82	14.58	31	M	--
August	1999	3.59	11.01	13.58	31	M	--
September	1999	3.52	10.80	13.32	30	M	--
October	1999	3.32	10.19	12.57	31	M	--
November	1999	3.32	10.18	12.55	30	M	--
December	1999	0.10	0.31	0.38	31	M	--

WW-5B Monthly Pumping Data

January	2000	0.00	0.00	0.00	31	M	--
February	2000	0.00	0.00	0.00	29	M	--
March	2000	0.00	0.00	0.00	31	M	--
April	2000	0.00	0.00	0.00	30	M	--
May	2000	0.33	1.02	1.26	31	M	--
June	2000	0.84	2.59	3.19	30	M	--
July	2000	4.56	13.98	17.25	31	M	--
August	2000	3.85	11.82	14.58	31	M	--
September	2000	4.16	12.77	15.75	30	M	--
October	2000	3.65	11.21	13.82	31	M	--
November	2000	3.29	10.11	12.47	30	M	--
December	2000	3.38	10.39	12.81	31	M	--
January	2001	3.84	11.78	14.53	31	M	--
February	2001	3.46	10.62	13.10	28	M	--
March	2001	3.79	11.64	14.35	31	M	--
April	2001	2.08	6.39	7.88	30	M	--
May	2001	1.55	4.74	5.85	31	M	--
June	2001	1.80	5.53	6.83	30	M	--
July	2001	1.92	5.90	7.28	31	M	--
August	2001	2.50	7.66	9.45	31	M	--
September	2001	2.06	6.32	7.79	30	M	--
October	2001	2.33	7.15	8.82	31	M	--
November	2001	2.44	7.47	9.22	30	M	--
December	2001	1.48	4.55	5.62	31	M	--
January	2002	2.40	7.37	9.09	31	M	--
February	2002	1.61	4.94	6.09	28	M	--
March	2002	2.44	7.48	9.22	31	M	--
April	2002	2.41	7.40	9.12	30	M	--
May	2002	2.71	8.32	10.26	31	M	--
June	2002	3.57	10.95	13.50	30	M	--
July	2002	3.61	11.07	13.66	31	M	--
August	2002	3.07	9.42	11.62	31	M	--
September	2002	2.94	9.01	11.12	30	M	--
October	2002	2.57	7.90	9.74	31	M	--
November	2002	2.37	7.26	8.95	30	M	--
December	2002	3.47	10.65	13.14	31	M	--
January	2003	1.63	5.00	6.17	31	M	--
February	2003	2.44	7.50	9.25	28	M	--
March	2003	3.26	10.00	12.34	31	M	--
April	2003	2.45	7.51	9.26	30	M	--
May	2003	2.84	8.70	10.74	31	M	--
June	2003	2.60	7.97	9.82	30	M	--
July	2003	2.16	6.62	8.17	31	M	--
August	2003	2.31	7.07	8.72	31	M	--

WW-5B Monthly Pumping Data

September	2003	2.57	7.89	9.74	30	M	--
October	2003	2.78	8.54	10.53	31	M	--
November	2003	2.41	7.40	9.13	30	M	--
December	2003	2.51	7.69	9.49	31	M	--

<sup>a</sup>Source: E = Taken from Bechtel or REECo water production reports and includes estimated values.

H = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Moreo and others, 2003, WRIR 03-4245, Estimated Ground-Water Withdrawals from the Death Valley Regional Flow System, Nevada and California, 1913-98].

I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.

M = Taken from Bechtel or REECo water production reports.

R = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

Z = Insufficient data to determine monthly value. Annual value listed in annual data set as estimated in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

<sup>b</sup> estimated indicates monthly value was estimated from yearly total

WW-5C Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>	Comment <sup>b</sup>
March	1954	1.81	5.55	6.85	365	Z	estimated
April	1954	1.81	5.55	6.85	365	Z	estimated
May	1954	1.81	5.55	6.85	365	Z	estimated
June	1954	1.81	5.55	6.85	365	Z	estimated
July	1954	1.81	5.55	6.85	365	Z	estimated
August	1954	1.81	5.55	6.85	365	Z	estimated
September	1954	1.81	5.55	6.85	365	Z	estimated
October	1954	1.81	5.55	6.85	365	Z	estimated
November	1954	1.81	5.55	6.85	365	Z	estimated
December	1954	1.81	5.55	6.85	365	Z	estimated
January	1955	1.51	4.63	5.71	365	Z	estimated
February	1955	1.51	4.63	5.71	365	Z	estimated
March	1955	1.51	4.63	5.71	365	Z	estimated
April	1955	1.51	4.63	5.71	365	Z	estimated
May	1955	1.51	4.63	5.71	365	Z	estimated
June	1955	1.51	4.63	5.71	365	Z	estimated
July	1955	1.51	4.63	5.71	365	Z	estimated
August	1955	1.51	4.63	5.71	365	Z	estimated
September	1955	1.51	4.63	5.71	365	Z	estimated
October	1955	1.51	4.63	5.71	365	Z	estimated
November	1955	1.51	4.63	5.71	365	Z	estimated
December	1955	1.51	4.63	5.71	365	Z	estimated
January	1956	1.51	4.63	5.71	366	Z	estimated
February	1956	1.51	4.63	5.71	366	Z	estimated
March	1956	1.51	4.63	5.71	366	Z	estimated
April	1956	1.51	4.63	5.71	366	Z	estimated
May	1956	1.51	4.63	5.71	366	Z	estimated
June	1956	1.51	4.63	5.71	366	Z	estimated
July	1956	1.51	4.63	5.71	366	Z	estimated
August	1956	1.51	4.63	5.71	366	Z	estimated
September	1956	1.51	4.63	5.71	366	Z	estimated
October	1956	1.51	4.63	5.71	366	Z	estimated
November	1956	1.51	4.63	5.71	366	Z	estimated
December	1956	1.51	4.63	5.71	366	Z	estimated
January	1957	1.51	4.63	5.71	365	Z	estimated
February	1957	1.51	4.63	5.71	365	Z	estimated
March	1957	1.51	4.63	5.71	365	Z	estimated
April	1957	1.51	4.63	5.71	365	Z	estimated
May	1957	1.51	4.63	5.71	365	Z	estimated
June	1957	1.51	4.63	5.71	365	Z	estimated
July	1957	1.51	4.63	5.71	365	Z	estimated
August	1957	1.51	4.63	5.71	365	Z	estimated
September	1957	1.51	4.63	5.71	365	Z	estimated
October	1957	1.51	4.63	5.71	365	Z	estimated
November	1957	1.51	4.63	5.71	365	Z	estimated
December	1957	1.51	4.63	5.71	365	Z	estimated
January	1958	1.61	4.92	6.07	365	R	estimated
February	1958	1.61	4.92	6.07	365	R	estimated
March	1958	1.61	4.92	6.07	365	R	estimated
April	1958	1.61	4.92	6.07	365	R	estimated

WW-5C Monthly Pumping Data

May	1958	1.61	4.92	6.07	365	R	estimated
June	1958	1.61	4.92	6.07	365	R	estimated
July	1958	1.61	4.92	6.07	365	R	estimated
August	1958	1.61	4.92	6.07	365	R	estimated
September	1958	2.10	6.44	7.95	30	M	--
October	1958	2.61	8.01	9.87	31	M	--
November	1958	1.08	3.31	4.08	30	M	--
December	1958	1.57	4.83	5.95	31	M	--
January	1959	0.96	2.95	3.64	31	M	--
February	1959	0.62	1.90	2.34	28	M	--
March	1959	1.08	3.32	4.09	31	M	--
April	1959	1.27	3.89	4.80	30	M	--
May	1959	1.22	3.74	4.62	31	M	--
June	1959	1.35	4.14	5.11	30	M	--
July	1959	0.00	0.00	0.00	31	M	--
August	1959	1.48	4.54	5.59	31	M	--
September	1959	0.99	3.04	3.75	30	M	--
October	1959	1.07	3.29	4.06	31	M	--
November	1959	0.67	2.05	2.52	30	M	--
December	1959	0.74	2.26	2.78	31	M	--
January	1960	0.80	2.44	3.01	31	M	--
February	1960	0.89	2.73	3.36	29	M	--
March	1960	0.88	2.70	3.33	31	M	--
April	1960	1.10	3.37	4.16	30	M	--
May	1960	1.09	3.34	4.12	31	M	--
June	1960	1.26	3.86	4.76	30	M	--
July	1960	2.15	6.59	8.13	31	M	--
August	1960	2.36	7.25	8.94	31	M	--
September	1960	2.38	7.29	8.99	30	M	--
October	1960	3.14	9.65	11.90	31	M	--
November	1960	2.25	6.92	8.53	30	M	--
December	1960	1.26	3.87	4.77	31	M	--
January	1961	0.00	0.00	0.00	31	M	--
February	1961	0.00	0.00	0.00	28	M	--
March	1961	0.00	0.00	0.00	31	M	--
April	1961	0.00	0.00	0.00	30	M	--
May	1961	2.30	7.05	8.69	31	M	--
June	1961	2.18	6.68	8.23	30	M	--
July	1961	2.08	6.40	7.89	31	M	--
August	1961	2.08	6.37	7.86	31	M	--
September	1961	1.78	5.48	6.75	30	M	--
October	1961	3.51	10.78	13.30	31	M	--
November	1961	4.68	14.35	17.70	30	M	--
December	1961	3.53	10.83	13.36	31	M	--
January	1962	4.64	14.25	17.57	31	M	--
February	1962	4.26	13.06	16.11	28	M	--
March	1962	6.23	19.10	23.56	31	M	--
April	1962	6.35	19.49	24.04	30	M	--
May	1962	6.59	20.22	24.94	31	M	--
June	1962	7.23	22.19	27.37	30	M	--
July	1962	9.27	28.46	35.10	31	M	--
August	1962	9.20	28.24	34.83	31	M	--

WW-5C Monthly Pumping Data

September	1962	6.47	19.85	24.48	30	M	--
October	1962	5.21	15.99	19.72	31	M	--
November	1962	2.61	8.00	9.86	30	M	--
December	1962	4.79	14.70	18.13	31	M	--
January	1963	5.04	15.48	19.09	31	M	--
February	1963	4.28	13.13	16.19	28	M	--
March	1963	5.57	17.10	21.09	31	M	--
April	1963	5.80	17.79	21.94	30	M	--
May	1963	7.59	23.29	28.73	31	M	--
June	1963	7.30	22.41	27.64	30	M	--
July	1963	7.37	22.63	27.91	31	M	--
August	1963	7.71	23.65	29.17	31	M	--
September	1963	5.43	16.66	20.54	30	M	--
October	1963	5.44	16.68	20.58	31	M	--
November	1963	4.34	13.31	16.41	30	M	--
December	1963	5.04	15.46	19.07	31	M	--
January	1964	5.11	15.67	19.33	31	M	--
February	1964	4.81	14.75	18.19	29	M	--
March	1964	5.07	15.57	19.20	31	M	--
April	1964	5.42	16.62	20.50	30	M	--
May	1964	7.06	21.65	26.71	31	M	--
June	1964	6.78	20.80	25.65	30	M	--
July	1964	7.16	21.97	27.09	31	M	--
August	1964	4.97	15.25	18.80	31	M	--
September	1964	0.77	2.36	2.91	30	M	--
October	1964	0.23	0.72	0.88	31	M	--
November	1964	0.43	1.33	1.64	30	M	--
December	1964	0.93	2.84	3.50	31	M	--
January	1965	1.40	4.30	5.30	31	M	--
February	1965	5.66	17.38	21.44	28	M	--
March	1965	7.31	22.42	27.65	31	M	--
April	1965	7.67	23.53	29.03	30	M	--
May	1965	3.62	11.11	13.70	31	M	--
June	1965	2.86	8.79	10.84	30	M	--
July	1965	5.61	17.21	21.23	31	M	--
August	1965	4.54	13.94	17.19	31	M	--
September	1965	4.67	14.32	17.66	26	M	--
November	1965	3.41	10.46	12.90	29	M	--
December	1965	4.74	14.54	17.94	31	M	--
January	1966	5.39	16.53	20.38	31	M	--
February	1966	3.83	11.75	14.50	28	M	--
March	1966	4.01	12.32	15.19	31	M	--
April	1966	5.64	17.29	21.33	30	M	--
May	1966	7.64	23.43	28.90	29	M	--
June	1966	--	--	--	0	I	--
July	1966	--	--	--	0	I	--
August	1966	2.17	6.64	8.19	28	M	--
September	1966	0.58	1.79	2.21	5	M	--
October	1966	5.68	17.43	21.50	31	M	--
November	1966	4.41	13.54	16.70	30	M	--
December	1966	3.89	11.94	14.73	31	M	--
January	1967	5.69	17.46	21.53	31	M	--

WW-5C Monthly Pumping Data

February	1967	3.94	12.09	14.91	28	M	--
March	1967	3.13	9.61	11.86	31	M	--
April	1967	1.74	5.33	6.57	30	M	--
May	1967	0.00	0.00	0.00	31	M	--
June	1967	0.29	0.90	1.11	30	M	--
July	1967	4.80	14.73	18.17	365	R	estimated
August	1967	4.80	14.73	18.17	365	R	estimated
September	1967	4.80	14.73	18.17	365	R	estimated
October	1967	4.80	14.73	18.17	365	R	estimated
November	1967	4.80	14.73	18.17	365	R	estimated
December	1967	4.80	14.73	18.17	365	R	estimated
January	1968	4.96	15.21	18.77	366	R	estimated
February	1968	4.96	15.21	18.77	366	R	estimated
March	1968	4.96	15.21	18.77	366	R	estimated
April	1968	4.96	15.21	18.77	366	R	estimated
May	1968	4.96	15.21	18.77	366	R	estimated
June	1968	4.96	15.21	18.77	366	R	estimated
July	1968	4.96	15.21	18.77	366	R	estimated
August	1968	4.96	15.21	18.77	366	R	estimated
September	1968	4.96	15.21	18.77	366	R	estimated
October	1968	4.96	15.21	18.77	366	R	estimated
November	1968	4.96	15.21	18.77	366	R	estimated
December	1968	4.96	15.21	18.77	366	R	estimated
January	1969	3.33	10.20	12.59	365	R	estimated
February	1969	3.33	10.20	12.59	365	R	estimated
March	1969	3.33	10.20	12.59	365	R	estimated
April	1969	3.33	10.20	12.59	365	R	estimated
May	1969	3.33	10.20	12.59	365	R	estimated
June	1969	3.33	10.20	12.59	365	R	estimated
July	1969	3.33	10.20	12.59	365	R	estimated
August	1969	3.33	10.20	12.59	365	R	estimated
September	1969	3.33	10.20	12.59	365	R	estimated
October	1969	3.33	10.20	12.59	365	R	estimated
November	1969	3.33	10.20	12.59	365	R	estimated
December	1969	3.33	10.20	12.59	365	R	estimated
January	1970	3.43	10.51	12.96	365	R	estimated
February	1970	3.43	10.51	12.96	365	R	estimated
March	1970	3.43	10.51	12.96	365	R	estimated
April	1970	3.43	10.51	12.96	365	R	estimated
May	1970	3.43	10.51	12.96	365	R	estimated
June	1970	3.43	10.51	12.96	365	R	estimated
July	1970	3.43	10.51	12.96	365	R	estimated
August	1970	3.43	10.51	12.96	365	R	estimated
September	1970	3.43	10.51	12.96	365	R	estimated
October	1970	3.43	10.51	12.96	365	R	estimated
November	1970	3.43	10.51	12.96	365	R	estimated
December	1970	3.43	10.51	12.96	365	R	estimated
January	1971	3.68	11.30	13.94	365	R	estimated
February	1971	3.68	11.30	13.94	365	R	estimated
March	1971	3.68	11.30	13.94	365	R	estimated
April	1971	3.68	11.30	13.94	365	R	estimated
May	1971	3.68	11.30	13.94	365	R	estimated

WW-5C Monthly Pumping Data

June	1971	3.68	11.30	13.94	365	R	estimated
July	1971	3.68	11.30	13.94	365	R	estimated
August	1971	3.68	11.30	13.94	365	R	estimated
September	1971	3.68	11.30	13.94	365	R	estimated
October	1971	3.68	11.30	13.94	365	R	estimated
November	1971	3.68	11.30	13.94	365	R	estimated
December	1971	3.68	11.30	13.94	365	R	estimated
January	1972	3.58	11.00	13.56	366	H	estimated
February	1972	3.58	11.00	13.56	366	H	estimated
March	1972	3.58	11.00	13.56	366	H	estimated
April	1972	3.58	11.00	13.56	366	H	estimated
May	1972	3.58	11.00	13.56	366	H	estimated
June	1972	3.58	11.00	13.56	366	H	estimated
July	1972	3.58	11.00	13.56	366	H	estimated
August	1972	3.58	11.00	13.56	366	H	estimated
September	1972	3.58	11.00	13.56	366	H	estimated
October	1972	3.58	11.00	13.56	366	H	estimated
November	1972	3.58	11.00	13.56	366	H	estimated
December	1972	3.58	11.00	13.56	366	H	estimated
January	1973	3.02	9.26	11.42	365	H	estimated
February	1973	3.02	9.26	11.42	365	H	estimated
March	1973	3.02	9.26	11.42	365	H	estimated
April	1973	3.02	9.26	11.42	365	H	estimated
May	1973	3.02	9.26	11.42	365	H	estimated
June	1973	3.02	9.26	11.42	365	H	estimated
July	1973	3.02	9.26	11.42	365	H	estimated
August	1973	3.02	9.26	11.42	365	H	estimated
September	1973	3.02	9.26	11.42	365	H	estimated
October	1973	3.02	9.26	11.42	365	H	estimated
November	1973	3.02	9.26	11.42	365	H	estimated
December	1973	3.02	9.26	11.42	365	H	estimated
January	1974	3.45	10.59	13.06	365	H	estimated
February	1974	3.45	10.59	13.06	365	H	estimated
March	1974	3.45	10.59	13.06	365	H	estimated
April	1974	3.45	10.59	13.06	365	H	estimated
May	1974	3.45	10.59	13.06	365	H	estimated
June	1974	3.45	10.59	13.06	365	H	estimated
July	1974	3.45	10.59	13.06	365	H	estimated
August	1974	3.45	10.59	13.06	365	H	estimated
September	1974	3.45	10.59	13.06	365	H	estimated
October	1974	3.45	10.59	13.06	365	H	estimated
November	1974	3.45	10.59	13.06	365	H	estimated
December	1974	3.45	10.59	13.06	365	H	estimated
January	1975	3.48	10.66	13.15	365	H	estimated
February	1975	3.48	10.66	13.15	365	H	estimated
March	1975	3.48	10.66	13.15	365	H	estimated
April	1975	3.48	10.66	13.15	365	H	estimated
May	1975	3.48	10.66	13.15	365	H	estimated
June	1975	3.48	10.66	13.15	365	H	estimated
July	1975	3.48	10.66	13.15	365	H	estimated
August	1975	3.48	10.66	13.15	365	H	estimated
September	1975	3.48	10.66	13.15	365	H	estimated

WW-5C Monthly Pumping Data

October	1975	3.48	10.66	13.15	365	H	estimated
November	1975	3.48	10.66	13.15	365	H	estimated
December	1975	3.48	10.66	13.15	365	H	estimated
January	1976	3.02	9.26	11.42	366	H	estimated
February	1976	3.02	9.26	11.42	366	H	estimated
March	1976	3.02	9.26	11.42	366	H	estimated
April	1976	3.02	9.26	11.42	366	H	estimated
May	1976	3.02	9.26	11.42	366	H	estimated
June	1976	3.02	9.26	11.42	366	H	estimated
July	1976	3.02	9.26	11.42	366	H	estimated
August	1976	3.02	9.26	11.42	366	H	estimated
September	1976	3.02	9.26	11.42	366	H	estimated
October	1976	3.02	9.26	11.42	366	H	estimated
November	1976	3.02	9.26	11.42	366	H	estimated
December	1976	3.02	9.26	11.42	366	H	estimated
January	1977	2.77	8.49	10.47	365	H	estimated
February	1977	2.77	8.49	10.47	365	H	estimated
March	1977	2.77	8.49	10.47	365	H	estimated
April	1977	2.77	8.49	10.47	365	H	estimated
May	1977	2.77	8.49	10.47	365	H	estimated
June	1977	2.77	8.49	10.47	365	H	estimated
July	1977	2.77	8.49	10.47	365	H	estimated
August	1977	2.77	8.49	10.47	365	H	estimated
September	1977	2.77	8.49	10.47	365	H	estimated
October	1977	2.77	8.49	10.47	365	H	estimated
November	1977	2.77	8.49	10.47	365	H	estimated
December	1977	2.77	8.49	10.47	365	H	estimated
January	1978	2.96	9.08	11.20	365	H	estimated
February	1978	2.96	9.08	11.20	365	H	estimated
March	1978	2.96	9.08	11.20	365	H	estimated
April	1978	2.96	9.08	11.20	365	H	estimated
May	1978	2.96	9.08	11.20	365	H	estimated
June	1978	2.96	9.08	11.20	365	H	estimated
July	1978	2.96	9.08	11.20	365	H	estimated
August	1978	2.96	9.08	11.20	365	H	estimated
September	1978	2.96	9.08	11.20	365	H	estimated
October	1978	2.96	9.08	11.20	365	H	estimated
November	1978	2.96	9.08	11.20	365	H	estimated
December	1978	2.96	9.08	11.20	365	H	estimated
January	1979	2.61	8.00	9.87	365	H	estimated
February	1979	2.61	8.00	9.87	365	H	estimated
March	1979	2.61	8.00	9.87	365	H	estimated
April	1979	2.61	8.00	9.87	365	H	estimated
May	1979	2.61	8.00	9.87	365	H	estimated
June	1979	2.61	8.00	9.87	365	H	estimated
July	1979	2.61	8.00	9.87	365	H	estimated
August	1979	2.61	8.00	9.87	365	H	estimated
September	1979	2.61	8.00	9.87	365	H	estimated
October	1979	2.61	8.00	9.87	365	H	estimated
November	1979	2.61	8.00	9.87	365	H	estimated
December	1979	2.61	8.00	9.87	365	H	estimated
January	1980	3.10	9.51	11.73	366	H	estimated

WW-5C Monthly Pumping Data

February	1980	3.10	9.51	11.73	366	H	estimated
March	1980	3.10	9.51	11.73	366	H	estimated
April	1980	3.10	9.51	11.73	366	H	estimated
May	1980	3.10	9.51	11.73	366	H	estimated
June	1980	3.10	9.51	11.73	366	H	estimated
July	1980	3.10	9.51	11.73	366	H	estimated
August	1980	3.10	9.51	11.73	366	H	estimated
September	1980	3.10	9.51	11.73	366	H	estimated
October	1980	3.10	9.51	11.73	366	H	estimated
November	1980	3.10	9.51	11.73	366	H	estimated
December	1980	3.10	9.51	11.73	366	H	estimated
January	1981	3.56	10.92	13.47	365	H	estimated
February	1981	3.56	10.92	13.47	365	H	estimated
March	1981	3.56	10.92	13.47	365	H	estimated
April	1981	3.56	10.92	13.47	365	H	estimated
May	1981	3.56	10.92	13.47	365	H	estimated
June	1981	3.56	10.92	13.47	365	H	estimated
July	1981	3.56	10.92	13.47	365	H	estimated
August	1981	3.56	10.92	13.47	365	H	estimated
September	1981	3.56	10.92	13.47	365	H	estimated
October	1981	3.56	10.92	13.47	365	H	estimated
November	1981	3.56	10.92	13.47	365	H	estimated
December	1981	3.56	10.92	13.47	365	H	estimated
January	1982	4.10	12.58	15.52	365	H	estimated
February	1982	4.10	12.58	15.52	365	H	estimated
March	1982	4.10	12.58	15.52	365	H	estimated
April	1982	4.10	12.58	15.52	365	H	estimated
May	1982	4.10	12.58	15.52	365	H	estimated
June	1982	4.10	12.58	15.52	365	H	estimated
July	1982	4.10	12.58	15.52	365	H	estimated
August	1982	4.10	12.58	15.52	365	H	estimated
September	1982	4.10	12.58	15.52	365	H	estimated
October	1982	4.10	12.58	15.52	365	H	estimated
November	1982	4.10	12.58	15.52	365	H	estimated
December	1982	4.10	12.58	15.52	365	H	estimated
January	1983	4.51	13.82	17.05	31	M	--
February	1983	3.63	11.15	13.75	28	M	--
March	1983	4.82	14.78	18.22	31	M	--
April	1983	3.37	10.33	12.74	30	M	--
May	1983	5.74	17.62	21.73	31	M	--
June	1983	4.21	12.93	15.95	30	M	--
July	1983	3.97	12.19	15.03	31	M	--
August	1983	3.25	9.98	12.31	31	M	--
September	1983	2.35	7.20	8.88	30	M	--
October	1983	2.50	7.67	9.47	31	M	--
November	1983	1.52	4.66	5.74	30	M	--
December	1983	2.23	6.85	8.44	31	M	--
January	1984	2.62	8.02	9.90	31	M	--
February	1984	6.89	21.15	26.08	29	M	--
March	1984	5.94	18.23	22.48	31	M	--
April	1984	4.65	14.26	17.59	30	M	--
May	1984	3.54	10.85	13.38	31	M	--

WW-5C Monthly Pumping Data

June	1984	3.88	11.90	14.67	30	M	--
July	1984	6.67	20.48	25.26	31	M	--
August	1984	5.48	16.83	20.75	31	M	--
September	1984	4.79	14.70	18.13	30	M	--
October	1984	4.42	13.56	16.72	31	M	--
November	1984	4.69	14.39	17.75	30	M	--
December	1984	5.12	15.72	19.39	31	E	--
January	1985	7.42	22.78	28.09	31	E	--
February	1985	6.42	19.70	24.30	28	M	--
March	1985	7.00	21.47	26.49	31	M	--
April	1985	5.94	18.24	22.49	30	M	--
May	1985	6.65	20.41	25.17	31	M	--
June	1985	6.15	18.88	23.29	30	M	--
July	1985	5.04	15.47	19.08	31	M	--
August	1985	2.42	7.44	9.18	31	M	--
September	1985	0.07	0.20	0.24	30	M	--
October	1985	0.00	0.00	0.00	31	M	--
November	1985	0.00	0.00	0.00	30	M	--
December	1985	0.00	0.00	0.00	31	E	--
January	1986	0.59	1.80	2.22	31	M	--
February	1986	4.70	14.42	17.79	28	M	--
March	1986	6.69	20.53	25.32	31	M	--
April	1986	5.62	17.24	21.27	30	M	--
May	1986	5.61	17.22	21.24	31	M	--
June	1986	4.56	13.98	17.25	30	M	--
July	1986	6.80	20.88	25.75	31	M	--
August	1986	8.24	25.30	31.20	31	M	--
September	1986	6.02	18.46	22.77	30	M	--
October	1986	5.70	17.48	21.56	31	M	--
November	1986	4.91	15.05	18.57	30	M	--
December	1986	4.53	13.91	17.15	31	M	--
January	1987	4.30	13.18	16.26	31	M	--
February	1987	4.13	12.68	15.64	28	M	--
March	1987	4.93	15.12	18.65	31	M	--
April	1987	4.42	13.57	16.74	30	M	--
May	1987	4.74	14.53	17.92	31	M	--
June	1987	4.22	12.94	15.96	30	M	--
July	1987	3.91	12.01	14.81	31	M	--
August	1987	5.44	16.69	20.58	31	M	--
September	1987	5.98	18.34	22.62	30	M	--
October	1987	2.30	7.05	8.69	31	M	--
November	1987	1.67	5.12	6.31	30	M	--
December	1987	4.26	13.07	16.12	31	M	--
January	1988	4.76	14.61	18.01	31	M	--
February	1988	5.03	15.45	19.05	29	M	--
March	1988	8.81	27.05	33.36	31	M	--
April	1988	6.30	19.33	23.84	30	M	--
May	1988	6.48	19.90	24.54	31	M	--
June	1988	4.36	13.37	16.49	30	M	--
July	1988	7.08	21.72	26.79	31	M	--
August	1988	5.54	17.01	20.97	31	M	--
September	1988	4.98	15.29	18.86	30	M	--

WW-5C Monthly Pumping Data

October	1988	5.11	15.68	19.34	31	M	--
November	1988	4.19	12.85	15.85	30	M	--
December	1988	5.14	15.77	19.45	31	M	--
January	1989	5.79	17.77	21.92	31	M	--
February	1989	8.23	25.26	31.15	28	M	--
March	1989	3.55	10.88	13.42	31	M	--
April	1989	1.77	5.42	6.68	30	M	--
May	1989	2.13	6.53	8.05	31	M	--
June	1989	2.14	6.56	8.09	30	M	--
July	1989	2.60	7.98	9.84	31	M	--
August	1989	2.69	8.25	10.18	31	M	--
September	1989	2.71	8.33	10.27	30	M	--
October	1989	0.95	2.90	3.58	31	M	--
November	1989	1.73	5.31	6.55	30	M	--
December	1989	1.13	3.45	4.26	31	M	--
January	1990	1.67	5.13	6.33	31	M	--
February	1990	3.46	10.60	13.08	28	M	--
March	1990	5.14	15.78	19.46	31	M	--
April	1990	4.41	13.52	16.67	30	M	--
May	1990	4.08	12.51	15.43	31	M	--
June	1990	4.65	14.27	17.61	30	M	--
July	1990	4.42	13.57	16.74	31	M	--
August	1990	2.22	6.82	8.42	31	M	--
September	1990	2.58	7.92	9.77	30	M	--
October	1990	2.87	8.80	10.85	31	M	--
November	1990	1.09	3.35	4.13	30	M	--
December	1990	1.80	5.53	6.82	31	M	--
January	1991	1.18	3.63	4.48	31	M	--
February	1991	1.87	5.74	7.07	28	M	--
March	1991	0.90	2.77	3.42	31	M	--
April	1991	1.87	5.75	7.09	30	M	--
May	1991	3.15	9.65	11.91	31	M	--
June	1991	1.62	4.98	6.15	30	M	--
July	1991	2.23	6.85	8.45	31	M	--
August	1991	2.70	8.29	10.22	31	M	--
September	1991	2.10	6.43	7.93	30	M	--
October	1991	2.87	8.81	10.87	31	M	--
November	1991	3.01	9.24	11.39	30	M	--
December	1991	5.27	16.17	19.95	31	M	--
January	1992	5.70	17.49	21.57	31	M	--
February	1992	4.48	13.75	16.96	29	M	--
March	1992	5.34	16.40	20.22	31	M	--
April	1992	6.60	20.26	24.99	30	M	--
May	1992	3.64	11.18	13.79	31	M	--
June	1992	3.60	11.05	13.63	30	M	--
July	1992	6.95	21.34	26.32	31	M	--
August	1992	6.87	21.09	26.01	31	M	--
September	1992	6.85	21.03	25.94	30	M	--
October	1992	4.91	15.06	18.57	31	M	--
November	1992	2.39	7.32	9.03	30	M	--
December	1992	3.80	11.67	14.39	31	M	--
January	1993	4.05	12.43	15.33	31	M	--

WW-5C Monthly Pumping Data

February	1993	8.67	26.61	32.82	28	M	--
March	1993	9.66	29.66	36.58	31	M	--
April	1993	9.26	28.41	35.04	30	M	--
May	1993	5.67	17.39	21.45	31	M	--
June	1993	7.28	22.34	27.56	30	M	--
July	1993	0.00	0.00	0.00	31	M	--
August	1993	0.69	2.12	2.62	31	M	--
September	1993	5.92	18.16	22.40	30	M	--
October	1993	4.54	13.93	17.18	31	M	--
November	1993	5.58	17.11	21.11	30	M	--
December	1993	1.84	5.64	6.96	31	M	--
January	1994	3.02	9.25	11.41	31	M	--
February	1994	3.93	12.05	14.87	28	M	--
March	1994	2.45	7.52	9.28	31	M	--
April	1994	2.03	6.22	7.67	30	M	--
May	1994	2.55	7.81	9.64	31	M	--
June	1994	2.86	8.78	10.82	30	M	--
July	1994	5.25	16.11	19.87	31	M	--
August	1994	8.09	24.83	30.63	31	M	--
September	1994	6.37	19.55	24.11	30	M	--
October	1994	3.51	10.78	13.29	31	M	--
November	1994	3.59	11.00	13.57	30	M	--
December	1994	3.18	9.75	12.02	31	M	--
January	1995	2.34	7.18	8.85	31	M	--
February	1995	2.69	8.27	10.19	28	M	--
March	1995	2.55	7.83	9.65	31	M	--
April	1995	3.21	9.86	12.16	30	M	--
May	1995	4.21	12.91	15.93	31	M	--
June	1995	5.34	16.39	20.21	30	M	--
July	1995	5.60	17.20	21.21	31	M	--
August	1995	3.76	11.55	14.24	31	M	--
September	1995	3.51	10.77	13.28	30	M	--
October	1995	4.14	12.69	15.65	31	M	--
November	1995	3.27	10.02	12.36	30	M	--
December	1995	3.68	11.28	13.91	31	M	--
January	1996	3.61	11.08	13.67	31	M	--
February	1996	3.87	11.87	14.64	29	M	--
March	1996	4.12	12.63	15.58	31	M	--
April	1996	3.16	9.69	11.95	30	M	--
May	1996	2.01	6.17	7.61	31	M	--
June	1996	2.95	9.04	11.15	30	M	--
July	1996	3.04	9.33	11.50	31	M	--
August	1996	2.42	7.44	9.18	31	M	--
September	1996	2.31	7.08	8.73	30	M	--
October	1996	2.35	7.22	8.91	31	M	--
November	1996	2.47	7.57	9.34	30	M	--
December	1996	2.73	8.38	10.34	31	M	--
January	1997	2.42	7.42	9.16	31	M	--
February	1997	2.73	8.39	10.35	28	M	--
March	1997	3.04	9.32	11.49	31	M	--
April	1997	2.56	7.86	9.70	30	M	--
May	1997	2.29	7.04	8.68	31	M	--

WW-5C Monthly Pumping Data

June	1997	2.75	8.44	10.41	30	M	--
July	1997	2.71	8.33	10.27	31	M	--
August	1997	2.61	8.00	9.86	31	M	--
September	1997	2.35	7.20	8.88	30	M	--
October	1997	2.43	7.44	9.18	31	M	--
November	1997	1.12	3.43	4.24	30	M	--
December	1997	0.21	0.63	0.78	31	M	--
January	1998	2.91	8.94	11.02	31	M	--
February	1998	2.93	9.00	11.11	28	M	--
March	1998	3.47	10.64	13.12	31	M	--
April	1998	2.63	8.08	9.96	30	M	--
May	1998	0.71	2.18	2.69	31	M	--
June	1998	0.96	2.95	3.64	30	M	--
July	1998	4.12	12.64	15.59	31	M	--
August	1998	3.26	10.02	12.35	31	M	--
September	1998	2.92	8.97	11.06	30	M	--
October	1998	3.04	9.34	11.52	31	M	--
November	1998	2.86	8.76	10.81	30	M	--
December	1998	2.59	7.96	9.82	31	M	--
January	1999	3.15	9.65	11.90	31	M	--
February	1999	2.80	8.60	10.60	28	M	--
March	1999	3.08	9.46	11.67	31	M	--
April	1999	2.52	7.73	9.53	30	M	--
May	1999	2.85	8.73	10.77	31	M	--
June	1999	2.80	8.60	10.60	30	M	--
July	1999	3.09	9.47	11.68	31	M	--
August	1999	2.92	8.97	11.07	31	M	--
September	1999	2.60	7.98	9.85	30	M	--
October	1999	2.76	8.47	10.44	31	M	--
November	1999	2.99	9.19	11.33	30	M	--
December	1999	3.33	10.21	12.59	31	M	--
January	2000	3.41	10.46	12.90	31	M	--
February	2000	3.05	9.35	11.53	29	M	--
March	2000	3.30	10.12	12.49	31	M	--
April	2000	3.25	9.96	12.28	30	M	--
May	2000	3.50	10.74	13.24	31	M	--
June	2000	3.19	9.78	12.07	30	M	--
July	2000	2.88	8.82	10.88	31	M	--
August	2000	2.71	8.33	10.27	31	M	--
September	2000	2.92	8.95	11.04	30	M	--
October	2000	2.57	7.90	9.74	31	M	--
November	2000	2.42	7.42	9.15	30	M	--
December	2000	2.62	8.03	9.90	31	M	--
January	2001	2.74	8.40	10.37	31	M	--
February	2001	2.44	7.50	9.25	28	M	--
March	2001	2.61	8.02	9.89	31	M	--
April	2001	2.14	6.56	8.09	30	M	--
May	2001	1.64	5.04	6.22	31	M	--
June	2001	1.34	4.13	5.09	30	M	--
July	2001	0.97	2.96	3.65	31	M	--
August	2001	1.74	5.35	6.60	31	M	--
September	2001	1.46	4.47	5.51	30	M	--

WW-5C Monthly Pumping Data

October	2001	1.43	4.39	5.42	31	M	--
November	2001	1.83	5.62	6.94	30	M	--
December	2001	1.22	3.75	4.62	31	M	--
January	2002	1.81	5.56	6.86	31	M	--
February	2002	0.74	2.28	2.81	28	M	--
March	2002	1.59	4.89	6.03	31	M	--
April	2002	1.63	5.00	6.17	30	M	--
May	2002	1.77	5.44	6.71	31	M	--
June	2002	2.37	7.27	8.97	30	M	--
July	2002	2.55	7.83	9.66	31	M	--
August	2002	1.98	6.07	7.49	31	M	--
September	2002	1.98	6.08	7.50	30	M	--
October	2002	1.70	5.22	6.44	31	M	--
November	2002	2.30	7.07	8.71	30	M	--
December	2002	2.56	7.87	9.71	31	M	--
January	2003	2.02	6.19	7.64	31	M	--
February	2003	1.68	5.16	6.37	28	M	--
March	2003	2.21	6.77	8.35	31	M	--
April	2003	1.77	5.42	6.68	30	M	--
May	2003	1.93	5.94	7.32	31	M	--
June	2003	1.12	3.44	4.24	30	M	--
July	2003	1.06	3.26	4.02	31	M	--
August	2003	1.53	4.69	5.78	31	M	--
September	2003	1.65	5.07	6.25	30	M	--
October	2003	1.49	4.58	5.65	31	M	--
November	2003	1.67	5.13	6.33	30	M	--
December	2003	1.66	5.08	6.26	31	M	--

<sup>a</sup>Source: E = Taken from Bechtel or REEC Co water production reports and includes estimated values.

H = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Moreo and others, 2003, WRIR 03-4245, Estimated Ground-Water Withdrawals from the Death Valley Regional Flow System, Nevada and California, 1913-98].

I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.

M = Taken from Bechtel or REEC Co water production reports.

R = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

Z = Insufficient data to determine monthly value. Annual value listed in annual data set as estimated in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

<sup>b</sup> estimated indicates monthly value was estimated from yearly total

WW-C1 Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>	Comment <sup>b</sup>
June	1962	3.78	11.61	14.32	30	M	--
July	1962	5.35	16.42	20.26	31	M	--
August	1962	2.34	7.17	8.84	31	M	--
September	1962	0.00	0.00	0.00	30	M	--
October	1962	1.31	4.03	4.97	31	M	--
November	1962	2.50	7.67	9.46	30	M	--
December	1962	0.90	2.75	3.39	31	M	--
January	1963	0.21	0.64	0.79	31	M	--
February	1963	2.45	7.53	9.28	28	M	--
March	1963	1.37	4.21	5.19	31	M	--
April	1963	0.00	0.00	0.00	30	M	--
May	1963	0.33	1.00	1.24	31	M	--
June	1963	6.04	18.52	22.84	30	M	--
July	1963	3.64	11.18	13.78	31	M	--
August	1963	3.28	10.06	12.41	31	M	--
September	1963	5.65	17.35	21.40	30	M	--
October	1963	2.67	8.20	10.11	31	M	--
November	1963	2.95	9.06	11.17	30	M	--
December	1963	5.36	16.45	20.29	31	M	--
January	1964	2.74	8.41	10.37	31	M	--
February	1964	0.00	0.00	0.00	29	M	--
March	1964	0.00	0.00	0.00	31	M	--
April	1964	8.18	25.10	30.96	30	M	--
May	1964	1.45	4.45	5.49	31	M	--
June	1964	7.58	23.25	28.68	30	M	--
July	1964	11.66	35.77	44.12	31	M	--
August	1964	9.93	30.48	37.59	31	M	--
September	1964	10.42	31.98	39.44	30	M	--
October	1964	8.96	27.49	33.90	31	M	--
November	1964	2.05	6.29	7.75	30	M	--
December	1964	6.91	21.22	26.17	31	M	--
January	1965	5.87	18.00	22.21	31	M	--
February	1965	5.64	17.31	21.35	28	M	--
March	1965	8.54	26.21	32.33	31	M	--
April	1965	3.32	10.20	12.58	30	M	--
May	1965	2.56	7.86	9.69	31	M	--
June	1965	1.62	4.98	6.14	30	M	--
July	1965	3.73	11.44	14.11	31	M	--
August	1965	4.73	14.51	17.89	31	M	--
September	1965	2.65	8.14	10.04	26	M	--
October	1965	--	--	--	0	I	--
November	1965	1.88	5.78	7.13	29	M	--
December	1965	1.79	5.49	6.77	31	M	--
January	1966	1.53	4.69	5.79	31	M	--
February	1966	2.68	8.23	10.15	28	M	--
March	1966	3.60	11.05	13.63	31	M	--
April	1966	6.80	20.88	25.75	30	M	--
May	1966	7.84	24.05	29.67	29	M	--
June	1966	--	--	--	0	I	--

WW-C1 Monthly Pumping Data

July	1966	--	--	--	0	I	--
August	1966	7.44	22.85	28.18	28	M	--
September	1966	0.46	1.42	1.75	5	M	--
October	1966	10.28	31.55	38.91	31	M	--
November	1966	6.32	19.39	23.91	30	M	--
December	1966	3.96	12.14	14.98	31	M	--
January	1967	3.33	10.23	12.61	31	M	--
February	1967	3.48	10.69	13.18	28	M	--
March	1967	6.69	20.54	25.33	31	M	--
April	1967	3.91	12.01	14.81	30	M	--
May	1967	2.77	8.49	10.48	31	M	--
June	1967	1.23	3.77	4.65	30	M	--
July	1967	2.10	6.44	7.94	365	R	estimated
August	1967	2.10	6.44	7.94	365	R	estimated
September	1967	2.10	6.44	7.94	365	R	estimated
October	1967	2.10	6.44	7.94	365	R	estimated
November	1967	2.10	6.44	7.94	365	R	estimated
December	1967	2.10	6.44	7.94	365	R	estimated
January	1968	2.24	6.88	8.48	366	R	estimated
February	1968	2.24	6.88	8.48	366	R	estimated
March	1968	2.24	6.88	8.48	366	R	estimated
April	1968	2.24	6.88	8.48	366	R	estimated
May	1968	2.24	6.88	8.48	366	R	estimated
June	1968	2.24	6.88	8.48	366	R	estimated
July	1968	2.24	6.88	8.48	366	R	estimated
August	1968	2.24	6.88	8.48	366	R	estimated
September	1968	2.24	6.88	8.48	366	R	estimated
October	1968	2.24	6.88	8.48	366	R	estimated
November	1968	2.24	6.88	8.48	366	R	estimated
December	1968	2.24	6.88	8.48	366	R	estimated
January	1969	3.03	9.31	11.48	365	R	estimated
February	1969	3.03	9.31	11.48	365	R	estimated
March	1969	3.03	9.31	11.48	365	R	estimated
April	1969	3.03	9.31	11.48	365	R	estimated
May	1969	3.03	9.31	11.48	365	R	estimated
June	1969	3.03	9.31	11.48	365	R	estimated
July	1969	3.03	9.31	11.48	365	R	estimated
August	1969	3.03	9.31	11.48	365	R	estimated
September	1969	3.03	9.31	11.48	365	R	estimated
October	1969	3.03	9.31	11.48	365	R	estimated
November	1969	3.03	9.31	11.48	365	R	estimated
December	1969	3.03	9.31	11.48	365	R	estimated
January	1970	1.53	4.68	5.77	365	R	estimated
February	1970	1.53	4.68	5.77	365	R	estimated
March	1970	1.53	4.68	5.77	365	R	estimated
April	1970	1.53	4.68	5.77	365	R	estimated
May	1970	1.53	4.68	5.77	365	R	estimated
June	1970	1.53	4.68	5.77	365	R	estimated
July	1970	1.53	4.68	5.77	365	R	estimated
August	1970	1.53	4.68	5.77	365	R	estimated
September	1970	1.53	4.68	5.77	365	R	estimated
October	1970	1.53	4.68	5.77	365	R	estimated

WW-C1 Monthly Pumping Data

November	1970	1.53	4.68	5.77	365	R	estimated
December	1970	1.53	4.68	5.77	365	R	estimated
January	1971	1.70	5.22	6.43	365	R	estimated
February	1971	1.70	5.22	6.43	365	R	estimated
March	1971	1.70	5.22	6.43	365	R	estimated
April	1971	1.70	5.22	6.43	365	R	estimated
May	1971	1.70	5.22	6.43	365	R	estimated
June	1971	1.70	5.22	6.43	365	R	estimated
July	1971	1.70	5.22	6.43	365	R	estimated
August	1971	1.70	5.22	6.43	365	R	estimated
September	1971	1.70	5.22	6.43	365	R	estimated
October	1971	1.70	5.22	6.43	365	R	estimated
November	1971	1.70	5.22	6.43	365	R	estimated
December	1971	1.70	5.22	6.43	365	R	estimated
January	1972	1.66	5.09	6.28	366	H	estimated
February	1972	1.66	5.09	6.28	366	H	estimated
March	1972	1.66	5.09	6.28	366	H	estimated
April	1972	1.66	5.09	6.28	366	H	estimated
May	1972	1.66	5.09	6.28	366	H	estimated
June	1972	1.66	5.09	6.28	366	H	estimated
July	1972	1.66	5.09	6.28	366	H	estimated
August	1972	1.66	5.09	6.28	366	H	estimated
September	1972	1.66	5.09	6.28	366	H	estimated
October	1972	1.66	5.09	6.28	366	H	estimated
November	1972	1.66	5.09	6.28	366	H	estimated
December	1972	1.66	5.09	6.28	366	H	estimated
January	1973	1.44	4.42	5.46	365	H	estimated
February	1973	1.44	4.42	5.46	365	H	estimated
March	1973	1.44	4.42	5.46	365	H	estimated
April	1973	1.44	4.42	5.46	365	H	estimated
May	1973	1.44	4.42	5.46	365	H	estimated
June	1973	1.44	4.42	5.46	365	H	estimated
July	1973	1.44	4.42	5.46	365	H	estimated
August	1973	1.44	4.42	5.46	365	H	estimated
September	1973	1.44	4.42	5.46	365	H	estimated
October	1973	1.44	4.42	5.46	365	H	estimated
November	1973	1.44	4.42	5.46	365	H	estimated
December	1973	1.44	4.42	5.46	365	H	estimated
January	1974	1.68	5.17	6.37	365	H	estimated
February	1974	1.68	5.17	6.37	365	H	estimated
March	1974	1.68	5.17	6.37	365	H	estimated
April	1974	1.68	5.17	6.37	365	H	estimated
May	1974	1.68	5.17	6.37	365	H	estimated
June	1974	1.68	5.17	6.37	365	H	estimated
July	1974	1.68	5.17	6.37	365	H	estimated
August	1974	1.68	5.17	6.37	365	H	estimated
September	1974	1.68	5.17	6.37	365	H	estimated
October	1974	1.68	5.17	6.37	365	H	estimated
November	1974	1.68	5.17	6.37	365	H	estimated
December	1974	1.68	5.17	6.37	365	H	estimated
January	1975	1.77	5.42	6.69	365	H	estimated
February	1975	1.77	5.42	6.69	365	H	estimated

WW-C1 Monthly Pumping Data

March	1975	1.77	5.42	6.69	365	H	estimated
April	1975	1.77	5.42	6.69	365	H	estimated
May	1975	1.77	5.42	6.69	365	H	estimated
June	1975	1.77	5.42	6.69	365	H	estimated
July	1975	1.77	5.42	6.69	365	H	estimated
August	1975	1.77	5.42	6.69	365	H	estimated
September	1975	1.77	5.42	6.69	365	H	estimated
October	1975	1.77	5.42	6.69	365	H	estimated
November	1975	1.77	5.42	6.69	365	H	estimated
December	1975	1.77	5.42	6.69	365	H	estimated
January	1976	1.58	4.83	5.96	366	H	estimated
February	1976	1.58	4.83	5.96	366	H	estimated
March	1976	1.58	4.83	5.96	366	H	estimated
April	1976	1.58	4.83	5.96	366	H	estimated
May	1976	1.58	4.83	5.96	366	H	estimated
June	1976	1.58	4.83	5.96	366	H	estimated
July	1976	1.58	4.83	5.96	366	H	estimated
August	1976	1.58	4.83	5.96	366	H	estimated
September	1976	1.58	4.83	5.96	366	H	estimated
October	1976	1.58	4.83	5.96	366	H	estimated
November	1976	1.58	4.83	5.96	366	H	estimated
December	1976	1.58	4.83	5.96	366	H	estimated
January	1977	1.49	4.58	5.65	365	H	estimated
February	1977	1.49	4.58	5.65	365	H	estimated
March	1977	1.49	4.58	5.65	365	H	estimated
April	1977	1.49	4.58	5.65	365	H	estimated
May	1977	1.49	4.58	5.65	365	H	estimated
June	1977	1.49	4.58	5.65	365	H	estimated
July	1977	1.49	4.58	5.65	365	H	estimated
August	1977	1.49	4.58	5.65	365	H	estimated
September	1977	1.49	4.58	5.65	365	H	estimated
October	1977	1.49	4.58	5.65	365	H	estimated
November	1977	1.49	4.58	5.65	365	H	estimated
December	1977	1.49	4.58	5.65	365	H	estimated
January	1978	1.63	5.01	6.18	365	H	estimated
February	1978	1.63	5.01	6.18	365	H	estimated
March	1978	1.63	5.01	6.18	365	H	estimated
April	1978	1.63	5.01	6.18	365	H	estimated
May	1978	1.63	5.01	6.18	365	H	estimated
June	1978	1.63	5.01	6.18	365	H	estimated
July	1978	1.63	5.01	6.18	365	H	estimated
August	1978	1.63	5.01	6.18	365	H	estimated
September	1978	1.63	5.01	6.18	365	H	estimated
October	1978	1.63	5.01	6.18	365	H	estimated
November	1978	1.63	5.01	6.18	365	H	estimated
December	1978	1.63	5.01	6.18	365	H	estimated
January	1979	1.49	4.58	5.65	365	H	estimated
February	1979	1.49	4.58	5.65	365	H	estimated
March	1979	1.49	4.58	5.65	365	H	estimated
April	1979	1.49	4.58	5.65	365	H	estimated
May	1979	1.49	4.58	5.65	365	H	estimated
June	1979	1.49	4.58	5.65	365	H	estimated

WW-C1 Monthly Pumping Data

July	1979	1.49	4.58	5.65	365	H	estimated
August	1979	1.49	4.58	5.65	365	H	estimated
September	1979	1.49	4.58	5.65	365	H	estimated
October	1979	1.49	4.58	5.65	365	H	estimated
November	1979	1.49	4.58	5.65	365	H	estimated
December	1979	1.49	4.58	5.65	365	H	estimated
January	1980	1.82	5.57	6.88	366	H	estimated
February	1980	1.82	5.57	6.88	366	H	estimated
March	1980	1.82	5.57	6.88	366	H	estimated
April	1980	1.82	5.57	6.88	366	H	estimated
May	1980	1.82	5.57	6.88	366	H	estimated
June	1980	1.82	5.57	6.88	366	H	estimated
July	1980	1.82	5.57	6.88	366	H	estimated
August	1980	1.82	5.57	6.88	366	H	estimated
September	1980	1.82	5.57	6.88	366	H	estimated
October	1980	1.82	5.57	6.88	366	H	estimated
November	1980	1.82	5.57	6.88	366	H	estimated
December	1980	1.82	5.57	6.88	366	H	estimated
January	1981	2.14	6.57	8.11	365	H	estimated
February	1981	2.14	6.57	8.11	365	H	estimated
March	1981	2.14	6.57	8.11	365	H	estimated
April	1981	2.14	6.57	8.11	365	H	estimated
May	1981	2.14	6.57	8.11	365	H	estimated
June	1981	2.14	6.57	8.11	365	H	estimated
July	1981	2.14	6.57	8.11	365	H	estimated
August	1981	2.14	6.57	8.11	365	H	estimated
September	1981	2.14	6.57	8.11	365	H	estimated
October	1981	2.14	6.57	8.11	365	H	estimated
November	1981	2.14	6.57	8.11	365	H	estimated
December	1981	2.14	6.57	8.11	365	H	estimated
January	1982	2.55	7.82	9.65	365	H	estimated
February	1982	2.55	7.82	9.65	365	H	estimated
March	1982	2.55	7.82	9.65	365	H	estimated
April	1982	2.55	7.82	9.65	365	H	estimated
May	1982	2.55	7.82	9.65	365	H	estimated
June	1982	2.55	7.82	9.65	365	H	estimated
July	1982	2.55	7.82	9.65	365	H	estimated
August	1982	2.55	7.82	9.65	365	H	estimated
September	1982	2.55	7.82	9.65	365	H	estimated
October	1982	2.55	7.82	9.65	365	H	estimated
November	1982	2.55	7.82	9.65	365	H	estimated
December	1982	2.55	7.82	9.65	365	H	estimated
January	1983	4.36	13.36	16.48	31	M	--
February	1983	2.89	8.87	10.94	28	M	--
March	1983	3.71	11.40	14.05	31	M	--
April	1983	4.60	14.10	17.39	30	M	--
May	1983	3.64	11.17	13.77	31	M	--
June	1983	3.19	9.78	12.06	30	M	--
July	1983	5.14	15.77	19.45	31	M	--
August	1983	3.00	9.21	11.36	31	M	--
September	1983	2.50	7.68	9.47	30	M	--
October	1983	2.36	7.23	8.92	31	M	--

WW-C1 Monthly Pumping Data

November	1983	0.76	2.34	2.89	30	M	--
December	1983	1.49	4.58	5.65	31	M	--
January	1984	1.90	5.84	7.20	31	M	--
February	1984	2.94	9.02	11.13	29	M	--
March	1984	2.71	8.30	10.24	31	M	--
April	1984	1.41	4.33	5.34	30	M	--
May	1984	3.66	11.24	13.86	31	M	--
June	1984	2.81	8.62	10.63	30	M	--
July	1984	1.59	4.86	6.00	31	M	--
August	1984	1.12	3.44	4.24	31	M	--
September	1984	1.93	5.92	7.30	30	M	--
October	1984	1.60	4.90	6.04	31	M	--
November	1984	0.50	1.54	1.90	30	M	--
December	1984	1.15	3.53	4.35	31	E	--
January	1985	1.57	4.82	5.94	31	E	--
February	1985	0.90	2.75	3.39	28	M	--
March	1985	2.21	6.78	8.36	31	M	--
April	1985	2.72	8.35	10.30	30	M	--
May	1985	3.44	10.56	13.03	31	M	--
June	1985	3.68	11.28	13.91	30	M	--
July	1985	3.94	12.10	14.92	31	M	--
August	1985	3.19	9.78	12.06	31	M	--
September	1985	2.10	6.45	7.96	30	M	--
October	1985	1.91	5.88	7.25	31	M	--
November	1985	1.52	4.67	5.75	30	M	--
December	1985	1.77	5.44	6.71	31	E	--
January	1986	2.09	6.42	7.92	31	M	--
February	1986	1.80	5.52	6.80	28	M	--
March	1986	2.94	9.01	11.11	31	M	--
April	1986	2.76	8.47	10.44	30	M	--
May	1986	2.83	8.69	10.72	31	M	--
June	1986	2.67	8.20	10.11	30	M	--
July	1986	2.89	8.87	10.94	31	M	--
August	1986	3.16	9.69	11.95	31	M	--
September	1986	2.53	7.76	9.57	30	M	--
October	1986	2.27	6.97	8.60	31	M	--
November	1986	2.02	6.18	7.62	30	M	--
December	1986	2.10	6.45	7.96	31	M	--
January	1987	2.22	6.82	8.41	31	M	--
February	1987	1.72	5.27	6.50	28	M	--
March	1987	1.65	5.05	6.23	31	M	--
April	1987	1.73	5.32	6.56	30	M	--
May	1987	1.81	5.55	6.85	31	M	--
June	1987	1.87	5.74	7.08	30	M	--
July	1987	2.08	6.39	7.88	31	M	--
August	1987	2.37	7.28	8.98	31	M	--
September	1987	2.20	6.73	8.31	30	M	--
October	1987	1.65	5.07	6.25	31	M	--
November	1987	1.25	3.85	4.74	30	M	--
December	1987	1.78	5.47	6.75	31	M	--
January	1988	2.13	6.54	8.06	31	M	--
February	1988	2.01	6.15	7.59	29	M	--

WW-C1 Monthly Pumping Data

March	1988	2.14	6.58	8.12	31	M	--
April	1988	2.00	6.14	7.57	30	M	--
May	1988	2.49	7.63	9.42	31	M	--
June	1988	2.32	7.11	8.77	30	M	--
July	1988	3.15	9.66	11.91	31	M	--
August	1988	1.74	5.32	6.57	31	M	--
September	1988	0.99	3.04	3.75	30	E	--
October	1988	2.17	6.66	8.21	31	M	--
November	1988	1.92	5.88	7.25	30	M	--
December	1988	1.79	5.48	6.76	31	M	--
January	1989	1.08	3.33	4.10	31	M	--
February	1989	1.66	5.10	6.29	28	M	--
March	1989	1.83	5.63	6.94	31	M	--
April	1989	2.25	6.91	8.52	30	M	--
May	1989	2.26	6.92	8.54	31	M	--
June	1989	2.72	8.34	10.28	30	M	--
July	1989	3.06	9.40	11.59	31	M	--
August	1989	4.46	13.69	16.89	31	M	--
September	1989	3.16	9.69	11.95	30	M	--
October	1989	2.41	7.41	9.13	31	M	--
November	1989	1.49	4.57	5.63	30	M	--
December	1989	1.68	5.16	6.37	31	M	--
January	1990	1.52	4.67	5.76	31	M	--
February	1990	1.57	4.81	5.93	28	M	--
March	1990	1.84	5.64	6.96	31	M	--
April	1990	0.84	2.57	3.17	30	M	--
May	1990	1.90	5.84	7.21	31	M	--
June	1990	2.65	8.13	10.03	30	M	--
July	1990	2.29	7.02	8.66	31	M	--
August	1990	2.18	6.69	8.25	31	M	--
September	1990	1.95	5.98	7.38	30	M	--
October	1990	2.46	7.54	9.30	31	M	--
November	1990	1.99	6.10	7.52	30	M	--
December	1990	2.16	6.64	8.18	31	M	--
January	1991	2.85	8.73	10.77	31	M	--
February	1991	0.67	2.05	2.53	28	M	--
March	1991	1.40	4.31	5.31	31	M	--
April	1991	1.84	5.64	6.96	30	M	--
May	1991	2.01	6.17	7.61	31	M	--
June	1991	1.73	5.30	6.54	30	M	--
July	1991	1.89	5.81	7.16	31	M	--
August	1991	2.19	6.71	8.28	31	M	--
September	1991	2.55	7.83	9.65	30	M	--
October	1991	2.87	8.80	10.85	31	M	--
November	1991	1.78	5.45	6.72	30	M	--
December	1991	2.02	6.19	7.64	31	M	--
January	1992	2.46	7.54	9.29	31	M	--
February	1992	1.91	5.87	7.24	29	M	--
March	1992	1.93	5.93	7.31	31	M	--
April	1992	1.87	5.75	7.09	30	M	--
May	1992	1.59	4.87	6.01	31	M	--
June	1992	1.84	5.65	6.97	30	M	--

WW-C1 Monthly Pumping Data

July	1992	2.55	7.82	9.64	31	M	--
August	1992	3.15	9.66	11.92	31	M	--
September	1992	3.22	9.89	12.19	30	M	--
October	1992	3.71	11.37	14.02	31	M	--
November	1992	3.67	11.27	13.90	30	M	--
December	1992	2.41	7.38	9.11	31	M	--
January	1993	2.51	7.70	9.50	31	M	--
February	1993	1.31	4.02	4.96	28	M	--
March	1993	0.51	1.57	1.94	31	M	--
April	1993	0.20	0.61	0.75	30	M	--
May	1993	0.75	2.30	2.84	31	M	--
June	1993	1.19	3.64	4.49	30	M	--
July	1993	0.30	0.91	1.12	31	M	--
August	1993	0.28	0.86	1.06	31	M	--
September	1993	0.50	1.53	1.89	30	M	--
October	1993	0.87	2.66	3.29	31	M	--
November	1993	0.63	1.94	2.39	30	M	--
December	1993	0.40	1.22	1.50	31	M	--
January	1994	0.61	1.88	2.32	31	M	--
February	1994	0.51	1.56	1.93	28	M	--
March	1994	0.69	2.11	2.61	31	M	--
April	1994	0.81	2.49	3.07	30	M	--
May	1994	0.66	2.01	2.49	31	M	--
June	1994	0.76	2.33	2.88	30	M	--
July	1994	0.64	1.97	2.43	31	M	--
August	1994	0.27	0.84	1.04	31	M	--
September	1994	0.01	0.02	0.03	30	M	--
October	1994	0.10	0.31	0.38	31	M	--
November	1994	0.23	0.71	0.87	30	M	--
December	1994	0.81	2.47	3.05	31	M	--
January	1995	0.51	1.57	1.93	31	M	--
February	1995	0.28	0.85	1.05	28	M	--
March	1995	0.27	0.82	1.01	31	M	--
April	1995	0.52	1.59	1.97	30	M	--
May	1995	0.59	1.82	2.24	31	M	--
June	1995	0.67	2.06	2.54	30	M	--
July	1995	1.14	3.51	4.33	31	M	--
August	1995	2.31	7.09	8.75	31	M	--
September	1995	2.41	7.39	9.11	30	M	--
October	1995	2.09	6.42	7.92	31	M	--
November	1995	1.82	5.58	6.88	30	M	--
December	1995	1.28	3.94	4.85	31	M	--
January	1996	1.12	3.43	4.23	31	M	--
February	1996	1.94	5.95	7.34	29	M	--
March	1996	1.37	4.21	5.19	31	M	--
April	1996	2.69	8.24	10.17	30	M	--
May	1996	2.16	6.64	8.19	31	M	--
June	1996	3.59	11.03	13.60	30	M	--
July	1996	3.72	11.42	14.09	31	M	--
August	1996	4.84	14.85	18.31	31	M	--
September	1996	3.35	10.29	12.69	30	M	--
October	1996	3.43	10.51	12.96	31	M	--

WW-C1 Monthly Pumping Data

November	1996	1.48	4.54	5.60	30	M	--
December	1996	1.75	5.36	6.62	31	M	--
January	1997	1.73	5.30	6.54	31	M	--
February	1997	1.59	4.88	6.02	28	M	--
March	1997	2.57	7.88	9.72	31	M	--
April	1997	2.48	7.62	9.40	30	M	--
May	1997	3.08	9.45	11.65	31	M	--
June	1997	3.74	11.49	14.17	30	M	--
July	1997	2.98	9.15	11.29	31	M	--
August	1997	2.64	8.09	9.97	31	M	--
September	1997	2.42	7.41	9.14	30	M	--
October	1997	2.38	7.31	9.01	31	M	--
November	1997	2.08	6.37	7.86	30	M	--
December	1997	0.90	2.77	3.42	31	M	--
January	1998	0.00	0.00	0.00	31	M	--
February	1998	0.00	0.00	0.00	28	M	--
March	1998	0.00	0.00	0.00	31	M	--
April	1998	0.00	0.00	0.00	30	M	--
May	1998	0.00	0.00	0.00	31	M	--
June	1998	0.00	0.00	0.00	30	M	--
July	1998	0.55	1.68	2.07	31	M	--
August	1998	0.67	2.04	2.52	31	M	--
September	1998	0.67	2.06	2.54	30	M	--
October	1998	0.87	2.67	3.30	31	M	--
November	1998	0.53	1.62	2.00	30	M	--
December	1998	0.44	1.35	1.67	31	M	--
January	1999	0.90	2.77	3.41	31	M	--
February	1999	0.73	2.23	2.76	28	M	--
March	1999	1.42	4.34	5.36	31	M	--
April	1999	2.15	6.61	8.15	30	M	--
May	1999	3.78	11.60	14.31	31	M	--
June	1999	1.20	3.67	4.53	30	M	--
July	1999	0.93	2.85	3.51	31	M	--
August	1999	1.95	6.00	7.39	31	M	--
September	1999	1.52	4.67	5.76	30	M	--
October	1999	1.57	4.81	5.93	31	M	--
November	1999	1.18	3.63	4.47	30	M	--
December	1999	1.16	3.57	4.41	31	M	--
January	2000	1.12	3.44	4.25	31	M	--
February	2000	1.02	3.12	3.85	29	M	--
March	2000	0.87	2.67	3.29	31	M	--
April	2000	0.25	0.78	0.96	30	M	--
May	2000	0.82	2.51	3.09	31	M	--
June	2000	0.38	1.17	1.44	30	M	--
July	2000	0.43	1.33	1.64	31	M	--
August	2000	0.72	2.20	2.72	31	M	--
September	2000	0.78	2.39	2.94	30	M	--
October	2000	0.55	1.69	2.08	31	M	--
November	2000	0.77	2.36	2.91	30	M	--
December	2000	0.18	0.55	0.68	31	M	--
January	2001	0.01	0.02	0.03	31	M	--
February	2001	0.26	0.81	0.99	28	M	--

### WW-C1 Monthly Pumping Data

March	2001	1.28	3.93	4.85	31	M	--
April	2001	1.59	4.88	6.02	30	M	--
May	2001	1.91	5.86	7.23	31	M	--
June	2001	1.69	5.18	6.39	30	M	--
July	2001	2.39	7.33	9.04	31	M	--
August	2001	2.19	6.71	8.27	31	M	--
September	2001	1.44	4.43	5.47	30	M	--
October	2001	1.38	4.22	5.21	31	M	--
November	2001	1.03	3.15	3.89	30	M	--
December	2001	0.91	2.79	3.45	31	M	--
January	2002	1.07	3.27	4.04	31	M	--
February	2002	1.61	4.93	6.08	28	M	--
March	2002	0.87	2.67	3.29	31	M	--
April	2002	0.95	2.91	3.59	30	M	--
May	2002	1.15	3.54	4.37	31	M	--
June	2002	0.99	3.05	3.76	30	M	--
July	2002	1.73	5.32	6.56	31	M	--
August	2002	2.49	7.65	9.43	31	M	--
September	2002	2.55	7.82	9.65	30	M	--
October	2002	2.65	8.13	10.03	31	M	--
November	2002	1.04	3.20	3.94	30	M	--
December	2002	1.74	5.33	6.57	31	M	--
January	2003	1.38	4.25	5.24	31	M	--
February	2003	0.34	1.05	1.29	28	M	--
March	2003	0.94	2.90	3.57	31	M	--
April	2003	1.84	5.63	6.95	30	M	--
May	2003	2.03	6.22	7.67	31	M	--
June	2003	2.10	6.46	7.96	30	M	--
July	2003	1.41	4.33	5.35	31	M	--
August	2003	1.16	3.57	4.41	31	M	--
September	2003	1.10	3.38	4.17	30	M	--
October	2003	0.90	2.77	3.42	31	M	--
November	2003	1.37	4.19	5.17	30	M	--
December	2003	1.27	3.90	4.81	31	M	--

<sup>a</sup>Source: E = Taken from Bechtel or REEC Co water production reports and includes estimated values.

H = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Moreo and others, 2003, WRIR 03-4245, Estimated Ground-Water Withdrawals from the Death Valley Regional Flow System, Nevada and California, 1913-98].

I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.

M = Taken from Bechtel or REEC Co water production reports.

R = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

<sup>b</sup> estimated indicates monthly value was estimated from yearly total

WW-C Monthly Pumping Data

Month	Year	Million Gallons	Acre-Ft	Million Liters	Days Reported	Source <sup>a</sup>	Comment <sup>b</sup>
September	1961	1.01	3.11	3.84	30	M	--
October	1961	2.55	7.84	9.67	31	M	--
November	1961	0.79	2.41	2.97	30	M	--
December	1961	0.59	1.81	2.23	31	M	--
January	1962	0.56	1.71	2.11	31	M	--
February	1962	0.59	1.81	2.23	28	M	--
March	1962	1.00	3.08	3.80	31	M	--
April	1962	9.35	28.70	35.39	30	M	--
May	1962	8.31	25.49	31.43	31	M	--
June	1962	1.44	4.41	5.44	30	M	--
July	1962	0.00	0.00	0.00	31	M	--
August	1962	4.17	12.81	15.80	31	M	--
September	1962	5.38	16.51	20.36	30	M	--
October	1962	2.10	6.43	7.93	31	M	--
November	1962	1.72	5.27	6.49	30	M	--
December	1962	2.90	8.89	10.97	31	M	--
January	1963	0.83	2.55	3.15	31	M	--
February	1963	2.18	6.68	8.24	28	M	--
March	1963	4.83	14.82	18.28	31	M	--
April	1963	7.06	21.68	26.74	30	M	--
May	1963	8.67	26.60	32.81	31	M	--
June	1963	1.08	3.31	4.08	30	M	--
July	1963	1.77	5.44	6.71	31	M	--
August	1963	2.67	8.18	10.09	31	M	--
September	1963	1.55	4.75	5.86	30	M	--
October	1963	3.30	10.14	12.51	31	M	--
November	1963	4.94	15.17	18.71	30	M	--
December	1963	6.22	19.10	23.55	31	M	--
January	1964	4.96	15.23	18.78	31	M	--
February	1964	4.95	15.18	18.73	29	M	--
March	1964	8.92	27.37	33.76	31	M	--
April	1964	8.07	24.75	30.53	30	M	--
May	1964	11.40	34.98	43.14	31	M	--
June	1964	3.69	11.32	13.96	30	M	--
July	1964	2.44	7.50	9.25	31	M	--
August	1964	2.86	8.78	10.83	31	M	--
September	1964	0.06	0.19	0.24	30	M	--
October	1964	4.10	12.58	15.52	31	M	--
November	1964	2.15	6.59	8.13	30	M	--
December	1964	3.97	12.18	15.02	31	M	--
January	1965	0.00	0.00	0.00	31	M	--
February	1965	0.00	0.00	0.00	28	M	--
March	1965	1.76	5.39	6.64	31	M	--
April	1965	2.45	7.52	9.27	30	M	--
May	1965	1.30	3.99	4.92	31	M	--
June	1965	0.99	3.03	3.73	30	M	--
July	1965	3.26	10.00	12.33	31	M	--
August	1965	2.58	7.91	9.76	31	M	--
September	1965	3.05	9.37	11.56	26	M	--

WW-C Monthly Pumping Data

October	1965	--	--	--	0	I	--
November	1965	4.30	13.20	16.28	29	M	--
December	1965	5.35	16.41	20.24	31	M	--
January	1966	5.72	17.54	21.63	31	M	--
February	1966	2.06	6.31	7.78	28	M	--
March	1966	5.28	16.21	20.00	31	M	--
April	1966	5.99	18.38	22.67	30	M	--
May	1966	4.23	12.96	15.99	29	M	--
June	1966	--	--	--	0	I	--
July	1966	--	--	--	0	I	--
August	1966	0.14	0.42	0.52	28	M	--
September	1966	0.00	0.00	0.00	5	M	--
October	1966	0.00	0.00	0.00	31	M	--
November	1966	0.00	0.00	0.00	30	M	--
December	1966	0.00	0.00	0.00	31	M	--
January	1967	0.00	0.00	0.00	31	M	--
February	1967	0.00	0.00	0.00	28	M	--
March	1967	0.00	0.00	0.00	31	M	--
April	1967	0.00	0.00	0.00	30	M	--
May	1967	3.30	10.11	12.47	31	M	--
June	1967	5.53	16.96	20.92	30	M	--
July	1967	3.35	10.27	12.67	365	R	estimated
August	1967	3.35	10.27	12.67	365	R	estimated
September	1967	3.35	10.27	12.67	365	R	estimated
October	1967	3.35	10.27	12.67	365	R	estimated
November	1967	3.35	10.27	12.67	365	R	estimated
December	1967	3.35	10.27	12.67	365	R	estimated
January	1968	6.75	20.71	25.55	366	R	estimated
February	1968	6.75	20.71	25.55	366	R	estimated
March	1968	6.75	20.71	25.55	366	R	estimated
April	1968	6.75	20.71	25.55	366	R	estimated
May	1968	6.75	20.71	25.55	366	R	estimated
June	1968	6.75	20.71	25.55	366	R	estimated
July	1968	6.75	20.71	25.55	366	R	estimated
August	1968	6.75	20.71	25.55	366	R	estimated
September	1968	6.75	20.71	25.55	366	R	estimated
October	1968	6.75	20.71	25.55	366	R	estimated
November	1968	6.75	20.71	25.55	366	R	estimated
December	1968	6.75	20.71	25.55	366	R	estimated
January	1969	7.97	24.45	30.15	365	R	estimated
February	1969	7.97	24.45	30.15	365	R	estimated
March	1969	7.97	24.45	30.15	365	R	estimated
April	1969	7.97	24.45	30.15	365	R	estimated
May	1969	7.97	24.45	30.15	365	R	estimated
June	1969	7.97	24.45	30.15	365	R	estimated
July	1969	7.97	24.45	30.15	365	R	estimated
August	1969	7.97	24.45	30.15	365	R	estimated
September	1969	7.97	24.45	30.15	365	R	estimated
October	1969	7.97	24.45	30.15	365	R	estimated
November	1969	7.97	24.45	30.15	365	R	estimated
December	1969	7.97	24.45	30.15	365	R	estimated
January	1970	5.20	15.96	19.68	365	R	estimated

WW-C Monthly Pumping Data

February	1970	5.20	15.96	19.68	365	R	estimated
March	1970	5.20	15.96	19.68	365	R	estimated
April	1970	5.20	15.96	19.68	365	R	estimated
May	1970	5.20	15.96	19.68	365	R	estimated
June	1970	5.20	15.96	19.68	365	R	estimated
July	1970	5.20	15.96	19.68	365	R	estimated
August	1970	5.20	15.96	19.68	365	R	estimated
September	1970	5.20	15.96	19.68	365	R	estimated
October	1970	5.20	15.96	19.68	365	R	estimated
November	1970	5.20	15.96	19.68	365	R	estimated
December	1970	5.20	15.96	19.68	365	R	estimated
January	1971	6.95	21.33	26.31	365	R	estimated
February	1971	6.95	21.33	26.31	365	R	estimated
March	1971	6.95	21.33	26.31	365	R	estimated
April	1971	6.95	21.33	26.31	365	R	estimated
May	1971	6.95	21.33	26.31	365	R	estimated
June	1971	6.95	21.33	26.31	365	R	estimated
July	1971	6.95	21.33	26.31	365	R	estimated
August	1971	6.95	21.33	26.31	365	R	estimated
September	1971	6.95	21.33	26.31	365	R	estimated
October	1971	6.95	21.33	26.31	365	R	estimated
November	1971	6.95	21.33	26.31	365	R	estimated
December	1971	6.95	21.33	26.31	365	R	estimated
January	1972	6.43	19.74	24.35	366	H	estimated
February	1972	6.43	19.74	24.35	366	H	estimated
March	1972	6.43	19.74	24.35	366	H	estimated
April	1972	6.43	19.74	24.35	366	H	estimated
May	1972	6.43	19.74	24.35	366	H	estimated
June	1972	6.43	19.74	24.35	366	H	estimated
July	1972	6.43	19.74	24.35	366	H	estimated
August	1972	6.43	19.74	24.35	366	H	estimated
September	1972	6.43	19.74	24.35	366	H	estimated
October	1972	6.43	19.74	24.35	366	H	estimated
November	1972	6.43	19.74	24.35	366	H	estimated
December	1972	6.43	19.74	24.35	366	H	estimated
January	1973	5.13	15.75	19.43	365	H	estimated
February	1973	5.13	15.75	19.43	365	H	estimated
March	1973	5.13	15.75	19.43	365	H	estimated
April	1973	5.13	15.75	19.43	365	H	estimated
May	1973	5.13	15.75	19.43	365	H	estimated
June	1973	5.13	15.75	19.43	365	H	estimated
July	1973	5.13	15.75	19.43	365	H	estimated
August	1973	5.13	15.75	19.43	365	H	estimated
September	1973	5.13	15.75	19.43	365	H	estimated
October	1973	5.13	15.75	19.43	365	H	estimated
November	1973	5.13	15.75	19.43	365	H	estimated
December	1973	5.13	15.75	19.43	365	H	estimated
January	1974	5.54	17.00	20.98	365	H	estimated
February	1974	5.54	17.00	20.98	365	H	estimated
March	1974	5.54	17.00	20.98	365	H	estimated
April	1974	5.54	17.00	20.98	365	H	estimated
May	1974	5.54	17.00	20.98	365	H	estimated

WW-C Monthly Pumping Data

June	1974	5.54	17.00	20.98	365	H	estimated
July	1974	5.54	17.00	20.98	365	H	estimated
August	1974	5.54	17.00	20.98	365	H	estimated
September	1974	5.54	17.00	20.98	365	H	estimated
October	1974	5.54	17.00	20.98	365	H	estimated
November	1974	5.54	17.00	20.98	365	H	estimated
December	1974	5.54	17.00	20.98	365	H	estimated
January	1975	5.27	16.16	19.93	365	H	estimated
February	1975	5.27	16.16	19.93	365	H	estimated
March	1975	5.27	16.16	19.93	365	H	estimated
April	1975	5.27	16.16	19.93	365	H	estimated
May	1975	5.27	16.16	19.93	365	H	estimated
June	1975	5.27	16.16	19.93	365	H	estimated
July	1975	5.27	16.16	19.93	365	H	estimated
August	1975	5.27	16.16	19.93	365	H	estimated
September	1975	5.27	16.16	19.93	365	H	estimated
October	1975	5.27	16.16	19.93	365	H	estimated
November	1975	5.27	16.16	19.93	365	H	estimated
December	1975	5.27	16.16	19.93	365	H	estimated
January	1976	4.29	13.17	16.24	366	H	estimated
February	1976	4.29	13.17	16.24	366	H	estimated
March	1976	4.29	13.17	16.24	366	H	estimated
April	1976	4.29	13.17	16.24	366	H	estimated
May	1976	4.29	13.17	16.24	366	H	estimated
June	1976	4.29	13.17	16.24	366	H	estimated
July	1976	4.29	13.17	16.24	366	H	estimated
August	1976	4.29	13.17	16.24	366	H	estimated
September	1976	4.29	13.17	16.24	366	H	estimated
October	1976	4.29	13.17	16.24	366	H	estimated
November	1976	4.29	13.17	16.24	366	H	estimated
December	1976	4.29	13.17	16.24	366	H	estimated
January	1977	3.64	11.17	13.78	365	H	estimated
February	1977	3.64	11.17	13.78	365	H	estimated
March	1977	3.64	11.17	13.78	365	H	estimated
April	1977	3.64	11.17	13.78	365	H	estimated
May	1977	3.64	11.17	13.78	365	H	estimated
June	1977	3.64	11.17	13.78	365	H	estimated
July	1977	3.64	11.17	13.78	365	H	estimated
August	1977	3.64	11.17	13.78	365	H	estimated
September	1977	3.64	11.17	13.78	365	H	estimated
October	1977	3.64	11.17	13.78	365	H	estimated
November	1977	3.64	11.17	13.78	365	H	estimated
December	1977	3.64	11.17	13.78	365	H	estimated
January	1978	3.61	11.07	13.66	365	H	estimated
February	1978	3.61	11.07	13.66	365	H	estimated
March	1978	3.61	11.07	13.66	365	H	estimated
April	1978	3.61	11.07	13.66	365	H	estimated
May	1978	3.61	11.07	13.66	365	H	estimated
June	1978	3.61	11.07	13.66	365	H	estimated
July	1978	3.61	11.07	13.66	365	H	estimated
August	1978	3.61	11.07	13.66	365	H	estimated
September	1978	3.61	11.07	13.66	365	H	estimated

WW-C Monthly Pumping Data

October	1978	3.61	11.07	13.66	365	H	estimated
November	1978	3.61	11.07	13.66	365	H	estimated
December	1978	3.61	11.07	13.66	365	H	estimated
January	1979	2.93	9.00	11.10	365	H	estimated
February	1979	2.93	9.00	11.10	365	H	estimated
March	1979	2.93	9.00	11.10	365	H	estimated
April	1979	2.93	9.00	11.10	365	H	estimated
May	1979	2.93	9.00	11.10	365	H	estimated
June	1979	2.93	9.00	11.10	365	H	estimated
July	1979	2.93	9.00	11.10	365	H	estimated
August	1979	2.93	9.00	11.10	365	H	estimated
September	1979	2.93	9.00	11.10	365	H	estimated
October	1979	2.93	9.00	11.10	365	H	estimated
November	1979	2.93	9.00	11.10	365	H	estimated
December	1979	2.93	9.00	11.10	365	H	estimated
January	1980	3.15	9.67	11.92	366	H	estimated
February	1980	3.15	9.67	11.92	366	H	estimated
March	1980	3.15	9.67	11.92	366	H	estimated
April	1980	3.15	9.67	11.92	366	H	estimated
May	1980	3.15	9.67	11.92	366	H	estimated
June	1980	3.15	9.67	11.92	366	H	estimated
July	1980	3.15	9.67	11.92	366	H	estimated
August	1980	3.15	9.67	11.92	366	H	estimated
September	1980	3.15	9.67	11.92	366	H	estimated
October	1980	3.15	9.67	11.92	366	H	estimated
November	1980	3.15	9.67	11.92	366	H	estimated
December	1980	3.15	9.67	11.92	366	H	estimated
January	1981	3.23	9.92	12.24	365	H	estimated
February	1981	3.23	9.92	12.24	365	H	estimated
March	1981	3.23	9.92	12.24	365	H	estimated
April	1981	3.23	9.92	12.24	365	H	estimated
May	1981	3.23	9.92	12.24	365	H	estimated
June	1981	3.23	9.92	12.24	365	H	estimated
July	1981	3.23	9.92	12.24	365	H	estimated
August	1981	3.23	9.92	12.24	365	H	estimated
September	1981	3.23	9.92	12.24	365	H	estimated
October	1981	3.23	9.92	12.24	365	H	estimated
November	1981	3.23	9.92	12.24	365	H	estimated
December	1981	3.23	9.92	12.24	365	H	estimated
January	1982	3.32	10.18	12.55	365	H	estimated
February	1982	3.32	10.18	12.55	365	H	estimated
March	1982	3.32	10.18	12.55	365	H	estimated
April	1982	3.32	10.18	12.55	365	H	estimated
May	1982	3.32	10.18	12.55	365	H	estimated
June	1982	3.32	10.18	12.55	365	H	estimated
July	1982	3.32	10.18	12.55	365	H	estimated
August	1982	3.32	10.18	12.55	365	H	estimated
September	1982	3.32	10.18	12.55	365	H	estimated
October	1982	3.32	10.18	12.55	365	H	estimated
November	1982	3.32	10.18	12.55	365	H	estimated
December	1982	3.32	10.18	12.55	365	H	estimated
January	1983	1.72	5.29	6.53	31	M	--

WW-C Monthly Pumping Data

February	1983	1.73	5.30	6.54	28	M	--
March	1983	1.86	5.71	7.04	31	M	--
April	1983	2.17	6.66	8.21	30	M	--
May	1983	3.25	9.97	12.30	31	M	--
June	1983	3.06	9.38	11.56	30	M	--
July	1983	3.23	9.91	12.23	31	M	--
August	1983	2.85	8.73	10.77	31	M	--
September	1983	2.95	9.05	11.17	30	M	--
October	1983	1.87	5.73	7.07	31	M	--
November	1983	1.67	5.14	6.34	30	M	--
December	1983	1.36	4.18	5.16	31	M	--
January	1984	1.89	5.81	7.17	31	M	--
February	1984	1.83	5.63	6.94	29	M	--
March	1984	1.95	5.98	7.37	31	M	--
April	1984	2.07	6.36	7.84	30	M	--
May	1984	3.34	10.26	12.65	31	M	--
June	1984	2.72	8.36	10.30	30	M	--
July	1984	2.84	8.72	10.75	31	M	--
August	1984	2.88	8.84	10.91	31	M	--
September	1984	2.54	7.79	9.61	30	M	--
October	1984	2.78	8.52	10.50	31	M	--
November	1984	2.77	8.50	10.49	30	M	--
December	1984	3.58	10.98	13.54	31	E	--
January	1985	3.21	9.86	12.16	31	E	--
February	1985	2.56	7.85	9.68	28	M	--
March	1985	3.20	9.81	12.11	31	M	--
April	1985	2.66	8.16	10.07	30	M	--
May	1985	1.96	6.00	7.40	31	M	--
June	1985	0.62	1.91	2.36	30	M	--
July	1985	0.74	2.26	2.79	31	M	--
August	1985	1.09	3.36	4.14	31	M	--
September	1985	1.03	3.16	3.89	30	M	--
October	1985	0.66	2.01	2.48	31	M	--
November	1985	1.06	3.25	4.01	30	M	--
December	1985	0.59	1.80	2.22	31	E	--
January	1986	0.13	0.38	0.47	31	M	--
February	1986	0.88	2.69	3.32	28	M	--
March	1986	2.66	8.15	10.05	31	M	--
April	1986	1.96	6.01	7.42	30	M	--
May	1986	1.14	3.51	4.33	31	M	--
June	1986	1.11	3.41	4.21	30	M	--
July	1986	1.24	3.81	4.70	31	M	--
August	1986	1.15	3.54	4.37	31	M	--
September	1986	2.68	8.21	10.13	30	E	--
October	1986	2.23	6.85	8.45	31	M	--
November	1986	1.36	4.17	5.14	30	M	--
December	1986	0.72	2.22	2.74	31	M	--
January	1987	0.96	2.96	3.65	31	M	--
February	1987	0.51	1.56	1.92	28	M	--
March	1987	0.90	2.77	3.42	31	M	--
April	1987	0.93	2.85	3.51	30	M	--
May	1987	0.50	1.54	1.90	31	M	--

WW-C Monthly Pumping Data

June	1987	1.03	3.16	3.89	30	M	--
July	1987	1.03	3.15	3.89	31	M	--
August	1987	0.54	1.65	2.03	31	M	--
September	1987	0.37	1.14	1.41	30	M	--
October	1987	0.30	0.91	1.12	31	M	--
November	1987	0.09	0.29	0.35	30	M	--
December	1987	0.00	0.00	0.00	31	M	--
January	1988	1.86	5.70	7.03	31	M	--
February	1988	1.17	3.60	4.44	29	M	--
March	1988	0.48	1.47	1.81	31	M	--
April	1988	1.14	3.50	4.31	30	M	--
May	1988	1.46	4.49	5.54	31	M	--
June	1988	1.14	3.51	4.33	30	M	--
July	1988	1.61	4.93	6.08	31	M	--
August	1988	1.50	4.61	5.68	31	M	--
September	1988	1.11	3.39	4.19	30	M	--
October	1988	1.79	5.49	6.76	31	M	--
November	1988	1.76	5.40	6.66	30	M	--
December	1988	2.39	7.33	9.04	31	M	--
January	1989	1.39	4.26	5.25	31	M	--
February	1989	0.12	0.35	0.44	28	M	--
March	1989	0.00	0.00	0.01	31	M	--
April	1989	0.00	0.00	0.00	30	M	--
May	1989	0.00	0.00	0.00	31	M	--
June	1989	0.19	0.57	0.71	30	M	--
July	1989	3.50	10.75	13.25	31	M	--
August	1989	8.30	25.46	31.40	31	M	--
September	1989	7.62	23.39	28.84	30	M	--
October	1989	8.70	26.68	32.91	31	M	--
November	1989	1.79	5.50	6.79	30	M	--
December	1989	0.00	0.00	0.00	31	M	--
January	1990	0.00	0.00	0.00	31	M	--
February	1990	0.46	1.40	1.73	28	M	--
March	1990	4.94	15.17	18.71	31	M	--
April	1990	4.04	12.39	15.28	30	M	--
May	1990	4.38	13.44	16.58	31	M	--
June	1990	3.30	10.12	12.48	30	M	--
July	1990	3.26	10.01	12.35	31	M	--
August	1990	2.78	8.54	10.53	31	M	--
September	1990	0.97	2.99	3.69	30	E	--
October	1990	2.24	6.87	8.47	31	M	--
November	1990	1.70	5.21	6.43	30	M	--
December	1990	1.60	4.92	6.07	31	M	--
January	1991	0.24	0.74	0.91	31	M	--
February	1991	1.81	5.55	6.85	28	M	--
March	1991	2.10	6.45	7.96	31	M	--
April	1991	2.84	8.71	10.75	30	M	--
May	1991	3.93	12.06	14.87	31	M	--
June	1991	2.38	7.31	9.01	30	M	--
July	1991	2.99	9.17	11.31	31	M	--
August	1991	3.06	9.40	11.59	31	M	--
September	1991	2.35	7.22	8.91	30	M	--

WW-C Monthly Pumping Data

October	1991	2.42	7.44	9.17	31	M	--
November	1991	2.17	6.64	8.19	30	M	--
December	1991	1.36	4.18	5.15	31	M	--
January	1992	1.02	3.14	3.87	31	M	--
February	1992	1.90	5.84	7.21	29	M	--
March	1992	3.67	11.26	13.89	31	M	--
April	1992	4.98	15.28	18.84	30	M	--
May	1992	2.37	7.28	8.98	31	M	--
June	1992	0.90	2.75	3.39	30	M	--
July	1992	0.00	0.00	0.00	31	M	--
August	1992	0.00	0.00	0.00	31	M	--
September	1992	0.00	0.00	0.00	30	M	--
October	1992	0.00	0.00	0.00	31	M	--
November	1992	0.00	0.00	0.00	30	M	--
December	1992	0.00	0.00	0.00	31	M	--
January	1993	1.43	4.37	5.39	31	M	--
February	1993	1.13	3.46	4.26	28	M	--
March	1993	1.82	5.58	6.88	31	M	--
April	1993	3.37	10.33	12.74	30	M	--
May	1993	3.01	9.24	11.39	31	M	--
June	1993	1.19	3.65	4.51	30	M	--
July	1993	1.38	4.23	5.22	31	M	--
August	1993	3.04	9.33	11.51	31	M	--
September	1993	3.47	10.64	13.12	30	M	--
October	1993	1.32	4.06	5.01	31	M	--
November	1993	0.59	1.80	2.22	30	M	--
December	1993	0.46	1.40	1.73	31	M	--
January	1994	1.94	5.96	7.36	31	M	--
February	1994	1.09	3.33	4.11	28	M	--
March	1994	1.31	4.01	4.94	31	M	--
April	1994	2.44	7.49	9.24	30	M	--
May	1994	0.76	2.32	2.86	31	M	--
June	1994	2.53	7.77	9.58	30	M	--
July	1994	1.29	3.97	4.90	31	M	--
August	1994	1.11	3.40	4.20	31	M	--
September	1994	0.43	1.31	1.62	30	M	--
October	1994	0.62	1.89	2.33	31	M	--
November	1994	0.93	2.86	3.52	30	M	--
December	1994	2.10	6.44	7.95	31	M	--
January	1995	0.62	1.89	2.33	31	M	--
February	1995	0.69	2.12	2.61	28	M	--
March	1995	1.02	3.14	3.87	31	M	--
April	1995	0.80	2.44	3.01	30	M	--
May	1995	0.06	0.18	0.22	31	M	--
June	1995	0.49	1.50	1.85	30	M	--
July	1995	0.55	1.70	2.09	31	M	--

<sup>a</sup>Source: E = Taken from Bechtel or REECO water production reports and includes estimated values.

H = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Moreo and others, 2003, WRIR 03-4245, Estimated Ground-Water Withdrawals from the Death Valley Regional Flow System, Nevada and California, 1913-98].

I = Insufficient or no data to calculate monthly total; no water may have been withdrawn for month.

## WW-C Monthly Pumping Data

M = Taken from Bechtel or REECo water production reports.

R = Insufficient data to determine monthly value. Annual value listed in annual data set as reported in [Claassen, H.C., 1973, Water quality and physical characteristics of Nevada Test Site water-supply wells: U.S. Geological Survey Open-File Report USGS-474-158, 145 p.].

<sup>b</sup> estimated indicates monthly value was estimated from yearly total

Army-1 WW  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
Army-1 WW	961.13	239.57	239.39	7/1/1962	--	721.74	BD	database
Army-1 WW	961.13	239.45	239.27	7/17/1962	--	721.86	BD	database
Army-1 WW	961.13	239.21	239.02	7/17/1962	--	722.10	BD	database
Army-1 WW	961.13	239.45	239.27	7/17/1962	Z	721.86	BD	database
Army-1 WW	961.13	239.21	239.02	7/17/1962	R	722.10	BD	database
Army-1 WW	961.13	238.96	238.78	9/11/1962	--	722.35	BD	database
Army-1 WW	961.13	238.96	238.78	9/11/1962	--	722.35	BD	database
Army-1 WW	961.13	238.84	238.66	1/25/1963	--	722.47	BD	database
Army-1 WW	961.13	238.84	238.66	1/25/1963	--	722.47	BD	database
Army-1 WW	961.13	239.27	239.08	11/7/1963	--	722.04	BD	database
Army-1 WW	961.13	239.27	239.08	11/7/1963	--	722.04	BD	database
Army-1 WW	961.13	239.88	239.69	4/22/1969	--	<b>721.43</b>	BD	database
Army-1 WW	961.13	240.40	240.21	3/18/1971	R	720.92	BD	database
Army-1 WW	961.13	240.18	240.00	3/18/1971	--	721.13	BD	database
Army-1 WW	961.13	239.82	239.63	10/26/1971	R	721.49	BD	database
Army-1 WW	961.13	239.94	239.75	10/26/1971	--	721.37	BD	database
Army-1 WW	961.13	241.07	240.88	8/12/1972	--	720.25	BD	database
Army-1 WW	961.13	241.16	240.97	8/12/1972	R	720.15	BD	database
Army-1 WW	961.13	239.05	238.87	10/15/1987	--	722.26	BD	database
Army-1 WW	961.13	239.14	238.96	10/15/1987	--	<b>722.17</b>	BD	database
Army-1 WW	961.13	239.32	239.14	7/6/1995	--	<b>721.99</b>	BD	database
Army-1 WW	961.13	239.36	239.18	7/7/1995	--	<b>721.95</b>	BD	database
Army-1 WW	961.13	239.36	239.17	7/7/1995	--	<b>721.95</b>	BD	database
Army-1 WW	961.13	239.36	239.17	7/7/1995	--	<b>721.95</b>	BD	database
Army-1 WW	961.13	239.31	239.13	7/10/1995	--	<b>722.00</b>	BD	database
Army-1 WW	961.13	239.33	239.15	7/10/1995	--	<b>721.98</b>	BD	database
Army-1 WW	961.13	239.29	239.11	7/11/1995	--	<b>722.02</b>	BD	database
Army-1 WW	961.13	239.52	239.33	12/12/1996	Z	721.79	BD	database
Army-1 WW	961.13	239.61	239.43	1/30/1997	Z	721.70	BD	database
Army-1 WW	961.13	239.50	239.31	3/20/1997	Z	721.81	BD	database
Army-1 WW	961.13	239.43	239.25	4/24/1997	Z	721.88	BD	database
Army-1 WW	961.13	239.56	239.38	5/22/1997	Z	721.75	BD	database
Army-1 WW	961.13	239.45	239.27	6/12/1997	Z	721.86	BD	database
Army-1 WW	961.13	239.51	239.32	7/10/1997	Z	721.80	BD	database
Army-1 WW	961.13	239.54	239.35	8/21/1997	Z	721.77	BD	database
Army-1 WW	961.13	239.43	239.25	9/23/1997	Z	721.88	BD	database
Army-1 WW	961.13	239.39	239.20	10/23/1997	Z	721.92	BD	database
Army-1 WW	961.13	239.52	239.34	11/20/1997	Z	721.79	BD	database
Army-1 WW	961.13	239.46	239.27	12/16/1997	Z	721.85	BD	database

Army-1 WW  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
Army-1 WW	961.13	239.37	239.18	1/26/1998	Z	721.94	BD	database
Army-1 WW	961.13	239.40	239.21	2/19/1998	Z	721.91	BD	database
Army-1 WW	961.13	239.34	239.15	3/19/1998	Z	721.97	BD	database
Army-1 WW	961.13	239.37	239.18	4/16/1998	Z	721.94	BD	database
Army-1 WW	961.13	239.32	239.14	5/21/1998	Z	721.99	BD	database
Army-1 WW	961.13	239.31	239.13	6/29/1998	Z	722.00	BD	database
Army-1 WW	961.13	239.31	239.13	7/16/1998	Z	722.00	BD	database
Army-1 WW	961.13	239.32	239.13	8/27/1998	Z	721.99	BD	database
Army-1 WW	961.13	239.30	239.12	9/17/1998	Z	722.01	BD	database
Army-1 WW	961.13	239.24	239.06	10/29/1998	Z	722.07	BD	database
Army-1 WW	961.13	239.34	239.16	11/25/1998	Z	721.97	BD	database
Army-1 WW	961.13	239.29	239.11	12/22/1998	Z	722.02	BD	database
Army-1 WW	961.13	239.37	239.18	1/28/1999	Z	721.94	BD	database
Army-1 WW	961.13	239.19	239.00	2/25/1999	Z	722.12	BD	database
Army-1 WW	961.13	239.25	239.07	3/25/1999	Z	722.06	BD	database
Army-1 WW	961.13	239.24	239.05	4/27/1999	Z	722.07	BD	database
Army-1 WW	961.13	239.30	239.11	5/20/1999	Z	722.01	BD	database
Army-1 WW	961.13	239.28	239.10	6/17/1999	Z	722.03	BD	database
Army-1 WW	961.13	239.30	239.12	7/28/1999	Z	722.01	BD	database
Army-1 WW	961.13	239.28	239.09	8/9/1999	Z	722.03	BD	database
Army-1 WW	961.13	239.26	239.07	9/27/1999	Z	722.05	BD	database
Army-1 WW	961.13	239.34	239.16	10/19/1999	Z	721.97	BD	database
Army-1 WW	961.13	239.25	239.07	11/4/1999	Z	722.06	BD	database
Army-1 WW	961.13	239.35	239.17	12/14/1999	Z	721.96	BD	database
Army-1 WW	961.13	239.24	239.06	1/26/2000	Z	722.07	BD	database
Army-1 WW	961.13	239.30	239.11	2/29/2000	Z	722.01	BD	database
Army-1 WW	961.13	239.27	239.09	3/23/2000	Z	722.04	BD	database
Army-1 WW	961.13	239.33	239.14	4/26/2000	Z	721.98	BD	database
Army-1 WW	961.13	239.29	239.11	5/9/2000	Z	722.02	BD	database
Army-1 WW	961.13	239.32	239.14	6/8/2000	Z	721.99	BD	database
Army-1 WW	961.13	239.33	239.14	7/11/2000	Z	721.98	BD	database
Army-1 WW	961.13	239.34	239.15	8/18/2000	Z	721.98	BD	database
Army-1 WW	961.13	239.30	239.11	9/20/2000	Z	722.01	BD	database
Army-1 WW	961.13	239.37	239.19	10/12/2000	Z	721.94	BD	database
Army-1 WW	961.13	239.35	239.16	11/9/2000	Z	721.96	BD	database
Army-1 WW	961.13	239.39	239.20	12/6/2000	Z	721.92	BD	database
Army-1 WW	961.13	239.30	239.12	1/10/2001	Z	722.01	BD	database
Army-1 WW	961.13	239.39	239.20	2/15/2001	Z	721.92	BD	database
Army-1 WW	961.13	239.30	239.11	3/28/2001	Z	722.01	BD	database

Army-1 WW  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
Army-1 WW	961.13	239.79	239.60	4/19/2001	Z	721.52	BD	database
Army-1 WW	961.13	240.71	240.52	5/24/2001	R	720.60	BD	database
Army-1 WW	961.13	239.66	239.48	6/24/2001	Z	721.65	BD	database
Army-1 WW	961.13	239.75	239.56	7/23/2001	--	<b>721.56</b>	BD	database
Army-1 WW	961.13	239.69	239.50	8/20/2001	--	<b>721.62</b>	BD	database
Army-1 WW	961.13	239.64	239.46	9/10/2001	--	<b>721.67</b>	BD	database
Army-1 WW	961.13	239.62	239.43	10/22/2001	Z	721.69	BD	database
Army-1 WW	961.13	239.51	239.33	11/26/2001	Z	721.80	BD	database
Army-1 WW	961.13	239.43	239.24	12/10/2001	Z	721.88	BD	database
Army-1 WW	961.13	239.58	239.40	1/14/2002	Z	721.73	BD	database
Army-1 WW	961.13	239.69	239.50	2/11/2002	Z	721.62	BD	database
Army-1 WW	961.13	239.74	239.55	3/25/2002	Z	721.57	BD	database
Army-1 WW	961.13	239.75	239.56	4/29/2002	Z	721.56	BD	database
Army-1 WW	961.13	239.83	239.64	5/13/2002	Z	721.48	BD	database
Army-1 WW	961.13	239.87	239.69	6/24/2002	Z	721.44	BD	database
Army-1 WW	961.13	239.82	239.64	7/29/2002	Z	721.49	BD	database
Army-1 WW	961.13	239.79	239.60	8/26/2002	Z	721.52	BD	database
Army-1 WW	961.13	239.78	239.60	9/23/2002	Z	721.53	BD	database
Army-1 WW	961.13	239.73	239.54	10/28/2002	Z	721.58	BD	database
Army-1 WW	961.13	239.83	239.65	11/12/2002	Z	721.48	BD	database
Army-1 WW	961.13	239.54	239.35	12/9/2002	Z	721.77	BD	database
Army-1 WW	961.13	239.73	239.54	1/27/2003	Z	721.59	BD	database
Army-1 WW	961.13	240.10	239.92	2/26/2003	R	721.21	BD	database
Army-1 WW	961.13	239.69	239.51	3/17/2003	Z	721.62	BD	database
Army-1 WW	961.13	239.73	239.55	4/21/2003	Z	721.58	BD	database
Army-1 WW	961.13	239.83	239.64	5/27/2003	Z	721.48	BD	database
Army-1 WW	961.13	239.78	239.60	6/23/2003	Z	721.53	BD	database
Army-1 WW	961.13	239.78	239.60	7/28/2003	Z	721.53	BD	USGS website
Army-1 WW	961.13	239.74	239.56	8/25/2003	Z	721.57	BD	USGS website
Army-1 WW	961.13	239.73	239.55	9/29/2003	Z	721.58	BD	USGS website
Army-1 WW	961.13	239.78	239.60	10/27/2003	Z	721.53	BD	USGS website
Army-1 WW	961.13	239.74	239.56	11/17/2003	Z	721.57	BD	USGS website
Army-1 WW	961.13	239.73	239.54	12/8/2003	Z	721.59	BD	USGS website
Army-1 WW	961.13	239.69	239.51	1/20/2004	--	721.62	BD	USGS website
Army-1 WW	961.13	239.67	239.48	2/23/2004	--	721.64	BD	USGS website
Army-1 WW	961.13	239.86	239.67	3/8/2004	--	721.45	BD	USGS website
Army-1 WW	961.13	239.90	239.71	4/19/2004	--	721.41	BD	USGS website
Army-1 WW	961.13	240.23	240.05	5/17/2004	--	721.08	BD	USGS website

Army-1 WW  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: R = Site had been pumped recently.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level***

**used to determine historical static water level** not applicable

**used to determine contemporary static water level** not applicable

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

ER 5-3 #2  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-3 #2	1017.24	265.69	--	9/20/2000	Z	751.55	none	database
ER 5-3 #2	1017.24	265.98	--	11/21/2000	Z	751.26	none	database
ER 5-3 #2	1017.24	296.96	--	3/20/2001	Z	720.28	none	database
ER 5-3 #2	1017.24	296.96	--	3/20/2001	Z	720.28	none	database
ER 5-3 #2	1017.24	295.84	--	3/21/2001	Z	721.39	none	database
ER 5-3 #2	1017.24	295.84	--	3/21/2001	Z	721.39	none	database
ER 5-3 #2	1017.24	293.33	--	3/30/2001	--	723.91	none	database
ER 5-3 #2	1017.24	293.32	--	3/31/2001	--	723.92	none	database
ER 5-3 #2	1017.24	293.34	--	4/4/2001	Z	723.90	none	database
ER 5-3 #2	1017.24	293.41	--	4/6/2001	Z	723.83	none	database
ER 5-3 #2	1017.24	289.92	--	4/7/2001	Z	727.32	none	database
ER 5-3 #2	1017.24	290.91	--	4/11/2001	Z	726.33	none	database
ER 5-3 #2	1017.24	291.72	--	4/12/2001	Z	725.52	none	database
ER 5-3 #2	1017.24	288.79	--	4/13/2001	P	728.45	none	database
ER 5-3 #2	1017.24	322.05	--	4/13/2001	P	695.19	none	database
ER 5-3 #2	1017.24	289.33	--	4/17/2001	R	727.91	none	database
ER 5-3 #2	1017.24	290.21	--	4/19/2001	R	727.03	none	database
ER 5-3 #2	1017.24	51.91	--	5/1/2001	R	965.33	none	database
ER 5-3 #2	1017.24	26.52	--	5/3/2001	Z	990.72	none	database
ER 5-3 #2	1017.24	291.73	--	5/7/2001	R	725.51	none	database
ER 5-3 #2	1017.24	291.40	--	5/18/2001	P	725.84	none	database
ER 5-3 #2	1017.24	293.10	--	9/6/2001	Z	724.13	none	database
ER 5-3 #2	1017.24	292.28	--	1/14/2002	--	724.96	none	database
ER 5-3 #2	1017.24	292.07	--	2/21/2002	--	725.17	none	database
ER 5-3 #2	1017.24	291.85	--	3/12/2002	--	725.39	none	database
ER 5-3 #2	1017.24	291.11	--	7/3/2002	--	726.13	none	database
ER 5-3 #2	1017.24	291.01	--	9/9/2002	--	726.23	none	database
ER 5-3 #2	1017.24	291.04	--	9/11/2002	--	726.20	none	database
ER 5-3 #2	1017.24	291.02	--	9/11/2002	--	726.22	none	database
ER 5-3 #2	1017.24	291.02	--	9/11/2002	Z	726.22	none	database
ER 5-3 #2	1017.24	291.04	--	9/11/2002	Z	726.20	none	database
ER 5-3 #2	1017.24	290.72	--	1/14/2003	--	726.52	none	database
ER 5-3 #2	1017.24	290.72	--	1/14/2003	Z	726.52	none	database
ER 5-3 #2	1017.24	290.50	--	3/10/2003	--	726.74	none	database
ER 5-3 #2	1017.24	290.37	--	6/18/2003	--	726.87	none	database
ER 5-3 #2	1017.24	290.44	--	8/6/2003	--	726.80	none	database
ER 5-3 #2	1017.24	290.30	--	9/25/2003	--	726.94	none	database
ER 5-3 #2	1017.24	290.26	--	11/20/2003	--	726.98	none	database
ER 5-3 #2	1017.24	289.93	--	1/27/2004	--	727.31	none	USGS website

ER 5-3 #2  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-3 #2	1017.24	290.01	--	3/11/2004	--	727.23	none	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: P = Site was being pumped.

R = Site had been pumped recently.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

static water level could not be determined

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

Well ER 5-3 #3  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-3 #3	1017.24	282.72	282.70	2/21/2001	--	734.54	BD	database
ER 5-3 #3	1017.24	282.55	282.53	2/23/2001	--	734.70	BD	database
ER 5-3 #3	1017.24	282.54	282.52	2/23/2001	Z	734.72	BD	database
ER 5-3 #3	1017.24	282.67	282.65	2/27/2001	Z	734.59	BD	database
ER 5-3 #3	1017.24	282.74	282.72	5/11/2001	Z	734.52	BD	database
ER 5-3 #3	1017.24	282.71	282.69	9/6/2001	Z	734.55	BD	database
ER 5-3 #3	1017.24	282.57	282.55	1/15/2002	--	734.68	BD	database
ER 5-3 #3	1017.24	282.74	282.73	2/21/2002	--	734.51	BD	database
ER 5-3 #3	1017.24	282.60	282.58	3/12/2002	--	734.66	BD	database
ER 5-3 #3	1017.24	282.64	282.62	7/3/2002	--	734.61	BD	database
ER 5-3 #3	1017.24	282.64	282.63	9/9/2002	--	734.61	BD	database
ER 5-3 #3	1017.24	282.63	282.61	12/24/2002	--	734.63	BD	database
ER 5-3 #3	1017.24	282.66	282.64	3/10/2003	--	734.60	BD	database
ER 5-3 #3	1017.24	282.70	282.68	4/25/2003	Z	734.56	BD	database
ER 5-3 #3	1017.24	282.71	282.69	7/21/2003	Z	734.54	BD	database
ER 5-3 #3	1017.24	282.74	282.73	8/6/2003	--	734.51	BD	database
ER 5-3 #3	1017.24	282.64	282.63	9/25/2003	--	734.61	BD	database
ER 5-3 #3	1017.24	282.58	282.56	11/20/2003	--	734.68	BD	database
ER 5-3 #3	1017.24	282.63	282.61	1/27/2004	--	734.63	BD	USGS website
ER 5-3 #3	1017.24	282.63	282.61	3/11/2004	--	734.63	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level** not applicable

used to determine contemporary static water level

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

Well ER 5-3 (3" deep)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-3 (3" deep)	1017.24	282.28	282.18	3/19/2000	Z	735.06	BD	database
ER 5-3 (3" deep)	1017.24	283.48	283.38	12/6/2000	--	733.86	BD	database
ER 5-3 (3" deep)	1017.24	282.68	282.58	3/2/2001	--	734.66	BD	database
ER 5-3 (3" deep)	1017.24	282.86	282.76	4/8/2001	Z	734.48	BD	database
ER 5-3 (3" deep)	1017.24	282.81	282.71	4/19/2001	Z <sup>f</sup>	734.53	BD	database
ER 5-3 (3" deep)	1017.24	283.00	282.90	9/6/2001	Z	734.34	BD	database
ER 5-3 (3" deep)	1017.24	283.21	283.11	2/21/2002	--	734.13	BD	database
ER 5-3 (3" deep)	1017.24	283.06	282.96	3/12/2002	--	734.28	BD	database
ER 5-3 (3" deep)	1017.24	283.15	283.05	7/3/2002	--	734.19	BD	database
ER 5-3 (3" deep)	1017.24	283.20	283.10	9/9/2002	--	734.14	BD	database
ER 5-3 (3" deep)	1017.24	283.22	283.12	12/24/2002	--	734.12	BD	database
ER 5-3 (3" deep)	1017.24	283.20	283.10	3/10/2003	--	734.14	BD	database
ER 5-3 (3" deep)	1017.24	283.15	283.05	6/18/2003	--	734.19	BD	database
ER 5-3 (3" deep)	1017.24	283.38	283.28	8/6/2003	--	733.96	BD	database
ER 5-3 (3" deep)	1017.24	283.23	283.13	9/25/2003	--	734.11	BD	database
ER 5-3 (3" deep)	1017.24	283.14	283.04	11/20/2003	--	734.20	BD	database
ER 5-3 (3" deep)	1017.24	283.22	283.12	1/26/2004	--	734.12	BD	USGS website
ER 5-3 (3" deep)	1017.24	283.17	283.07	3/11/2004	--	734.17	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level** not applicable

**used to determine contemporary static water level**

Well ER 5-3 (3" deep)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

<sup>f</sup>measurement performed prior to transducer installation, measurement assumed to represent undisturbed conditions

Well ER 5-3 (3" shallow)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-3 (3" shallow)	1017.24	282.42	282.32	3/19/2000	Z	734.92	BD	database
ER 5-3 (3" shallow)	1017.24	282.65	282.55	12/6/2000	--	734.69	BD	database
ER 5-3 (3" shallow)	1017.24	282.59	282.49	3/2/2001	--	734.75	BD	database
ER 5-3 (3" shallow)	1017.24	282.73	282.63	3/5/2001	--	734.61	BD	database
ER 5-3 (3" shallow)	1017.24	282.61	282.51	4/7/2001	Z	734.73	BD	database
ER 5-3 (3" shallow)	1017.24	282.71	282.61	4/13/2001	Z	734.63	BD	database
ER 5-3 (3" shallow)	1017.24	282.64	282.54	4/19/2001	Z <sup>f</sup>	734.70	BD	database
ER 5-3 (3" shallow)	1017.24	282.71	282.61	9/6/2001	Z	734.63	BD	database
ER 5-3 (3" shallow)	1017.24	282.54	282.44	1/14/2002	--	734.80	BD	database
ER 5-3 (3" shallow)	1017.24	282.78	282.68	2/21/2002	--	734.56	BD	database
ER 5-3 (3" shallow)	1017.24	282.61	282.51	3/12/2002	--	734.73	BD	database
ER 5-3 (3" shallow)	1017.24	282.67	282.57	7/3/2002	--	734.67	BD	database
ER 5-3 (3" shallow)	1017.24	282.69	282.59	9/9/2002	--	734.65	BD	database
ER 5-3 (3" shallow)	1017.24	282.70	282.60	12/24/2002	--	734.64	BD	database
ER 5-3 (3" shallow)	1017.24	282.71	282.61	3/10/2003	--	734.63	BD	database
ER 5-3 (3" shallow)	1017.24	282.61	282.51	6/18/2003	--	734.73	BD	database
ER 5-3 (3" shallow)	1017.24	282.76	282.66	8/6/2003	--	734.58	BD	database
ER 5-3 (3" shallow)	1017.24	282.69	282.59	9/25/2003	--	734.65	BD	database
ER 5-3 (3" shallow)	1017.24	282.63	282.53	11/20/2003	--	734.71	BD	database
ER 5-3 (3" shallow)	1017.24	282.71	282.60	1/27/2004	--	734.63	BD	USGS website
ER 5-3 (3" shallow)	1017.24	282.67	282.57	3/11/2004	--	734.67	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

Well ER 5-3 (3" shallow)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level** not applicable

used to determine contemporary static water level

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

<sup>f</sup>measurement performed prior to transducer installation, measurement assumed to represent undisturbed conditions

Well ER 5-3 (main/composite)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-3 (main/composite)	1017.24	85.85	85.82	2/28/2000	C	931.42	BD	database
ER 5-3 (main/composite)	1017.24	282.21	282.11	3/19/2000	Z	735.13	BD	database
ER 5-3 (main/composite)	1017.24	282.80	282.70	7/10/2000	--	734.54	BD	database
ER 5-3 (main/composite)	1017.24	282.74	282.64	9/20/2000	Z <sup>f</sup>	734.60	BD	database
ER 5-3 (main/composite)	1017.24	282.82	282.72	11/21/2000	Z <sup>f</sup>	734.52	BD	database
ER 5-3 (main/composite)	1017.24	282.71	282.61	12/6/2000	--	734.63	BD	database
ER 5-3 (main/composite)	1017.24	282.76	282.66	3/1/2001	--	734.58	BD	database
ER 5-3 (main/composite)	1017.24	282.66	282.56	3/14/2001	P	734.68	BD	database
ER 5-3 (main/composite)	1017.24	282.74	282.64	3/17/2001	R	734.60	BD	database
ER 5-3 (main/composite)	1017.24	282.88	282.78	4/8/2001	Z	734.46	BD	database
ER 5-3 (main/composite)	1017.24	282.78	282.68	4/12/2001	S	734.56	BD	database
ER 5-3 (main/composite)	1017.24	282.85	282.75	4/12/2001	Z	734.49	BD	database
ER 5-3 (main/composite)	1017.24	282.77	282.67	4/13/2001	Z	734.57	BD	database
ER 5-3 (main/composite)	1017.24	282.69	282.59	4/18/2001	Z	734.65	BD	database
ER 5-3 (main/composite)	1017.24	373.61	373.47	5/23/2001	Z	643.77	BD	database
ER 5-3 (main/composite)	1017.24	282.69	282.59	9/6/2001	Z	734.65	BD	database
ER 5-3 (main/composite)	1017.24	282.81	282.71	10/9/2001	Z	734.53	BD	database
ER 5-3 (main/composite)	1017.24	282.83	282.73	10/11/2001	Z	734.51	BD	database
ER 5-3 (main/composite)	1017.24	283.10	283.00	10/15/2001	Z	734.24	BD	database
ER 5-3 (main/composite)	1017.24	282.56	282.46	1/14/2002	--	734.78	BD	database
ER 5-3 (main/composite)	1017.24	282.73	282.63	2/21/2002	--	734.61	BD	database
ER 5-3 (main/composite)	1017.24	282.62	282.52	3/12/2002	--	734.72	BD	database
ER 5-3 (main/composite)	1017.24	282.66	282.56	7/3/2002	--	734.68	BD	database

Well ER 5-3 (main/composite)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-3 (main/composite)	1017.24	282.67	282.57	9/9/2002	--	734.67	BD	database
ER 5-3 (main/composite)	1017.24	282.64	282.54	12/24/2002	--	734.70	BD	database
ER 5-3 (main/composite)	1017.24	282.68	282.58	3/10/2003	--	734.66	BD	database
ER 5-3 (main/composite)	1017.24	282.62	282.52	6/18/2003	--	734.72	BD	database
ER 5-3 (main/composite)	1017.24	282.76	282.66	8/6/2003	--	734.58	BD	database
ER 5-3 (main/composite)	1017.24	282.68	282.58	9/25/2003	--	734.66	BD	database
ER 5-3 (main/composite)	1017.24	282.61	282.51	11/20/2003	--	734.73	BD	database
ER 5-3 (main/composite)	1017.24	282.66	282.56	1/26/2004	--	734.68	BD	USGS website
ER 5-3 (main/composite)	1017.24	282.67	282.57	3/11/2004	--	734.67	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

P = Site was being pumped.

R = Site had been pumped recently.

S = A nearby site that taps the same aquifer was being pumped.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level**

not applicable

**used to determine historical static water level**

not applicable

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

<sup>f</sup>predevelopment monitoring, measurement assumed to represent undisturbed conditions

ER 5-4 #2  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-4 #2	954.54	148.20	148.19	8/6/2002	C	806.36	BD	database
ER 5-4 #2	954.54	150.62	150.60	8/6/2002	C	803.94	BD	database
ER 5-4 #2	954.54	152.37	152.36	8/6/2002	C	802.19	BD	database
ER 5-4 #2	954.54	158.08	158.07	8/6/2002	C	796.48	BD	database
ER 5-4 #2	954.54	158.28	158.27	8/6/2002	C	796.27	BD	database
ER 5-4 #2	954.54	170.41	170.40	8/6/2002	C	784.14	BD	database
ER 5-4 #2	954.54	156.25	156.23	8/7/2002	C	798.31	BD	database
ER 5-4 #2	954.54	157.25	157.23	8/7/2002	C	797.31	BD	database
ER 5-4 #2	954.54	110.41	110.40	8/7/2002	C	844.14	BD	database
ER 5-4 #2	954.54	98.81	98.80	8/11/2002	C	855.74	BD	database
ER 5-4 #2	954.54	152.57	152.56	8/13/2002	C	801.99	BD	database
ER 5-4 #2	954.54	152.77	152.75	8/13/2002	C	801.79	BD	database
ER 5-4 #2	954.54	224.26	224.23	8/15/2002	C	730.31	BD	database
ER 5-4 #2	954.54	207.93	207.91	8/17/2002	C	746.63	BD	database
ER 5-4 #2	954.54	18.72	18.72	8/18/2002	C	935.83	BD	database
ER 5-4 #2	954.54	72.70	72.69	8/18/2002	C	881.85	BD	database
ER 5-4 #2	954.54	117.57	117.56	8/18/2002	C	836.98	BD	database
ER 5-4 #2	954.54	62.75	62.74	8/18/2002	C	891.80	BD	database
ER 5-4 #2	954.54	54.02	54.02	8/18/2002	C	900.53	BD	database
ER 5-4 #2	954.54	359.87	359.84	8/30/2002	C	594.70	BD	database
ER 5-4 #2	954.54	359.85	359.81	8/30/2002	C	594.73	BD	database
ER 5-4 #2	954.54	215.68	215.66	8/30/2002	C	738.89	BD	database
ER 5-4 #2	954.54	215.68	215.66	8/30/2002	C	738.89	BD	database
ER 5-4 #2	954.54	215.69	215.67	8/30/2002	C	738.87	BD	database
ER 5-4 #2	954.54	215.69	215.67	8/30/2002	C	738.87	BD	database
ER 5-4 #2	954.54	214.21	214.19	9/25/2002	Z	740.35	BD	database
ER 5-4 #2	954.54	211.63	211.61	10/14/2002	Z	742.93	BD	database
ER 5-4 #2	954.54	211.63	211.61	10/18/2002	Z	742.94	BD	database
ER 5-4 #2	954.54	215.08	215.06	10/26/2002	R	739.48	BD	database
ER 5-4 #2	954.54	225.71	225.69	12/2/2002	R	728.85	BD	database
ER 5-4 #2	954.54	221.15	221.13	12/14/2002	--	733.42	BD	database
ER 5-4 #2	954.54	221.76	221.74	12/14/2002	--	732.81	BD	database
ER 5-4 #2	954.54	221.10	221.08	1/23/2003	Z	733.46	BD	database
ER 5-4 #2	954.54	212.32	212.30	2/7/2003	Z	742.24	BD	database
ER 5-4 #2	954.54	209.28	209.26	3/12/2003	--	745.29	BD	database
ER 5-4 #2	954.54	206.39	206.37	4/22/2003	Z	748.17	BD	database
ER 5-4 #2	954.54	206.34	206.32	4/24/2003	Z	748.22	BD	database
ER 5-4 #2	954.54	206.29	206.27	4/24/2003	Z	748.27	BD	database
ER 5-4 #2	954.54	202.17	202.15	9/13/2003	Z	752.39	BD	database

ER 5-4 #2  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-4 #2	954.54	201.97	201.95	9/29/2003	--	752.59	BD	database
ER 5-4 #2	954.54	201.44	201.42	11/20/2003	--	753.13	BD	database
ER 5-4 #2	954.54	200.69	200.67	3/11/2004	--	753.87	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

R = Site had been pumped recently.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

static water level could not be determined

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

Well ER 5-4 (main/composite)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER-5-4 (main/composite)	954.54	17.97	17.97	2/23/2001	C	936.58	BD	database
ER-5-4 (main/composite)	954.54	222.01	221.95	5/4/2001	--	732.59	BD	database
ER-5-4 (main/composite)	954.54	221.99	221.93	5/6/2001	--	732.61	BD	database
ER-5-4 (main/composite)	954.54	221.94	221.88	5/9/2001	--	732.66	BD	database
ER-5-4 (main/composite)	954.54	222.66	222.61	5/13/2001	--	731.94	BD	database
ER-5-4 (main/composite)	954.54	222.56	222.50	5/15/2001	--	732.04	BD	database
ER-5-4 (main/composite)	954.54	221.25	221.19	6/5/2001	Z	733.35	BD	database
ER-5-4 (main/composite)	954.54	224.93	224.88	6/18/2001	P	729.67	BD	database
ER-5-4 (main/composite)	954.54	223.45	223.39	6/21/2001	R	731.15	BD	database
ER-5-4 (main/composite)	954.54	221.79	221.73	7/10/2001	R	732.81	BD	database
ER-5-4 (main/composite)	954.54	221.10	221.04	1/15/2002	--	733.50	BD	database
ER-5-4 (main/composite)	954.54	221.23	221.17	2/21/2002	--	733.37	BD	database
ER-5-4 (main/composite)	954.54	221.15	221.09	3/12/2002	--	733.45	BD	database
ER-5-4 (main/composite)	954.54	220.99	220.93	7/30/2002	Z	733.61	BD	database
ER-5-4 (main/composite)	954.54	221.39	221.33	8/16/2002	Z	733.21	BD	database
ER-5-4 (main/composite)	954.54	221.10	221.05	10/9/2002	Z	733.50	BD	database
ER-5-4 (main/composite)	954.54	221.18	221.12	4/17/2003	Z	733.42	BD	database
ER-5-4 (main/composite)	954.54	221.16	221.10	4/17/2003	Z	733.44	BD	database
ER-5-4 (main/composite)	954.54	221.32	221.26	9/10/2003	Z	733.28	BD	database
ER-5-4 (main/composite)	954.54	221.32	221.26	9/10/2003	Z	733.28	BD	database
ER-5-4 (main/composite)	954.54	221.44	221.39	9/22/2003	Z	733.16	BD	database
ER-5-4 (main/composite)	954.54	221.45	221.39	9/23/2003	Z	733.15	BD	database
ER-5-4 (main/composite)	954.54	221.50	221.44	9/24/2003	Z	733.10	BD	database

Well ER 5-4 (main/composite)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER-5-4 (main/composite)	954.54	221.27	221.21	9/29/2003	--	733.33	BD	database
ER-5-4 (main/composite)	954.54	221.23	221.18	11/20/2003	--	733.37	BD	database
ER-5-4 (main/composite)	954.54	221.25	221.19	1/22/2004	--	733.35	BD	USGS website
ER-5-4 (main/composite)	954.54	221.17	221.12	3/11/2004	--	733.43	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

P = Site was being pumped.

R = Site had been pumped recently.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level** not applicable

used to determine contemporary static water level

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doe\\_nv/](http://nevada.usgs.gov/doe_nv/)

Well ER 5-4 (piezometer)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
ER 5-4 (piezometer)	954.54	161.95	161.91	5/4/2001	Z	792.63	BD	database
ER 5-4 (piezometer)	954.54	220.36	220.30	5/6/2001	--	734.24	BD	database
ER 5-4 (piezometer)	954.54	220.54	220.49	5/9/2001	--	734.05	BD	database
ER 5-4 (piezometer)	954.54	220.69	220.63	5/13/2001	--	733.91	BD	database
ER 5-4 (piezometer)	954.54	220.75	220.69	5/15/2001	--	733.85	BD	database
ER 5-4 (piezometer)	954.54	221.00	220.94	6/5/2001	--	733.60	BD	database
ER 5-4 (piezometer)	954.54	221.24	221.18	7/10/2001	R	733.36	BD	database
ER 5-4 (piezometer)	954.54	221.04	220.98	7/16/2001	--	733.56	BD	database
ER 5-4 (piezometer)	954.54	221.11	221.05	7/16/2001	R	733.49	BD	database
ER 5-4 (piezometer)	954.54	221.00	220.95	1/15/2002	--	733.59	BD	database
ER 5-4 (piezometer)	954.54	221.02	220.97	2/21/2002	--	733.58	BD	database
ER 5-4 (piezometer)	954.54	221.01	220.95	3/12/2002	--	733.59	BD	database
ER 5-4 (piezometer)	954.54	221.06	221.00	7/22/2002	Z	733.54	BD	database
ER 5-4 (piezometer)	954.54	220.92	220.86	10/9/2002	Z	733.68	BD	database
ER 5-4 (piezometer)	954.54	221.44	221.38	4/11/2003	Z	733.16	BD	database
ER 5-4 (piezometer)	954.54	221.84	221.78	9/12/2003	Z	732.76	BD	database
ER 5-4 (piezometer)	954.54	221.79	221.73	9/22/2003	Z	732.81	BD	database
ER 5-4 (piezometer)	954.54	221.52	221.47	9/29/2003	T	733.08	BD	database
ER 5-4 (piezometer)	954.54	221.19	221.13	11/20/2003	--	733.41	BD	database
ER 5-4 (piezometer)	954.54	221.07	221.01	1/22/2004	--	733.53	BD	USGS website
ER 5-4 (piezometer)	954.54	221.03	220.98	3/11/2004	--	733.57	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: R = Site had been pumped recently.

Well ER 5-4 (piezometer)  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

T = A nearby site that taps the same aquifer had been pumped recently.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level** not applicable

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

RNM-1  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
RNM-1	955.60	240.18	224.23	7/30/1975	--	<b>731.37</b>	BD	database
RNM-1	955.60	241.71	225.65	8/4/1975	--	729.95	BD	database
RNM-1	955.60	239.57	223.66	8/6/1975	--	<b>731.94</b>	BD	database
RNM-1	955.60	238.05	222.24	8/12/1975	--	733.36	BD	database
RNM-1	955.60	240.18	224.23	8/15/1975	--	<b>731.37</b>	BD	database
RNM-1	955.60	240.38	224.42	12/7/1976	--	<b>731.18</b>	BD	database
RNM-1	955.60	240.49	224.51	7/8/1977	--	<b>731.09</b>	BD	database
RNM-1	955.60	240.68	224.70	2/13/2003	--	<b>730.90</b>	BD	database
RNM-1	955.60	240.85	224.85	4/11/2003	Z	730.75	BD	database
RNM-1	955.60	241.04	225.03	9/12/2003	Z	730.56	BD	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level***

**used to determine historical static water level** not applicable

**used to determine contemporary static water level** not applicable

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

Well RNM-2  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
RNM-2	953.66	219.46	--	3/13/1974	C	734.20	none	database
RNM-2	953.66	219.46	--	3/20/1974	C	734.20	none	database
RNM-2	953.66	219.76	--	5/22/1974	C	733.90	none	database
RNM-2	953.66	220.37	--	8/1/1974	C	733.29	none	database
RNM-2	953.66	220.14	--	7/12/1976	--	733.51	none	database
RNM-2	953.66	221.52	--	7/20/1976	--	732.14	none	database
RNM-2	953.66	220.76	--	8/19/1976	--	732.89	none	database
RNM-2	953.66	221.04	--	12/6/1976	--	732.61	none	database
RNM-2	953.66	220.46	--	3/22/1980	--	733.20	none	database
RNM-2	953.66	220.46	--	3/22/1980	--	733.19	none	database
RNM-2	953.66	221.83	--	3/19/1985	--	731.83	none	database
RNM-2	953.66	220.08	--	4/21/2003	Z <sup>f</sup>	<b>733.58</b>	none	database
RNM-2	953.66	220.32	--	9/12/2003	Z	733.33	none	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level***

**used to determine historical static water level** not applicable

**used to determine contemporary static water level** not applicable

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

<sup>f</sup>measurement performed prior to transducer installation, measurement assumed to represent undisturbed conditions

Well RNM-2s  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
RNM-2s	954.16	219.56	--	8/2/1974	--	734.60	none	database
RNM-2s	954.16	221.12	--	3/21/1980	--	733.04	none	database
RNM-2s	954.16	221.32	--	6/13/1980	--	732.84	none	database
RNM-2s	954.16	221.96	--	9/27/1990	--	732.21	none	database
RNM-2s	954.16	222.02	--	10/3/1990	--	732.14	none	database
RNM-2s	954.16	221.92	--	10/12/1990	--	732.24	none	database
RNM-2s	954.16	221.77	--	10/19/1990	--	732.39	none	database
RNM-2s	954.16	221.74	--	10/26/1990	--	732.42	none	database
RNM-2s	954.16	221.38	--	11/2/1990	--	732.78	none	database
RNM-2s	954.16	221.32	--	11/15/1990	--	732.85	none	database
RNM-2s	954.16	--	--	12/12/1990	P	--	--	database
RNM-2s	954.16	224.88	--	1/10/1991	--	729.28	none	database
RNM-2s	954.16	221.47	--	1/16/1991	--	732.69	none	database
RNM-2s	954.16	221.41	--	1/24/1991	--	732.75	none	database
RNM-2s	954.16	--	--	2/5/1991	P	--	--	database
RNM-2s	954.16	--	--	2/21/1991	P	--	--	database
RNM-2s	954.16	--	--	4/11/1991	P	--	--	database
RNM-2s	954.16	--	--	4/26/1991	P	--	--	database
RNM-2s	954.16	221.83	--	5/6/1991	R	732.33	none	database
RNM-2s	954.16	--	--	5/17/1991	P	--	--	database
RNM-2s	954.16	--	--	5/29/1991	P	--	--	database
RNM-2s	954.16	--	--	6/25/1991	P	--	--	database
RNM-2s	954.16	--	--	7/9/1991	P	--	--	database
RNM-2s	954.16	--	--	8/16/1991	P	--	--	database
RNM-2s	954.16	--	--	8/28/1991	P	--	--	database
RNM-2s	954.16	221.53	--	9/27/1991	--	732.63	none	database
RNM-2s	954.16	221.38	--	10/21/1991	--	732.78	none	database
RNM-2s	954.16	221.80	--	11/20/1991	--	732.36	none	database
RNM-2s	954.16	221.16	--	12/11/1991	--	733.00	none	database
RNM-2s	954.16	221.07	--	1/17/1992	--	733.09	none	database
RNM-2s	954.16	221.10	--	2/11/1992	--	733.06	none	database
RNM-2s	954.16	221.07	--	3/12/1992	--	733.09	none	database
RNM-2s	954.16	220.98	--	4/14/1992	--	733.18	none	database
RNM-2s	954.16	220.95	--	5/11/1992	--	733.21	none	database
RNM-2s	954.16	220.92	--	6/15/1992	--	733.24	none	database
RNM-2s	954.16	220.89	--	7/13/1992	--	733.27	none	database
RNM-2s	954.16	220.86	--	8/11/1992	--	733.30	none	database
RNM-2s	954.16	220.83	--	9/17/1992	--	733.33	none	database
RNM-2s	954.16	220.77	--	10/14/1992	--	733.39	none	database

Well RNM-2s  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
RNM-2s	954.16	220.83	--	11/24/1992	--	733.33	none	database
RNM-2s	954.16	220.80	--	1/21/1993	--	733.36	none	database
RNM-2s	954.16	220.64	--	2/24/1993	--	733.52	none	database
RNM-2s	954.16	220.68	--	3/17/1993	--	733.49	none	database
RNM-2s	954.16	220.74	--	4/6/1993	--	733.43	none	database
RNM-2s	954.16	220.55	--	6/28/1993	--	733.61	none	database
RNM-2s	954.16	220.60	--	7/29/1993	--	733.56	none	database
RNM-2s	954.16	221.11	--	12/20/1993	--	733.05	none	database
RNM-2s	954.16	220.49	--	2/2/1994	--	733.67	none	database
RNM-2s	954.16	220.49	--	5/17/1994	--	733.67	none	database
RNM-2s	954.16	220.49	--	7/26/1994	--	733.67	none	database
RNM-2s	954.16	220.54	--	11/21/1994	--	733.62	none	database
RNM-2s	954.16	220.54	--	3/30/1995	--	733.62	none	database
RNM-2s	954.16	220.53	--	6/19/1995	--	733.64	none	database
RNM-2s	954.16	220.52	--	1/8/1996	--	733.64	none	database
RNM-2s	954.16	220.49	--	8/21/1997	--	733.67	none	database
RNM-2s	954.16	220.48	--	10/21/1998	--	733.68	none	database
RNM-2s	954.16	220.39	--	4/28/1999	--	733.78	none	database
RNM-2s	954.16	220.67	--	7/10/2000	--	733.49	none	database
RNM-2s	954.16	220.52	--	10/25/2000	--	733.64	none	database
RNM-2s	954.16	220.49	--	4/4/2001	--	733.67	none	database
RNM-2s	954.16	220.52	--	7/12/2001	--	733.64	none	database
RNM-2s	954.16	220.49	--	9/26/2001	--	733.67	none	database
RNM-2s	954.16	220.44	--	12/27/2001	--	733.72	none	database
RNM-2s	954.16	220.50	--	3/11/2002	--	733.66	none	database
RNM-2s	954.16	220.49	--	7/25/2002	--	733.67	none	database
RNM-2s	954.16	220.44	--	9/10/2002	--	733.72	none	database
RNM-2s	954.16	220.53	--	12/30/2002	--	733.64	none	database
RNM-2s	954.16	220.49	--	3/10/2003	--	733.67	none	database
RNM-2s	954.16	220.76	--	9/25/2003	R	733.40	none	database
RNM-2s	954.16	220.64	--	11/20/2003	--	733.52	none	database
RNM-2s	954.16	264.65	--	6/6/2003	Z	689.51	none	database
RNM-2s	954.16	220.84	--	9/12/2003	Z	733.32	none	database
RNM-2s	954.16	220.61	--	2/18/2003	--	733.55	none	database
RNM-2s	954.16	207.17	--	2/18/2003	Z	746.99	none	database
RNM-2s	954.16	220.53	--	4/12/2003	Z	733.64	none	database
RNM-2s	954.16	--	--	2/18/2003	O	--	none	database
RNM-2s	954.16	220.61	--	2/18/2003	--	733.55	none	database
RNM-2s	954.16	220.54	--	4/18/2003	Z	733.62	none	database

Well RNM-2s  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
RNM-2s	954.16	225.20	--	9/12/2003	Z	728.96	none	database
RNM-2s	954.16	220.61	--	3/11/2004	--	733.56	none	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: O = An obstruction was encountered in the well above the water surface (no water level recorded).

P = Site was being pumped.

R = Site had been pumped recently.

Z = "Other conditions at the well may have affected the water level measurement" (SNJV 2004).

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level**

used to determine contemporary static water level

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doe\\_nv/](http://nevada.usgs.gov/doe_nv/)

SM-23-1  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
SM-23-1	1079.91	355.00	--	6/27/1996	--	724.91	none	USGS website
SM-23-1	1079.91	355.01	--	6/27/1996	--	724.90	none	USGS website
SM-23-1	1079.91	354.99	--	7/17/1996	--	724.92	none	USGS website
SM-23-1	1079.91	355.00	--	10/22/1996	--	724.91	none	USGS website
SM-23-1	1079.91	355.02	--	10/31/1996	--	724.89	none	USGS website
SM-23-1	1079.91	355.10	--	11/7/1996	--	724.81	none	USGS website
SM-23-1	1079.91	354.99	--	12/10/1996	--	724.92	none	USGS website
SM-23-1	1079.91	355.00	--	1/8/1997	--	724.91	none	USGS website
SM-23-1	1079.91	354.95	--	2/4/1997	--	724.96	none	USGS website
SM-23-1	1079.91	354.90	--	3/3/1997	--	725.01	none	USGS website
SM-23-1	1079.91	355.00	--	4/7/1997	--	724.91	none	USGS website
SM-23-1	1079.91	354.93	--	5/1/1997	--	724.98	none	USGS website
SM-23-1	1079.91	354.94	--	6/3/1997	--	724.97	none	USGS website
SM-23-1	1079.91	354.95	--	7/9/1997	--	724.96	none	USGS website
SM-23-1	1079.91	354.98	--	7/28/1997	--	724.93	none	USGS website
SM-23-1	1079.91	354.95	--	9/29/1997	--	724.96	none	USGS website
SM-23-1	1079.91	354.95	--	10/21/1997	--	724.96	none	USGS website
SM-23-1	1079.91	354.95	--	12/15/1997	--	724.96	none	USGS website
SM-23-1	1079.91	355.02	--	2/18/1998	--	724.89	none	USGS website
SM-23-1	1079.91	354.94	--	6/18/1998	--	724.97	none	USGS website
SM-23-1	1079.91	354.86	--	9/29/1998	--	725.05	none	USGS website
SM-23-1	1079.91	354.86	--	12/14/1998	--	725.05	none	USGS website
SM-23-1	1079.91	354.87	--	3/17/1999	--	725.04	none	USGS website
SM-23-1	1079.91	354.87	--	6/30/1999	--	725.04	none	USGS website
SM-23-1	1079.91	354.88	--	9/16/1999	--	725.03	none	USGS website
SM-23-1	1079.91	354.96	--	12/8/1999	--	724.95	none	USGS website
SM-23-1	1079.91	354.90	--	4/5/2000	--	725.01	none	USGS website
SM-23-1	1079.91	354.90	--	10/3/2000	--	725.01	none	USGS website
SM-23-1	1079.91	354.87	--	12/7/2000	--	725.04	none	USGS website
SM-23-1	1079.91	354.88	--	9/27/2001	--	725.03	none	USGS website
SM-23-1	1079.91	355.00	--	12/13/2001	--	724.91	none	USGS website
SM-23-1	1079.91	354.81	--	3/13/2002	--	725.10	none	USGS website
SM-23-1	1079.91	354.92	--	7/29/2002	--	724.99	none	USGS website
SM-23-1	1079.91	354.89	--	9/11/2002	--	725.02	none	USGS website
SM-23-1	1079.91	354.89	--	12/31/2002	--	725.02	none	USGS website
SM-23-1	1079.91	354.92	--	3/20/2003	--	724.99	none	USGS website
SM-23-1	1079.91	354.92	--	6/24/2003	--	724.99	none	USGS website
SM-23-1	1079.91	354.90	--	9/29/2003	--	725.01	none	USGS website
SM-23-1	1079.91	354.91	--	11/24/2003	--	725.00	none	USGS website
SM-23-1	1079.91	354.92	--	3/11/2004	--	724.99	none	USGS website

SM-23-1  
Water Level Data

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level** not applicable

used to determine contemporary static water level

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

Well TW-3  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
TW-3	1061.96	336.22	--	5/9/1962	C	725.73	none	database
TW-3	1061.96	335.95	--	5/10/1962	C	726.01	none	database
TW-3	1061.96	336.32	--	1/25/1963	--	<b>725.64</b>	none	database
TW-3	1061.96	336.07	--	12/12/1963	--	<b>725.89</b>	none	database
TW-3	1061.96	336.22	--	3/20/1971	--	<b>725.73</b>	none	database
TW-3	1061.96	336.10	--	10/27/1971	--	<b>725.86</b>	none	database
TW-3	1061.96	336.35	--	7/27/1972	--	<b>725.61</b>	none	database
TW-3	1061.96	336.71	--	1/27/1973	--	<b>725.25</b>	none	database
TW-3	1061.96	336.71	--	8/22/1978	--	<b>725.25</b>	none	database
TW-3	1061.96	336.38	--	1/11/1980	--	<b>725.58</b>	none	database
TW-3	1061.96	335.83	--	6/9/1990	--	<b>726.13</b>	none	database
TW-3	1061.96	336.26	--	11/16/1990	--	<b>725.70</b>	none	database
TW-3	1061.96	336.26	--	4/26/1991	--	<b>725.70</b>	none	database
TW-3	1061.96	336.32	--	9/27/1991	--	<b>725.64</b>	none	database
TW-3	1061.96	336.35	--	5/11/1992	--	<b>725.61</b>	none	database
TW-3	1061.96	336.52	--	1/19/1994	--	<b>725.44</b>	none	database
TW-3	1061.96	336.54	--	5/16/1994	--	<b>725.42</b>	none	database
TW-3	1061.96	336.54	--	11/21/1994	--	<b>725.42</b>	none	database
TW-3	1061.96	336.61	--	6/19/1995	--	<b>725.35</b>	none	database
TW-3	1061.96	336.63	--	1/4/1996	--	<b>725.33</b>	none	database
TW-3	1061.96	336.62	--	7/29/1996	--	<b>725.34</b>	none	database
TW-3	1061.96	336.61	--	8/21/1997	--	<b>725.35</b>	none	database
TW-3	1061.96	336.60	--	3/9/1998	--	<b>725.36</b>	none	database
TW-3	1061.96	336.86	--	4/28/1999	--	<b>725.10</b>	none	database
TW-3	1061.96	336.52	--	11/15/1999	--	<b>725.44</b>	none	database
TW-3	1061.96	336.64	--	7/10/2000	--	<b>725.32</b>	none	database
TW-3	1061.96	336.53	--	10/25/2000	--	<b>725.43</b>	none	database
TW-3	1061.96	336.44	--	1/22/2002	--	<b>725.52</b>	none	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level**

used to determine historical static water level | not applicable

used to determine contemporary static water level | not applicable

<sup>d</sup>Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

TW-F  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
TW-F	1262.69	529.10	532.31	6/28/1962	--	730.38	BD, WT	database
TW-F	1262.69	529.13	532.34	6/28/1962	--	730.35	BD, WT	database
TW-F	1262.69	529.10	532.31	6/28/1962	--	730.38	BD, WT	database
TW-F	1262.69	528.86	532.07	8/7/1962	--	730.62	BD, WT	database
TW-F	1262.69	528.92	532.13	8/11/1962	--	730.56	BD, WT	database
TW-F	1262.69	528.71	531.92	1/24/1963	--	730.77	BD, WT	database
TW-F	1262.69	528.71	531.92	1/24/1963	--	730.77	BD, WT	database
TW-F	1262.69	528.71	531.92	1/24/1963	--	730.77	BD, WT	database
TW-F	1262.69	528.95	532.16	12/17/1963	--	730.53	BD, WT	database
TW-F	1262.69	528.71	531.92	1/28/1965	--	730.77	BD, WT	database
TW-F	1262.69	529.38	532.59	10/27/1971	--	730.11	BD, WT	database
TW-F	1262.69	529.47	532.68	8/12/1972	--	730.02	BD, WT	database
TW-F	1262.69	529.44	532.65	1/23/1973	--	<b>730.05</b>	BD, WT	database
TW-F	1262.69	529.01	532.22	1/15/1980	--	<b>730.47</b>	BD, WT	database
TW-F	1262.69	528.92	532.13	3/27/1980	--	<b>730.56</b>	BD, WT	database
TW-F	1262.69	528.49	531.71	1/14/1986	--	730.98	BD, WT	database
TW-F	1262.69	528.46	531.68	7/2/1987	--	731.02	BD, WT	database
TW-F	1262.69	529.01	532.22	3/30/1988	--	<b>730.47</b>	BD, WT	database
TW-F	1262.69	528.86	532.07	12/22/1988	--	<b>730.62</b>	BD, WT	database
TW-F	1262.69	528.77	531.98	7/20/1989	--	730.71	BD, WT	database
TW-F	1262.69	528.86	532.07	10/26/1989	--	<b>730.62</b>	BD, WT	database
TW-F	1262.69	528.68	531.89	5/2/1990	--	<b>730.80</b>	BD, WT	database
TW-F	1262.69	528.71	531.92	4/26/1991	--	<b>730.77</b>	BD, WT	database
TW-F	1262.69	528.68	531.89	9/27/1991	--	<b>730.80</b>	BD, WT	database
TW-F	1262.69	529.04	532.25	5/11/1992	--	<b>730.44</b>	BD, WT	database
TW-F	1262.69	529.32	532.53	7/21/1993	--	<b>730.17</b>	BD, WT	database
TW-F	1262.69	529.38	532.59	1/19/1994	--	730.11	BD, WT	database
TW-F	1262.69	529.25	532.47	5/17/1994	--	730.23	BD, WT	database
TW-F	1262.69	529.38	532.59	11/21/1994	--	730.11	BD, WT	database
TW-F	1262.69	529.41	532.62	6/29/1995	--	730.08	BD, WT	database
TW-F	1262.69	529.19	532.41	7/30/1996	--	730.29	BD, WT	database
TW-F	1262.69	529.07	532.28	8/21/1997	--	730.41	BD, WT	database
TW-F	1262.69	528.98	532.19	3/5/1998	--	730.50	BD, WT	database
TW-F	1262.69	529.01	532.22	12/1/1998	--	730.47	BD, WT	database
TW-F	1262.69	528.95	532.16	5/27/1999	--	<b>730.53</b>	BD, WT	database
TW-F	1262.69	528.75	531.96	11/17/1999	--	<b>730.73</b>	BD, WT	database
TW-F	1262.69	529.14	532.35	7/12/2000	--	<b>730.34</b>	BD, WT	database
TW-F	1262.69	528.98	532.19	10/26/2000	--	<b>730.50</b>	BD, WT	database
TW-F	1262.69	529.01	532.23	10/24/2001	--	<b>730.47</b>	BD, WT	database

TW-F  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
TW-F	1262.69	529.00	532.21	7/23/2002	--	<b>730.48</b>	BD, WT	database
TW-F	1262.69	529.08	532.30	12/9/2002	--	<b>730.40</b>	BD, WT	database
TW-F	1262.69	529.00	532.21	3/11/2003	--	<b>730.49</b>	BD, WT	database
TW-F	1262.69	529.03	532.24	6/25/2003	--	<b>730.45</b>	BD, WT	database
TW-F	1262.69	528.97	532.19	7/14/2003	--	<b>730.51</b>	BD, WT	database
TW-F	1262.69	528.97	532.19	7/14/2003	--	<b>730.51</b>	BD, WT	database
TW-F	1262.69	528.95	532.17	10/2/2003	--	<b>730.53</b>	BD, WT	database
TW-F	1262.69	528.98	532.20	1/12/2004	--	<b>730.50</b>	BD, WT	database
TW-F	1262.69	528.83	532.04	4/1/2004	--	<b>730.65</b>	BD, WT	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level**

used to determine historical static water level not applicable

used to determine contemporary static water level not applicable

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

WT = water level corrected for water temperature

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

UE-5 PW-1  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-1	968.73	235.09	235.01	3/2/1993	--	733.72	BD	database
UE-5 PW-1	968.73	235.00	234.92	3/17/1993	--	733.81	BD	database
UE-5 PW-1	968.73	234.99	234.91	3/22/1993	--	733.82	BD	Bechtel
UE-5 PW-1	968.73	234.96	234.88	3/23/1993	--	733.85	BD	Bechtel
UE-5 PW-1	968.73	234.97	234.89	3/24/1993	--	733.84	BD	Bechtel
UE-5 PW-1	968.73	234.96	234.88	3/25/1993	--	733.85	BD	Bechtel
UE-5 PW-1	968.73	235.00	234.91	3/29/1993	--	733.81	BD	database
UE-5 PW-1	968.73	235.03	234.95	3/29/1993	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	235.06	234.98	3/30/1993	--	733.75	BD	Bechtel
UE-5 PW-1	968.73	235.06	234.98	3/31/1993	--	733.75	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	4/1/1993	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	234.95	234.87	4/5/1993	--	733.86	BD	Bechtel
UE-5 PW-1	968.73	235.06	234.98	4/6/1993	--	733.75	BD	database
UE-5 PW-1	968.73	235.03	234.95	4/6/1993	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	235.08	235.00	5/10/1993	--	733.73	BD	Bechtel
UE-5 PW-1	968.73	235.00	234.92	5/11/1993	--	733.81	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	5/12/1993	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	235.05	234.97	5/13/1993	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	235.05	234.97	5/17/1993	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	5/18/1993	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	5/19/1993	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	5/20/1993	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	235.04	234.96	5/24/1993	--	733.77	BD	Bechtel
UE-5 PW-1	968.73	235.05	234.97	5/25/1993	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	235.02	234.94	6/1/1993	--	733.79	BD	Bechtel
UE-5 PW-1	968.73	235.08	235.00	6/7/1993	--	733.73	BD	Bechtel
UE-5 PW-1	968.73	235.05	234.97	6/14/1993	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	235.02	234.94	6/21/1993	--	733.79	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	7/26/1993	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	8/3/1993	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	235.06	234.98	8/9/1993	--	733.75	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	8/16/1993	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	235.02	234.94	8/30/1993	--	733.79	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	12/28/1993	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	235.01	234.93	1/3/1994	--	733.80	BD	Bechtel
UE-5 PW-1	968.73	234.97	234.89	2/2/1994	--	733.84	BD	Bechtel
UE-5 PW-1	968.73	235.04	234.96	2/22/1994	--	733.77	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	2/28/1994	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	3/7/1994	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	234.99	234.91	3/14/1994	--	733.82	BD	Bechtel
UE-5 PW-1	968.73	235.00	234.92	3/21/1994	--	733.81	BD	Bechtel

UE-5 PW-1  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-1	968.73	235.07	234.99	3/28/1994	--	733.74	BD	Bechtel
UE-5 PW-1	968.73	234.96	234.88	4/4/1994	--	733.85	BD	Bechtel
UE-5 PW-1	968.73	234.99	234.91	4/13/1994	--	733.82	BD	Bechtel
UE-5 PW-1	968.73	234.95	234.87	4/20/1994	--	733.86	BD	Bechtel
UE-5 PW-1	968.73	234.99	234.91	4/26/1994	--	733.82	BD	Bechtel
UE-5 PW-1	968.73	235.06	234.98	1/18/1995	--	733.75	BD	Bechtel
UE-5 PW-1	968.73	235.01	234.93	4/3/1995	--	733.80	BD	Bechtel
UE-5 PW-1	968.73	234.80	234.72	1/16/1996	--	734.01	BD	Bechtel
UE-5 PW-1	968.73	235.00	234.92	4/15/1996	--	733.81	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	10/1/1996	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	11/19/1996	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	3/3/1997	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	235.07	234.99	4/15/1997	--	733.74	BD	Bechtel
UE-5 PW-1	968.73	235.05	234.97	6/18/1997	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	235.04	234.96	7/28/1997	--	733.77	BD	Bechtel
UE-5 PW-1	968.73	234.96	234.88	8/20/1997	--	733.85	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	9/25/1997	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	235.01	234.93	10/27/1997	--	733.80	BD	Bechtel
UE-5 PW-1	968.73	235.09	235.01	11/3/1997	--	733.72	BD	Bechtel
UE-5 PW-1	968.73	235.01	234.93	11/6/1997	--	733.80	BD	Bechtel
UE-5 PW-1	968.73	235.10	235.02	11/12/1997	--	733.71	BD	Bechtel
UE-5 PW-1	968.73	235.04	234.96	11/13/1997	--	733.77	BD	Bechtel
UE-5 PW-1	968.73	235.07	234.99	11/19/1997	--	733.74	BD	Bechtel
UE-5 PW-1	968.73	235.09	235.01	11/20/1997	--	733.72	BD	Bechtel
UE-5 PW-1	968.73	235.08	235.00	11/25/1997	--	733.73	BD	Bechtel
UE-5 PW-1	968.73	234.94	234.86	11/26/1997	--	733.87	BD	Bechtel
UE-5 PW-1	968.73	235.15	235.07	12/3/1997	--	733.66	BD	Bechtel
UE-5 PW-1	968.73	235.16	235.08	1/26/1998	--	733.65	BD	Bechtel
UE-5 PW-1	968.73	235.04	234.96	5/12/1998	--	733.77	BD	Bechtel
UE-5 PW-1	968.73	234.96	234.88	10/27/1998	--	733.85	BD	Bechtel
UE-5 PW-1	968.73	234.98	234.90	12/22/1998	--	733.83	BD	Bechtel
UE-5 PW-1	968.73	235.05	234.97	2/2/1999	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	235.00	234.92	5/18/1999	--	733.81	BD	Bechtel
UE-5 PW-1	968.73	235.00	234.92	8/25/1999	--	733.81	BD	Bechtel
UE-5 PW-1	968.73	235.01	234.93	10/26/1999	--	733.80	BD	Bechtel
UE-5 PW-1	968.73	235.08	235.00	4/24/2000	--	733.73	BD	Bechtel
UE-5 PW-1	968.73	235.03	234.95	8/7/2000	--	733.78	BD	Bechtel
UE-5 PW-1	968.73	235.10	235.02	11/13/2000	--	733.71	BD	Bechtel
UE-5 PW-1	968.73	235.01	234.93	2/22/2001	--	733.80	BD	Bechtel
UE-5 PW-1	968.73	235.11	235.03	5/21/2001	--	733.70	BD	Bechtel
UE-5 PW-1	968.73	235.10	235.02	8/1/2001	--	733.71	BD	Bechtel

UE-5 PW-1  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-1	968.73	235.10	235.02	10/1/2001	--	733.71	BD	Bechtel
UE-5 PW-1	968.73	--	--	2/26/2002	--	733.45	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.20	235.12	2/26/2002	--	733.61	BD	Bechtel
UE-5 PW-1	968.73	--	--	5/13/2002	--	733.56	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.09	235.01	5/13/2002	--	733.72	BD	Bechtel
UE-5 PW-1	968.73	--	--	8/19/2002	--	733.59	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.05	234.97	8/19/2002	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	--	--	10/21/2002	--	733.59	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.05	234.97	10/21/2002	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	--	--	2/26/2003	--	733.56	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.09	235.01	2/26/2003	--	733.72	BD	Bechtel
UE-5 PW-1	968.73	--	--	4/10/2003	--	733.60	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.05	234.97	4/10/2003	--	733.76	BD	Bechtel
UE-5 PW-1	968.73	--	--	9/10/2003	--	733.47	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.18	235.10	9/10/2003	--	733.63	BD	Bechtel
UE-5 PW-1	968.73	--	--	10/20/2003	--	733.48	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.17	235.09	10/20/2003	--	733.64	BD	Bechtel
UE-5 PW-1	968.73	--	--	2/25/2004	--	733.43	BD	RNM-2s MWAT
UE-5 PW-1	968.73	235.22	235.14	2/25/2004	--	733.59	BD	Bechtel

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not Applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level** not applicable

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

RNM-2s MWAT = Integrated Data Report for the RNM-2s Multi-Well Aquifer Test at Frenchman Flat, Nevada Test Site, Nevada (SNJV, 2004) (corrected water-level elevation given)

Bechtel = personal communication from Fred Nawrocki with Bechtel Nevada

UE-5 PW-2  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-2	989.54	256.15	255.95	3/2/1993	--	733.59	BD	database
UE-5 PW-2	989.54	256.01	255.81	3/22/1993	--	733.73	BD	Bechtel
UE-5 PW-2	989.54	256.11	255.91	3/23/1993	--	733.63	BD	Bechtel
UE-5 PW-2	989.54	255.99	255.79	3/24/1993	--	733.75	BD	Bechtel
UE-5 PW-2	989.54	255.98	255.78	3/25/1993	--	733.76	BD	Bechtel
UE-5 PW-2	989.54	255.96	255.75	3/29/1993	--	733.79	BD	database
UE-5 PW-2	989.54	256.01	255.81	3/29/1993	--	733.73	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	3/30/1993	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.07	255.87	3/31/1993	--	733.67	BD	Bechtel
UE-5 PW-2	989.54	256.00	255.80	4/1/1993	--	733.74	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.77	4/5/1993	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	4/6/1993	--	733.68	BD	database
UE-5 PW-2	989.54	256.03	255.83	4/6/1993	--	733.71	BD	Bechtel
UE-5 PW-2	989.54	256.09	255.89	5/10/1993	--	733.65	BD	Bechtel
UE-5 PW-2	989.54	256.04	255.84	5/11/1993	--	733.70	BD	Bechtel
UE-5 PW-2	989.54	256.03	255.83	5/12/1993	--	733.71	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	5/13/1993	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	5/17/1993	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	256.07	255.87	5/18/1993	--	733.67	BD	Bechtel
UE-5 PW-2	989.54	256.07	255.87	5/19/1993	--	733.67	BD	Bechtel
UE-5 PW-2	989.54	256.02	255.82	5/20/1993	--	733.72	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	5/24/1993	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	5/25/1993	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	6/1/1993	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	6/7/1993	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	6/14/1993	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	6/21/1993	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	7/26/1993	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	256.05	255.85	8/3/1993	--	733.69	BD	Bechtel
UE-5 PW-2	989.54	256.09	255.88	8/9/1993	--	733.65	BD	Bechtel
UE-5 PW-2	989.54	256.05	255.85	8/16/1993	--	733.69	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	8/30/1993	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.10	255.90	12/28/1993	--	733.64	BD	Bechtel
UE-5 PW-2	989.54	256.07	255.87	1/3/1994	--	733.67	BD	Bechtel
UE-5 PW-2	989.54	256.07	255.87	2/2/1994	--	733.67	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	2/22/1994	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.07	255.87	2/28/1994	--	733.67	BD	Bechtel
UE-5 PW-2	989.54	256.01	255.81	3/7/1994	--	733.73	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	3/14/1994	--	733.66	BD	Bechtel

UE-5 PW-2  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-2	989.54	256.00	255.80	3/21/1994	--	733.74	BD	Bechtel
UE-5 PW-2	989.54	256.10	255.90	3/28/1994	--	733.64	BD	Bechtel
UE-5 PW-2	989.54	256.03	255.83	4/4/1994	--	733.71	BD	Bechtel
UE-5 PW-2	989.54	256.05	255.85	4/13/1994	--	733.69	BD	Bechtel
UE-5 PW-2	989.54	256.00	255.80	4/20/1994	--	733.74	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.77	4/26/1994	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	1/18/1995	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	256.02	255.82	4/3/1995	--	733.72	BD	Bechtel
UE-5 PW-2	989.54	255.76	255.56	1/16/1996	--	733.98	BD	Bechtel
UE-5 PW-2	989.54	255.93	255.73	4/15/1996	--	733.81	BD	Bechtel
UE-5 PW-2	989.54	255.95	255.75	10/1/1996	--	733.79	BD	Bechtel
UE-5 PW-2	989.54	255.96	255.76	11/19/1996	--	733.78	BD	Bechtel
UE-5 PW-2	989.54	255.93	255.73	3/3/1997	--	733.81	BD	Bechtel
UE-5 PW-2	989.54	256.03	255.83	4/15/1997	--	733.71	BD	Bechtel
UE-5 PW-2	989.54	256.03	255.83	6/18/1997	--	733.71	BD	Bechtel
UE-5 PW-2	989.54	256.00	255.80	7/28/1997	--	733.74	BD	Bechtel
UE-5 PW-2	989.54	255.92	255.72	8/20/1997	--	733.82	BD	Bechtel
UE-5 PW-2	989.54	255.98	255.78	9/25/1997	--	733.76	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.77	10/27/1997	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	256.03	255.83	11/3/1997	--	733.71	BD	Bechtel
UE-5 PW-2	989.54	255.99	255.79	11/6/1997	--	733.75	BD	Bechtel
UE-5 PW-2	989.54	256.08	255.88	11/12/1997	--	733.66	BD	Bechtel
UE-5 PW-2	989.54	255.92	255.72	11/13/1997	--	733.82	BD	Bechtel
UE-5 PW-2	989.54	256.05	255.85	11/19/1997	--	733.69	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	11/20/1997	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.01	255.81	11/25/1997	--	733.73	BD	Bechtel
UE-5 PW-2	989.54	255.90	255.70	11/26/1997	--	733.84	BD	Bechtel
UE-5 PW-2	989.54	256.06	255.86	12/3/1997	--	733.68	BD	Bechtel
UE-5 PW-2	989.54	256.10	255.90	1/26/1998	--	733.64	BD	Bechtel
UE-5 PW-2	989.54	255.95	255.75	5/12/1998	--	733.79	BD	Bechtel
UE-5 PW-2	989.54	255.84	255.64	10/27/1998	--	733.90	BD	Bechtel
UE-5 PW-2	989.54	255.82	255.62	12/22/1998	--	733.92	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.76	2/2/1999	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	255.89	255.69	5/18/1999	--	733.85	BD	Bechtel
UE-5 PW-2	989.54	255.89	255.69	8/25/1999	--	733.85	BD	Bechtel
UE-5 PW-2	989.54	255.89	255.69	10/26/1999	--	733.85	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.77	4/24/2000	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	255.93	255.73	8/7/2000	--	733.81	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.77	11/13/2000	--	733.77	BD	Bechtel

UE-5 PW-2  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-2	989.54	255.89	255.69	2/22/2001	--	733.85	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.77	5/21/2001	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	255.99	255.79	8/1/2001	--	733.75	BD	Bechtel
UE-5 PW-2	989.54	255.97	255.77	10/1/2001	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	--	--	2/26/2002	--	733.28	BD	RNM-2s MWAT
UE-5 PW-2	989.54	256.05	255.85	2/26/2002	--	733.69	BD	Bechtel
UE-5 PW-2	989.54	--	--	5/13/2002	--	733.32	BD	RNM-2s MWAT
UE-5 PW-2	989.54	256.01	255.81	5/13/2002	--	733.73	BD	Bechtel
UE-5 PW-2	989.54	--	--	8/19/2002	--	733.43	BD	RNM-2s MWAT
UE-5 PW-2	989.54	255.91	255.71	8/19/2002	--	733.83	BD	Bechtel
UE-5 PW-2	989.54	--	--	10/21/2002	--	733.40	BD	RNM-2s MWAT
UE-5 PW-2	989.54	255.94	255.74	10/21/2002	--	733.80	BD	Bechtel
UE-5 PW-2	989.54	--	--	2/26/2003	--	733.43	BD	RNM-2s MWAT
UE-5 PW-2	989.54	255.90	255.70	2/26/2003	--	733.84	BD	Bechtel
UE-5 PW-2	989.54	--	--	4/10/2003	--	733.40	BD	RNM-2s MWAT
UE-5 PW-2	989.54	255.93	255.73	4/10/2003	--	733.81	BD	Bechtel
UE-5 PW-2	989.54	--	--	9/10/2003	--	733.36	BD	RNM-2s MWAT
UE-5 PW-2	989.54	255.97	255.77	9/10/2003	--	733.77	BD	Bechtel
UE-5 PW-2	989.54	--	--	10/20/2003	--	733.29	BD	RNM-2s MWAT
UE-5 PW-2	989.54	256.04	255.84	10/20/2003	--	733.70	BD	Bechtel
UE-5 PW-2	989.54	--	--	2/25/2004	--	733.35	BD	RNM-2s MWAT
UE-5 PW-2	989.54	255.99	255.79	2/25/2004	--	733.75	BD	Bechtel

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not Applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level** not applicable

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

RNM-2s MWAT = Integrated Data Report for the RNM-2s Multi-Well Aquifer Test at Frenchman Flat, Nevada Test Site, Nevada (SNJV, 2004) (corrected water-level elevation given)

Bechtel = personal communication from Fred Nawrocki with Bechtel Nevada

Well UE-5 PW-3  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-3	1004.50	271.09	271.07	3/2/1993	--	733.43	BD	database
UE-5 PW-3	1004.50	271.03	271.01	3/17/1993	--	733.50	BD	database
UE-5 PW-3	1004.50	270.99	270.97	3/22/1993	--	733.53	BD	Bechtel
UE-5 PW-3	1004.50	270.98	270.96	3/23/1993	--	733.54	BD	Bechtel
UE-5 PW-3	1004.50	270.99	270.97	3/24/1993	--	733.53	BD	Bechtel
UE-5 PW-3	1004.50	270.99	270.97	3/25/1993	--	733.53	BD	Bechtel
UE-5 PW-3	1004.50	270.97	270.95	3/29/1993	--	733.56	BD	database
UE-5 PW-3	1004.50	271.03	271.01	3/29/1993	--	733.49	BD	Bechtel
UE-5 PW-3	1004.50	271.06	271.04	3/30/1993	--	733.47	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.02	3/31/1993	--	733.48	BD	Bechtel
UE-5 PW-3	1004.50	270.99	270.97	4/1/1993	--	733.53	BD	Bechtel
UE-5 PW-3	1004.50	270.98	270.96	4/5/1993	--	733.55	BD	Bechtel
UE-5 PW-3	1004.50	271.09	271.07	4/6/1993	--	733.43	BD	database
UE-5 PW-3	1004.50	271.05	271.03	4/6/1993	--	733.47	BD	Bechtel
UE-5 PW-3	1004.50	271.06	271.05	5/10/1993	--	733.46	BD	Bechtel
UE-5 PW-3	1004.50	271.01	270.99	5/11/1993	--	733.52	BD	Bechtel
UE-5 PW-3	1004.50	271.02	271.00	5/12/1993	--	733.50	BD	Bechtel
UE-5 PW-3	1004.50	271.06	271.04	5/13/1993	--	733.47	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.02	5/17/1993	--	733.49	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.03	5/18/1993	--	733.48	BD	Bechtel
UE-5 PW-3	1004.50	271.03	271.02	5/19/1993	--	733.49	BD	Bechtel
UE-5 PW-3	1004.50	271.01	270.99	5/20/1993	--	733.52	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.03	5/24/1993	--	733.48	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.03	5/25/1993	--	733.48	BD	Bechtel
UE-5 PW-3	1004.50	271.03	271.01	6/1/1993	--	733.49	BD	Bechtel
UE-5 PW-3	1004.50	271.06	271.04	6/7/1993	--	733.46	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.02	6/14/1993	--	733.49	BD	Bechtel
UE-5 PW-3	1004.50	271.03	271.01	6/21/1993	--	733.50	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.02	7/26/1993	--	733.49	BD	Bechtel
UE-5 PW-3	1004.50	271.00	270.99	8/3/1993	--	733.52	BD	Bechtel
UE-5 PW-3	1004.50	271.05	271.03	8/9/1993	--	733.47	BD	Bechtel
UE-5 PW-3	1004.50	271.03	271.01	8/16/1993	--	733.50	BD	Bechtel
UE-5 PW-3	1004.50	271.02	271.00	8/30/1993	--	733.50	BD	Bechtel
UE-5 PW-3	1004.50	271.04	271.03	12/28/1993	--	733.48	BD	Bechtel
UE-5 PW-3	1004.50	271.00	270.98	1/3/1994	--	733.53	BD	Bechtel
UE-5 PW-3	1004.50	270.96	270.94	2/2/1994	--	733.57	BD	Bechtel
UE-5 PW-3	1004.50	271.01	270.99	2/22/1994	--	733.51	BD	Bechtel
UE-5 PW-3	1004.50	271.00	270.98	2/28/1994	--	733.53	BD	Bechtel
UE-5 PW-3	1004.50	270.96	270.94	3/7/1994	--	733.56	BD	Bechtel

Well UE-5 PW-3  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-3	1004.50	270.97	270.95	3/14/1994	--	733.55	BD	Bechtel
UE-5 PW-3	1004.50	270.98	270.96	3/21/1994	--	733.54	BD	Bechtel
UE-5 PW-3	1004.50	271.00	270.98	3/28/1994	--	733.53	BD	Bechtel
UE-5 PW-3	1004.50	270.96	270.94	4/4/1994	--	733.56	BD	Bechtel
UE-5 PW-3	1004.50	270.95	270.93	4/13/1994	--	733.57	BD	Bechtel
UE-5 PW-3	1004.50	270.95	270.93	4/20/1994	--	733.58	BD	Bechtel
UE-5 PW-3	1004.50	270.95	270.93	4/26/1994	--	733.57	BD	Bechtel
UE-5 PW-3	1004.50	270.92	270.90	1/18/1995	--	733.60	BD	Bechtel
UE-5 PW-3	1004.50	270.91	270.89	4/3/1995	--	733.61	BD	Bechtel
UE-5 PW-3	1004.50	270.65	270.63	1/16/1996	--	733.87	BD	Bechtel
UE-5 PW-3	1004.50	270.73	270.71	4/16/1996	--	733.79	BD	Bechtel
UE-5 PW-3	1004.50	270.81	270.79	10/1/1996	--	733.71	BD	Bechtel
UE-5 PW-3	1004.50	270.82	270.80	11/19/1996	--	733.70	BD	Bechtel
UE-5 PW-3	1004.50	270.71	270.70	3/3/1997	--	733.81	BD	Bechtel
UE-5 PW-3	1004.50	270.85	270.83	4/15/1997	--	733.68	BD	Bechtel
UE-5 PW-3	1004.50	270.82	270.80	6/18/1997	--	733.71	BD	Bechtel
UE-5 PW-3	1004.50	270.81	270.79	7/28/1997	--	733.71	BD	Bechtel
UE-5 PW-3	1004.50	270.74	270.73	8/20/1997	--	733.78	BD	Bechtel
UE-5 PW-3	1004.50	270.79	270.77	9/25/1997	--	733.73	BD	Bechtel
UE-5 PW-3	1004.50	270.78	270.77	10/27/1997	--	733.74	BD	Bechtel
UE-5 PW-3	1004.50	270.85	270.84	11/3/1997	--	733.67	BD	Bechtel
UE-5 PW-3	1004.50	270.78	270.77	11/6/1997	--	733.74	BD	Bechtel
UE-5 PW-3	1004.50	270.85	270.83	11/12/1997	--	733.68	BD	Bechtel
UE-5 PW-3	1004.50	270.80	270.78	11/13/1997	--	733.73	BD	Bechtel
UE-5 PW-3	1004.50	270.85	270.83	11/19/1997	--	733.67	BD	Bechtel
UE-5 PW-3	1004.50	270.88	270.86	11/20/1997	--	733.65	BD	Bechtel
UE-5 PW-3	1004.50	270.84	270.82	11/25/1997	--	733.68	BD	Bechtel
UE-5 PW-3	1004.50	270.75	270.74	11/26/1997	--	733.77	BD	Bechtel
UE-5 PW-3	1004.50	270.90	270.88	12/3/1997	--	733.62	BD	Bechtel
UE-5 PW-3	1004.50	270.90	270.88	1/26/1998	--	733.62	BD	Bechtel
UE-5 PW-3	1004.50	270.82	270.80	5/12/1998	--	733.70	BD	Bechtel
UE-5 PW-3	1004.50	270.66	270.64	10/27/1998	--	733.86	BD	Bechtel
UE-5 PW-3	1004.50	270.65	270.63	12/22/1998	--	733.87	BD	Bechtel
UE-5 PW-3	1004.50	270.73	270.71	2/2/1999	--	733.80	BD	Bechtel
UE-5 PW-3	1004.50	270.66	270.64	5/18/1999	--	733.87	BD	Bechtel
UE-5 PW-3	1004.50	270.68	270.67	8/25/1999	--	733.84	BD	Bechtel
UE-5 PW-3	1004.50	270.64	270.63	10/26/1999	--	733.88	BD	Bechtel
UE-5 PW-3	1004.50	270.82	270.80	4/24/2000	--	733.71	BD	Bechtel
UE-5 PW-3	1004.50	270.77	270.75	8/7/2000	--	733.75	BD	Bechtel

Well UE-5 PW-3  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5 PW-3	1004.50	270.75	270.74	11/13/2000	--	733.77	BD	Bechtel
UE-5 PW-3	1004.50	270.68	270.66	2/22/2001	--	733.85	BD	Bechtel
UE-5 PW-3	1004.50	270.79	270.78	5/21/2001	--	733.73	BD	Bechtel
UE-5 PW-3	1004.50	270.78	270.76	8/1/2001	--	733.74	BD	Bechtel
UE-5 PW-3	1004.50	270.75	270.74	10/1/2001	--	733.77	BD	Bechtel
UE-5 PW-3	1004.50	--	--	2/26/2002	--	733.67	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.82	270.81	2/26/2002	--	733.70	BD	Bechtel
UE-5 PW-3	1004.50	--	--	5/13/2002	--	733.75	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.74	270.72	5/13/2002	--	733.78	BD	Bechtel
UE-5 PW-3	1004.50	--	--	8/19/2002	--	733.77	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.72	270.70	8/19/2002	--	733.81	BD	Bechtel
UE-5 PW-3	1004.50	--	--	10/21/2002	--	733.75	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.74	270.72	10/21/2002	--	733.78	BD	Bechtel
UE-5 PW-3	1004.50	--	--	2/26/2003	--	733.75	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.74	270.72	2/26/2003	--	733.79	BD	Bechtel
UE-5 PW-3	1004.50	--	--	4/10/2003	--	733.78	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.71	270.69	4/10/2003	--	733.82	BD	Bechtel
UE-5 PW-3	1004.50	--	--	9/10/2003	--	733.68	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.81	270.79	9/10/2003	--	733.72	BD	Bechtel
UE-5 PW-3	1004.50	--	--	10/20/2003	--	733.66	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.83	270.81	10/20/2003	--	733.69	BD	Bechtel
UE-5 PW-3	1004.50	--	--	2/25/2004	--	733.67	BD	RNM-2s MWAT
UE-5 PW-3	1004.50	270.82	270.80	2/25/2004	--	733.70	BD	Bechtel

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not Applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level** not applicable

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

RNM-2s MWAT = Integrated Data Report for the RNM-2s Multi-Well Aquifer Test at Frenchman Flat, Nevada Test Site, Nevada (SNJV, 2004) (corrected water-level elevation given)

Bechtel = personal communication from Fred Nawrocki with Bechtel Nevada (Nawrocki, 2004)

Well UE-5c WW  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5c WW	980.32	251.34	251.33	2/17/1966	--	728.99	BD	database
UE-5c WW	980.32	245.91	245.91	3/20/1971	--	734.41	BD	database
UE-5c WW	980.32	245.49	245.48	3/23/1971	--	734.84	BD	database
UE-5c WW	980.32	245.97	245.97	10/27/1971	--	734.35	BD	database
UE-5c WW	980.32	245.76	245.75	7/30/1972	--	734.56	BD	database
UE-5c WW	980.32	245.97	245.97	1/18/1973	--	734.35	BD	database
UE-5c WW	980.32	247.04	247.03	8/11/1987	--	733.28	BD	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level**

**used to determine contemporary static water level**

<sup>d</sup>Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

Well UE-5f  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5f	1006.09	271.27	--	6/15/1965	--	<b>734.82</b>	none	database
UE-5f	1006.09	--	--	2/21/1991	O		--	database
UE-5f	1006.09	--	--	10/15/1997	O		--	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: O = An obstruction was encountered in the well above the water surface (no water level recorded).

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level**

used to determine contemporary static water level not applicable

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

UE-5j  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5j	1090.57	242.62	--	3/29/1966	--	847.95	none	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not applicable

<sup>c</sup>meters above sea level

static water level could not be determined

<sup>d</sup>Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

Well UE-5k  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5k	1020.65	286.21	--	5/25/1966	C	734.45	none	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

<sup>c</sup>meters above sea level

static water level could not be determined

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

Well UE-5m  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5m	1066.80	157.89	--	4/26/1966	C	908.91	none	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

<sup>c</sup>meters above sea level

static water level could not be determined

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

UE-5n  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5n	948.95	215.31	--	12/3/1976	--	733.64	none	database
UE-5n	948.95	215.34	--	12/14/1976	--	733.61	none	database
UE-5n	948.95	214.88	--	4/8/1977	--	734.07	none	database
UE-5n	948.95	214.58	--	10/15/1979	--	734.37	none	database
UE-5n	948.95	214.24	--	3/22/1980	--	734.71	none	database
UE-5n	948.95	214.37	--	3/31/1980	--	734.59	none	database
UE-5n	948.95	214.92	--	5/5/1983	--	734.03	none	database
UE-5n	948.95	214.88	--	6/16/1983	--	734.07	none	database
UE-5n	948.95	214.97	--	8/25/1983	--	733.98	none	database
UE-5n	948.95	214.83	--	1/10/1984	--	734.13	none	database
UE-5n	948.95	214.82	--	5/17/1984	--	734.13	none	database
UE-5n	948.95	214.64	--	3/19/1985	--	734.31	none	database
UE-5n	948.95	214.59	--	4/23/1985	--	734.36	none	database
UE-5n	948.95	214.58	--	4/23/1985	--	734.37	none	database
UE-5n	948.95	214.55	--	7/10/1986	--	734.40	none	database
UE-5n	948.95	215.07	--	7/24/1987	--	733.89	none	database
UE-5n	948.95	214.98	--	3/24/1988	--	733.98	none	database
UE-5n	948.95	214.98	--	10/21/1988	--	733.98	none	database
UE-5n	948.95	214.94	--	1/10/1989	--	734.01	none	database
UE-5n	948.95	214.96	--	1/10/1989	--	733.99	none	database
UE-5n	948.95	215.07	--	1/11/1989	--	733.89	none	database
UE-5n	948.95	215.05	--	1/11/1989	--	733.91	none	database
UE-5n	948.95	215.00	--	1/13/1989	--	733.96	none	database
UE-5n	948.95	215.01	--	1/13/1989	--	733.95	none	database
UE-5n	948.95	214.85	--	5/3/1989	--	734.10	none	database
UE-5n	948.95	214.67	--	9/8/1989	--	734.28	none	database
UE-5n	948.95	214.88	--	9/8/1989	--	734.07	none	database
UE-5n	948.95	215.04	--	10/26/1989	--	733.92	none	database
UE-5n	948.95	214.88	--	12/15/1989	--	734.07	none	database
UE-5n	948.95	214.98	--	4/13/1990	--	733.98	none	database
UE-5n	948.95	214.98	--	5/29/1990	--	733.98	none	database
UE-5n	948.95	215.01	--	10/26/1990	--	733.95	none	database
UE-5n	948.95	214.88	--	1/10/1991	--	734.07	none	database
UE-5n	948.95	214.91	--	2/21/1991	--	734.04	none	database
UE-5n	948.95	214.90	--	3/5/1991	--	734.05	none	database
UE-5n	948.95	214.98	--	4/11/1991	--	733.98	none	database
UE-5n	948.95	214.91	--	4/26/1991	--	734.04	none	database
UE-5n	948.95	214.67	--	5/17/1991	--	734.28	none	database
UE-5n	948.95	214.64	--	5/29/1991	--	734.31	none	database

UE-5n  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5n	948.95	215.22	--	6/25/1991	--	733.73	none	database
UE-5n	948.95	214.58	--	7/9/1991	--	734.37	none	database
UE-5n	948.95	214.54	--	7/19/1991	--	734.41	none	database
UE-5n	948.95	214.49	--	8/16/1991	--	734.46	none	database
UE-5n	948.95	214.52	--	8/28/1991	--	734.43	none	database
UE-5n	948.95	214.43	--	9/27/1991	--	734.53	none	database
UE-5n	948.95	214.37	--	10/21/1991	--	734.59	none	database
UE-5n	948.95	214.52	--	11/20/1991	--	734.43	none	database
UE-5n	948.95	214.40	--	12/11/1991	--	734.56	none	database
UE-5n	948.95	214.43	--	1/17/1992	--	734.53	none	database
UE-5n	948.95	214.58	--	2/11/1992	--	734.37	none	database
UE-5n	948.95	214.61	--	3/12/1992	--	734.34	none	database
UE-5n	948.95	214.61	--	4/14/1992	--	734.34	none	database
UE-5n	948.95	214.62	--	4/28/1992	--	734.33	none	database
UE-5n	948.95	214.61	--	4/28/1992	--	734.34	none	database
UE-5n	948.95	214.64	--	4/28/1992	--	734.32	none	database
UE-5n	948.95	214.64	--	5/11/1992	--	734.31	none	database
UE-5n	948.95	214.67	--	6/15/1992	--	734.28	none	database
UE-5n	948.95	214.70	--	7/13/1992	--	734.25	none	database
UE-5n	948.95	214.70	--	8/11/1992	--	734.25	none	database
UE-5n	948.95	214.76	--	9/17/1992	--	734.19	none	database
UE-5n	948.95	214.70	--	10/14/1992	--	734.25	none	database
UE-5n	948.95	214.82	--	11/24/1992	--	734.13	none	database
UE-5n	948.95	214.82	--	1/21/1993	--	734.13	none	database
UE-5n	948.95	214.73	--	2/24/1993	--	734.22	none	database
UE-5n	948.95	214.76	--	3/17/1993	--	734.19	none	database
UE-5n	948.95	214.85	--	4/6/1993	--	734.10	none	database
UE-5n	948.95	214.74	--	4/9/1993	--	734.21	none	database
UE-5n	948.95	214.79	--	4/13/1993	--	734.17	none	database
UE-5n	948.95	214.79	--	4/20/1993	--	734.17	none	database
UE-5n	948.95	214.73	--	4/21/1993	--	734.22	none	database
UE-5n	948.95	214.76	--	4/26/1993	--	734.20	none	database
UE-5n	948.95	214.73	--	6/28/1993	--	734.22	none	database
UE-5n	948.95	214.79	--	7/29/1993	--	734.17	none	database
UE-5n	948.95	215.36	--	12/20/1993	--	733.59	none	database
UE-5n	948.95	214.72	--	2/2/1994	--	734.23	none	database
UE-5n	948.95	214.75	--	2/14/1994	--	734.20	none	database
UE-5n	948.95	214.81	--	4/26/1994	--	734.14	none	database
UE-5n	948.95	214.83	--	5/10/1994	--	734.12	none	database

UE-5n  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-5n	948.95	214.87	--	11/21/1994	--	734.08	none	database
UE-5n	948.95	214.81	--	2/22/1995	--	734.14	none	database
UE-5n	948.95	214.84	--	8/22/1995	--	734.11	none	database
UE-5n	948.95	214.92	--	1/8/1996	--	734.03	none	database
UE-5n	948.95	214.94	--	6/14/1996	--	734.02	none	database
UE-5n	948.95	214.92	--	8/26/1997	--	734.03	none	database
UE-5n	948.95	214.98	--	10/21/1998	--	733.97	none	database
UE-5n	948.95	214.92	--	4/28/1999	--	734.03	none	database
UE-5n	948.95	214.98	--	12/13/1999	--	733.97	none	database
UE-5n	948.95	215.06	--	7/10/2000	--	733.89	none	database
UE-5n	948.95	215.08	--	10/25/2000	--	733.87	none	database
UE-5n	948.95	215.11	--	4/4/2001	--	733.84	none	database
UE-5n	948.95	215.07	--	7/11/2001	--	733.89	none	database
UE-5n	948.95	215.09	--	9/26/2001	--	733.86	none	database
UE-5n	948.95	215.04	--	12/27/2001	--	733.91	none	database
UE-5n	948.95	215.13	--	3/11/2002	--	733.82	none	database
UE-5n	948.95	215.11	--	7/25/2002	--	733.84	none	database
UE-5n	948.95	215.07	--	9/10/2002	--	733.88	none	database
UE-5n	948.95	215.18	--	12/30/2002	--	733.77	none	database
UE-5n	948.95	215.13	--	3/10/2003	--	733.82	none	database
UE-5n	948.95	215.25	--	9/25/2003	--	733.70	none	database
UE-5n	948.95	215.17	--	11/20/2003	--	733.78	none	database
UE-5n	948.95	214.91	--	2/13/2003	--	734.04	none	database
UE-5n	948.95	215.05	--	4/10/2003	--	733.91	none	database
UE-5n	948.95	215.15	--	7/26/2003	--	733.80	none	database
UE-5n	948.95	215.19	--	8/5/2003	--	733.76	none	database
UE-5n	948.95	215.20	--	8/23/2003	Z	733.75	none	database
UE-5n	948.95	215.22	--	8/24/2003	Z	733.73	none	database
UE-5n	948.95	215.05	--	9/12/2003	Z	733.91	none	database
UE-5n	948.95	215.19	--	3/11/2004	--	733.76	none	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: Z = "Other conditions at the well may have affected the water level measurement."

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level** not applicable

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: none = no correction made to water level

UE-5n  
Water-Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

<sup>e</sup>Source: database = UGTA borehole database  
USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

Well UE-11a  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-11a	1078.48	343.81	343.79	10/15/1965	C	734.69	BD	database
UE-11a	1078.48	349.61	349.58	9/4/1982	C	728.90	BD	database
UE-11a	1078.48	344.94	344.91	9/27/1991	--	733.56	BD	database
UE-11a	1078.48	345.00	344.97	10/21/1991	--	733.50	BD	database
UE-11a	1078.48	345.22	345.19	11/20/1991	--	733.29	BD	database
UE-11a	1078.48	345.06	345.04	12/11/1991	--	733.44	BD	database
UE-11a	1078.48	345.06	345.04	1/17/1992	--	733.44	BD	database
UE-11a	1078.48	345.06	345.04	2/11/1992	--	733.44	BD	database
UE-11a	1078.48	345.16	345.13	3/12/1992	--	733.35	BD	database
UE-11a	1078.48	344.97	344.94	4/14/1992	--	733.53	BD	database
UE-11a	1078.48	344.94	344.91	5/11/1992	--	733.56	BD	database
UE-11a	1078.48	344.97	344.94	6/15/1992	--	733.53	BD	database
UE-11a	1078.48	345.22	345.19	7/13/1992	--	733.29	BD	database
UE-11a	1078.48	344.91	344.88	8/11/1992	--	733.59	BD	database
UE-11a	1078.48	344.58	344.55	9/17/1992	--	733.93	BD	database
UE-11a	1078.48	344.91	344.88	10/14/1992	--	733.59	BD	database
UE-11a	1078.48	344.94	344.91	11/24/1992	--	733.56	BD	database
UE-11a	1078.48	344.91	344.88	1/27/1993	--	733.59	BD	database
UE-11a	1078.48	344.94	344.91	2/24/1993	--	733.56	BD	database
UE-11a	1078.48	344.94	344.91	3/25/1993	--	733.56	BD	database
UE-11a	1078.48	345.03	345.01	4/6/1993	--	733.47	BD	database
UE-11a	1078.48	344.76	344.73	6/28/1993	--	733.75	BD	database
UE-11a	1078.48	344.83	344.80	7/29/1993	--	733.67	BD	database
UE-11a	1078.48	344.86	344.83	1/31/1994	--	733.64	BD	database
UE-11a	1078.48	--	--	5/17/1994	O		--	database
UE-11a	1078.48	--	--					



Well UE-11a  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

O = An obstruction was encountered in the well above the water surface (no water level recorded).

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level** not applicable

used to determine contemporary static water level

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

-- = Not applicable

<sup>e</sup>Source: database = UGTA borehole database

Well UE-11b  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
UE-11b	1093.01	358.38	--	10/22/1965	C	734.63	none	database
UE-11b	1093.01	349.30	--	12/6/1985	--	<b>743.71</b>	none	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level***

**used to determine historical static water level** not applicable

**used to determine contemporary static water level** not applicable

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

WW-1  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-1	944.88	217.63	--	12/17/1950	--	<b>727.25</b>	none	database
WW-1	944.88	--	--	2/5/2001	O	--	--	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: O = An obstruction was encountered in the well above the water surface (no water level recorded).  
-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level**

used to determine contemporary static water level not applicable

<sup>d</sup>Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

WW-4  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-4	1097.74	253.13	253.11	2/24/1983	--	844.63	BD	database
WW-4	1097.74	253.14	253.12	2/24/1983	--	844.62	BD	database
WW-4	1097.74	254.72	254.71	2/21/1990	--	843.03	BD	database
WW-4	1097.74	254.78	254.77	2/22/1990	--	842.97	BD	database
WW-4	1097.74	254.57	254.55	2/22/1990	--	843.18	BD	database
WW-4	1097.74	254.93	254.92	2/23/1990	P	842.82	BD	database
WW-4	1097.74	254.51	254.49	2/26/1990	--	843.24	BD	database
WW-4	1097.74	254.63	254.61	9/19/1990	R	843.12	BD	database
WW-4	1097.74	--	--	11/5/1990	P	--	BD	database
WW-4	1097.74	254.39	254.37	1/14/1991	--	843.37	BD	database
WW-4	1097.74	--	--	2/19/1991	P	--	BD	database
WW-4	1097.74	--	--	3/18/1991	P	--	BD	database
WW-4	1097.74	--	--	4/26/1991	P	--	BD	database
WW-4	1097.74	--	--	5/6/1991	P	--	BD	database
WW-4	1097.74	--	--	6/10/1991	P	--	BD	database
WW-4	1097.74	254.66	254.65	7/5/1991	--	843.09	BD	database
WW-4	1097.74	254.48	254.46	8/16/1991	--	843.27	BD	database
WW-4	1097.74	--	--	8/28/1991	P	--	BD	database
WW-4	1097.74	--	--	9/27/1991	P	--	BD	database
WW-4	1097.74	--	--	10/21/1991	P	--	BD	database
WW-4	1097.74	259.90	259.89	11/20/1991	--	837.85	BD	database
WW-4	1097.74	254.60	254.58	12/11/1991	--	843.15	BD	database
WW-4	1097.74	254.42	254.40	1/17/1992	--	843.34	BD	database
WW-4	1097.74	254.60	254.58	2/11/1992	--	843.15	BD	database
WW-4	1097.74	259.93	259.92	3/12/1992	--	837.82	BD	database
WW-4	1097.74	259.81	259.80	4/14/1992	--	837.94	BD	database
WW-4	1097.74	259.84	259.83	5/11/1992	--	837.91	BD	database
WW-4	1097.74	259.90	259.89	6/15/1992	--	837.85	BD	database
WW-4	1097.74	259.05	259.03	7/13/1992	P	838.70	BD	database
WW-4	1097.74	259.23	259.21	8/11/1992	--	838.52	BD	database
WW-4	1097.74	259.69	259.67	9/17/1992	P	838.06	BD	database
WW-4	1097.74	259.26	259.25	10/14/1992	P	838.49	BD	database
WW-4	1097.74	254.63	254.61	11/17/1992	--	843.12	BD	database
WW-4	1097.74	259.17	259.16	11/20/1992	P	838.58	BD	database
WW-4	1097.74	254.49	254.47	1/22/1993	--	843.27	BD	database
WW-4	1097.74	254.56	254.55	3/10/1993	--	843.19	BD	database
WW-4	1097.74	259.20	259.19	6/28/1993	P	838.55	BD	database
WW-4	1097.74	254.83	254.81	7/29/1993	--	842.92	BD	database
WW-4	1097.74	255.18	255.17	12/20/1993	--	842.57	BD	database

WW-4  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-4	1097.74	254.92	254.90	2/9/1994	--	842.83	BD	database
WW-4	1097.74	259.23	259.22	4/12/1994	--	838.52	BD	database
WW-4	1097.74	255.17	255.15	5/17/1994	--	842.59	BD	database
WW-4	1097.74	254.86	254.85	10/24/1994	--	842.89	BD	database
WW-4	1097.74	254.59	254.58	3/16/1995	--	843.16	BD	database
WW-4	1097.74	254.58	254.57	6/19/1995	--	843.17	BD	database
WW-4	1097.74	254.91	254.90	12/15/1995	--	842.84	BD	database
WW-4	1097.74	254.70	254.68	3/21/1996	--	843.05	BD	database
WW-4	1097.74	254.78	254.77	7/3/1996	--	842.97	BD	database
WW-4	1097.74	254.71	254.70	12/12/1996	--	843.04	BD	database
WW-4	1097.74	254.64	254.62	3/13/1997	--	843.11	BD	database
WW-4	1097.74	254.88	254.87	3/31/1998	--	842.87	BD	database
WW-4	1097.74	256.72	256.71	10/21/1998	--	841.03	BD	database
WW-4	1097.74	256.76	256.75	4/27/1999	P	840.99	BD	database
WW-4	1097.74	254.99	254.98	11/15/1999	--	842.76	BD	database
WW-4	1097.74	255.18	255.17	7/26/2000	P	842.57	BD	database
WW-4	1097.74	255.15	255.14	10/18/2000	--	842.60	BD	database
WW-4	1097.74	256.92	256.91	4/4/2001	P	840.83	BD	database
WW-4	1097.74	255.72	255.71	7/12/2001	--	842.03	BD	database
WW-4	1097.74	257.29	257.27	9/20/2001	P	840.46	BD	database
WW-4	1097.74	255.22	255.20	11/15/2001	--	842.53	BD	database
WW-4	1097.74	255.37	255.36	3/8/2002	--	842.38	BD	database
WW-4	1097.74	255.17	255.15	4/1/2002	--	842.58	BD	database
WW-4	1097.74	255.21	255.20	4/8/2002	--	842.54	BD	database
WW-4	1097.74	255.01	255.00	4/15/2002	--	842.74	BD	database
WW-4	1097.74	255.22	255.20	4/22/2002	--	842.53	BD	database
WW-4	1097.74	255.20	255.18	4/29/2002	--	842.55	BD	database
WW-4	1097.74	255.51	255.50	7/25/2002	--	842.24	BD	database
WW-4	1097.74	257.29	257.27	9/9/2002	P	840.46	BD	database
WW-4	1097.74	255.33	255.32	12/16/2002	--	842.42	BD	database
WW-4	1097.74	255.38	255.36	3/17/2003	--	842.38	BD	database
WW-4	1097.74	255.49	255.47	6/23/2003	--	842.27	BD	database
WW-4	1097.74	255.62	255.61	9/22/2003	--	842.13	BD	database
WW-4	1097.74	255.59	255.58	11/17/2003	--	842.16	BD	database
WW-4	1097.74	255.55	255.54	3/8/2004	--	842.20	BD	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: P = Site was being pumped.

R = Site had been pumped recently.

WW-4  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level**

used to determine contemporary static water level not applicable

<sup>d</sup> Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

WW-4A  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-4A	1099.11	254.75	--	2/22/1990	--	844.36	none	database
WW-4A	1099.11	--	--	2/23/1990	P	--	none	database
WW-4A	1099.11	254.48	--	2/26/1990	--	844.63	none	database
WW-4A	1099.11	254.84	--	5/29/1990	--	844.27	none	database
WW-4A	1099.11	254.87	--	7/30/1990	--	844.24	none	database
WW-4A	1099.11	254.60	--	10/26/1990	--	844.51	none	database
WW-4A	1099.11	254.45	--	12/12/1990	--	844.66	none	database
WW-4A	1099.11	254.39	--	1/14/1991	--	844.72	none	database
WW-4A	1099.11	254.78	--	2/19/1991	S	844.33	none	database
WW-4A	1099.11	254.63	--	3/18/1991	S	844.48	none	database
WW-4A	1099.11	254.81	--	4/26/1991	S	844.30	none	database
WW-4A	1099.11	254.66	--	5/6/1991	S	844.45	none	database
WW-4A	1099.11	254.66	--	6/10/1991	S	844.45	none	database
WW-4A	1099.11	254.69	--	7/5/1991	--	844.42	none	database
WW-4A	1099.11	254.45	--	8/16/1991	--	844.66	none	database
WW-4A	1099.11	254.57	--	8/23/1991	--	844.54	none	database
WW-4A	1099.11	254.66	--	1/20/1993	--	844.45	none	database
WW-4A	1099.11	254.71	--	1/21/1993	--	844.40	none	database
WW-4A	1099.11	254.76	--	3/30/1993	--	844.34	none	database
WW-4A	1099.11	254.75	--	6/28/1993	S	844.36	none	database
WW-4A	1099.11	254.87	--	7/29/1993	--	844.24	none	database
WW-4A	1099.11	254.70	--	12/20/1993	--	844.41	none	database
WW-4A	1099.11	255.06	--	2/9/1994	--	844.05	none	database
WW-4A	1099.11	259.91	--	5/17/1994	P	839.20	none	database
WW-4A	1099.11	259.73	--	10/24/1994	--	839.38	none	database
WW-4A	1099.11	254.58	--	3/16/1995	--	844.52	none	database
WW-4A	1099.11	254.60	--	6/19/1995	--	844.51	none	database
WW-4A	1099.11	256.74	--	2/27/1996	P	842.37	none	database
WW-4A	1099.11	258.49	--	7/3/1996	--	840.62	none	database
WW-4A	1099.11	254.8(P) Tj 50.52 0 TD -0.0163	0	0.163	Tc (842.37) Tj 49.92 0 TD -0.017--			

WW-4A  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-4A	1099.11	258.99	--	9/20/2001	P	840.11	none	database
WW-4A	1099.11	255.39	--	11/15/2001	--	843.72	none	database
WW-4A	1099.11	255.54	--	3/8/2002	--	843.57	none	database
WW-4A	1099.11	255.50	--	3/8/2002	--	843.60	none	database
WW-4A	1099.11	255.31	--	4/1/2002	--	843.80	none	database
WW-4A	1099.11	255.35	--	4/8/2002	--	843.76	none	database
WW-4A	1099.11	255.13	--	4/18/2002	--	843.98	none	database
WW-4A	1099.11	255.38	--	4/22/2002	--	843.73	none	database
WW-4A	1099.11	255.32	--	4/29/2002	--	843.79	none	database
WW-4A	1099.11	258.91	--	7/25/2002	P	840.20	none	database
WW-4A	1099.11	259.06	--	9/9/2002	P	840.05	none	database
WW-4A	1099.11	255.48	--	12/16/2002	--	843.63	none	database
WW-4A	1099.11	255.53	--	3/17/2003	--	843.58	none	database
WW-4A	1099.11	255.63	--	6/23/2003	--	843.48	none	database
WW-4A	1099.11	255.78	--	9/22/2003	--	843.33	none	database
WW-4A	1099.11	255.74	--	11/17/2003	--	843.37	none	database
WW-4A	1099.11	255.70	--	3/8/2004	--	843.41	none	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: P = Site was being pumped.

S = A nearby site that taps the same aquifer was being pumped.

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level**

**used to determine contemporary static water level** not applicable

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doe\\_nv/](http://nevada.usgs.gov/doe_nv/)

WW-5A  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-5A	942.97	213.06	--	3/15/1951	C	729.91	none	database
WW-5A	942.97	212.75	--	1/26/1959	--	730.22	none	database
WW-5A	942.97	212.08	--	9/14/1959	2 <sup>f</sup>	730.89	none	database
WW-5A	942.97	212.06	--	9/23/1959	12 <sup>f</sup>	<b>730.91</b>	none	database
WW-5A	942.97	212.45	--	9/24/1959	R	730.52	none	database
WW-5A	942.97	212.12	--	10/7/1959	6 <sup>f</sup>	730.85	none	database
WW-5A	942.97	215.37	--	11/4/1971	--	727.60	none	database
WW-5A	942.97	214.90	--	7/27/1972	--	728.07	none	database
WW-5A	942.97	216.19	--	1/16/1980	--	726.77	none	database
WW-5A	942.97	216.53	--	2/11/1992	--	726.44	none	database
WW-5A	942.97	216.77	--	2/25/1992	--	726.20	none	database
WW-5A	942.97	216.77	--	3/12/1992	--	726.20	none	database
WW-5A	942.97	217.02	--	4/14/1992	--	725.95	none	database
WW-5A	942.97	216.35	--	5/11/1992	--	726.62	none	database
WW-5A	942.97	216.29	--	6/15/1992	--	726.68	none	database
WW-5A	942.97	216.96	--	7/13/1992	--	726.01	none	database
WW-5A	942.97	216.90	--	8/11/1992	--	726.07	none	database
WW-5A	942.97	217.08	--	9/17/1992	--	725.89	none	database
WW-5A	942.97	217.08	--	10/14/1992	--	725.89	none	database
WW-5A	942.97	216.38	--	11/24/1992	--	726.59	none	database
WW-5A	942.97	217.23	--	1/21/1993	--	725.74	none	database
WW-5A	942.97	217.47	--	2/24/1993	--	725.49	none	database
WW-5A	942.97	217.57	--	3/17/1993	--	725.40	none	database
WW-5A	942.97	217.66	--	4/6/1993	--	725.31	none	database
WW-5A	942.97	217.11	--	6/28/1993	--	725.86	none	database
WW-5A	942.97	216.54	--	7/29/1993	--	726.43	none	database
WW-5A	942.97	216.98	--	12/20/1993	--	725.98	none	database
WW-5A	942.97	217.00	--	2/2/1994	--	725.97	none	database
WW-5A	942.97	216.72	--	5/16/1994	--	726.25	none	database
WW-5A	942.97	217.03	--	10/24/1994	--	725.94	none	database
WW-5A	942.97	216.80	--	2/21/1995	--	726.17	none	database
WW-5A	942.97	216.90	--	5/2/1995	--	726.07	none	database
WW-5A	942.97	217.21	--	9/20/1995	--	725.76	none	database
WW-5A	942.97	217.00	--	9/26/1995	--	725.97	none	database
WW-5A	942.97	217.22	--	10/10/1995	--	725.75	none	database
WW-5A	942.97	217.10	--	1/22/1996	--	725.87	none	database
WW-5A	942.97	216.87	--	5/14/1996	--	726.10	none	database
WW-5A	942.97	217.05	--	5/28/1996	--	725.92	none	database
WW-5A	942.97	217.06	--	6/11/1996	--	725.91	none	database

WW-5A  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-5A	942.97	217.02	--	9/9/1996	--	725.95	none	database
WW-5A	942.97	217.00	--	10/21/1996	--	725.97	none	database
WW-5A	942.97	217.06	--	10/22/1996	--	725.91	none	database
WW-5A	942.97	216.89	--	10/31/1996	--	726.08	none	database
WW-5A	942.97	217.01	--	11/7/1996	--	725.96	none	database
WW-5A	942.97	216.84	--	12/10/1996	--	726.13	none	database
WW-5A	942.97	216.97	--	1/8/1997	--	726.00	none	database
WW-5A	942.97	216.85	--	2/4/1997	--	726.12	none	database
WW-5A	942.97	217.02	--	3/4/1997	--	725.95	none	database
WW-5A	942.97	216.96	--	4/7/1997	--	726.01	none	database
WW-5A	942.97	216.84	--	5/1/1997	--	726.13	none	database
WW-5A	942.97	216.69	--	5/13/1997	--	726.28	none	database
WW-5A	942.97	216.67	--	5/20/1997	--	726.30	none	database
WW-5A	942.97	216.82	--	5/28/1997	--	726.15	none	database
WW-5A	942.97	216.89	--	6/3/1997	--	726.08	none	database
WW-5A	942.97	216.86	--	7/8/1997	--	726.11	none	database
WW-5A	942.97	216.69	--	10/6/1997	--	726.27	none	database
WW-5A	942.97	216.77	--	11/6/1997	--	726.20	none	database
WW-5A	942.97	216.63	--	1/5/1998	--	726.34	none	database
WW-5A	942.97	216.57	--	2/4/1998	--	726.40	none	database
WW-5A	942.97	216.74	--	3/3/1998	--	726.23	none	database
WW-5A	942.97	216.87	--	4/8/1998	--	726.09	none	database
WW-5A	942.97	216.77	--	5/5/1998	--	726.20	none	database
WW-5A	942.97	216.44	--	6/1/1998	--	726.53	none	database
WW-5A	942.97	216.38	--	6/8/1998	--	726.59	none	database
WW-5A	942.97	216.41	--	6/10/1998	--	726.56	none	database
WW-5A	942.97	216.64	--	7/1/1998	--	726.33	none	database
WW-5A	942.97	216.84	--	8/5/1998	--	726.13	none	database
WW-5A	942.97	216.72	--	9/14/1998	--	726.25	none	database
WW-5A	942.97	216.77	--	9/22/1998	--	726.20	none	database
WW-5A	942.97	216.69	--	10/27/1998	--	726.27	none	database
WW-5A	942.97	216.82	--	11/12/1998	--	726.15	none	database
WW-5A	942.97	216.64	--	3/15/1999	--	726.33	none	database
WW-5A	942.97	216.72	--	5/4/1999	--	726.25	none	database
WW-5A	942.97	216.90	--	5/5/1999	--	726.07	none	database
WW-5A	942.97	216.92	--	6/30/1999	--	726.05	none	database
WW-5A	942.97	216.97	--	7/29/1999	--	726.00	none	database
WW-5A	942.97	216.90	--	9/16/1999	--	726.06	none	database
WW-5A	942.97	216.83	--	9/21/1999	--	726.13	none	database

WW-5A  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-5A	942.97	216.77	--	11/16/1999	--	726.20	none	database
WW-5A	942.97	217.02	--	3/7/2000	--	725.95	none	database
WW-5A	942.97	217.08	--	7/12/2000	--	725.89	none	database
WW-5A	942.97	216.83	--	8/30/2000	--	726.14	none	database
WW-5A	942.97	216.87	--	10/3/2000	--	726.09	none	database
WW-5A	942.97	216.92	--	12/7/2000	--	726.05	none	database
WW-5A	942.97	216.98	--	4/16/2001	--	725.99	none	database
WW-5A	942.97	216.86	--	5/2/2001	--	726.11	none	database
WW-5A	942.97	216.76	--	5/7/2001	--	726.21	none	database
WW-5A	942.97	216.78	--	5/24/2001	--	726.19	none	database
WW-5A	942.97	216.54	--	7/12/2001	--	726.43	none	database
WW-5A	942.97	216.65	--	9/26/2001	--	726.32	none	database
WW-5A	942.97	216.60	--	12/27/2001	--	726.37	none	database
WW-5A	942.97	216.55	--	3/13/2002	--	726.42	none	database
WW-5A	942.97	216.59	--	7/25/2002	--	726.38	none	database
WW-5A	942.97	216.59	--	9/10/2002	--	726.38	none	database
WW-5A	942.97	216.47	--	9/20/2002	--	726.50	none	database
WW-5A	942.97	216.56	--	10/23/2002	--	726.41	none	database
WW-5A	942.97	216.59	--	11/5/2002	--	726.38	none	database
WW-5A	942.97	216.47	--	11/25/2002	--	726.50	none	database
WW-5A	942.97	216.45	--	12/30/2002	--	726.52	none	database
WW-5A	942.97	216.54	--	1/28/2003	--	726.43	none	database
WW-5A	942.97	216.54	--	1/28/2003	--	726.43	none	database
WW-5A	942.97	216.47	--	3/10/2003	--	726.50	none	database
WW-5A	942.97	216.54	--	6/18/2003	--	726.43	none	database
WW-5A	942.97	216.44	--	9/25/2003	--	726.53	none	database
WW-5A	942.97	216.45	--	11/20/2003	--	726.52	none	database
WW-5A	942.97	216.33	--	1/22/2004	--	726.64	none	USGS website
WW-5A	942.97	216.40	--	3/8/2004	--	726.57	none	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: C = Water level was measured prior to well completion.

R = Site had been pumped recently.

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level**

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: none = no correction made to water level

WW-5A  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

<sup>f</sup>number of days pump was off prior to the water-level measurement as reported in Hood (1961)

WW-5B  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-5B	942.83	208.03	--	8/25/1959	--	734.80	none	database
WW-5B	942.83	208.06	--	8/25/1959	--	734.77	none	database
WW-5B	942.83	208.06	--	8/25/1959	--	734.77	none	database
WW-5B	942.83	207.93	--	8/25/1959	--	734.89	none	database
WW-5B	942.83	208.06	--	8/26/1959	6 <sup>f</sup>	734.77	none	database
WW-5B	942.83	208.12	--	8/26/1959	--	734.71	none	database
WW-5B	942.83	208.28	--	8/27/1959	--	734.55	none	database
WW-5B	942.83	208.12	--	8/27/1959	--	734.71	none	database
WW-5B	942.83	208.48	--	8/29/1959	--	734.35	none	database
WW-5B	942.83	208.30	--	8/31/1959	2 <sup>f</sup>	734.53	none	database
WW-5B	942.83	208.26	--	12/23/1960	4 <sup>f</sup>	734.56	none	database
WW-5B	942.83	208.28	--	12/23/1960	--	734.55	none	database
WW-5B	942.83	221.38	--	4/12/1962	P <sup>g</sup>	721.45	none	database
WW-5B	942.83	221.38	--	4/12/1962	P	721.45	none	database
WW-5B	942.83	207.69	--	6/7/1962	--	735.14	none	database
WW-5B	942.83	207.69	--	6/7/1962	--	735.14	none	database
WW-5B	942.83	208.50	--	10/19/1964	--	734.33	none	database
WW-5B	942.83	208.48	--	10/19/1964	--	734.35	none	database
WW-5B	942.83	208.46	--	10/19/1964	--	734.36	none	database
WW-5B	942.83	207.87	--	3/21/1969	--	734.96	none	database
WW-5B	942.83	208.18	--	3/25/1971	--	734.65	none	database
WW-5B	942.83	208.09	--	3/25/1971	--	734.74	none	database
WW-5B	942.83	208.21	--	10/29/1971	--	734.62	none	database
WW-5B	942.83	208.39	--	10/29/1971	--	734.44	none	database
WW-5B	942.83	208.06	--	7/30/1972	--	734.77	none	database
WW-5B	942.83	208.06	--	7/30/1972	--	734.77	none	database
WW-5B	942.83	209.40	--	1/16/1980	--	733.43	none	database
WW-5B	942.83	209.40	--	1/16/1980	--	733.43	none	database
WW-5B	942.83	209.95	--	5/6/1991	--	732.88	none	database
WW-5B	942.83	209.40	--	1/21/2003	--	733.43	none	database
WW-5B	942.83	209.82	--	1/22/2003	R	733.01	none	database
WW-5B	942.83	209.49	--	3/10/2003	--	733.34	none	database
WW-5B	942.83	209.49	--	6/23/2003	--	733.34	none	database
WW-5B	942.83	209.54	--	9/22/2003	--	733.29	none	database
WW-5B	942.83	209.53	--	11/17/2003	--	733.29	none	database
WW-5B	942.83	209.63	--	3/8/2004	--	733.20	none	USGS website

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: P = Site was being pumped.

WW-5B  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
---------------------	-------------------------------	---	---------------------------------	------------------	--------------------------	---	------------------------------	---------------------

<sup>g</sup>P = Assumed to be pumping

R = Site had been pumped recently.

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level**

used to determine contemporary static water level

<sup>d</sup>Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

USGS website = [http://nevada.usgs.gov/doi\\_nv/](http://nevada.usgs.gov/doi_nv/)

<sup>f</sup>number of days pump was off prior to the water-level measurement as reported in Hood (1961)

WW-5C  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-5C	939.73	211.23	--	4/26/1954	--	728.50	none	database
WW-5C	939.73	211.67	--	4/3/1959	--	728.06	none	database
WW-5C	939.73	211.05	--	9/9/1959	9 <sup>f</sup>	728.67	none	database
WW-5C	939.73	210.92	--	9/14/1959	4 <sup>f</sup>	728.80	none	database
WW-5C	939.73	213.32	--	12/13/1960	7 <sup>f</sup>	726.40	none	database
WW-5C	939.73	212.73	--	12/30/1960	3 <sup>f</sup>	726.99	none	database
WW-5C	939.73	212.03	--	1/13/1961	17 <sup>f</sup>	727.69	none	database
WW-5C	939.73	211.73	--	1/20/1961	24 <sup>f</sup>	728.00	none	database
WW-5C	939.73	211.39	--	1/27/1961	31 <sup>f</sup>	728.33	none	database
WW-5C	939.73	211.36	--	2/3/1961	38 <sup>f</sup>	728.37	none	database
WW-5C	939.73	210.85	--	2/16/1961	51 <sup>f</sup>	728.87	none	database
WW-5C	939.73	210.62	--	3/3/1961	66 <sup>f</sup>	729.10	none	database
WW-5C	939.73	210.36	--	3/24/1961	--	729.37	none	database
WW-5C	939.73	210.30	--	4/14/1961	--	729.43	none	database
WW-5C	939.73	210.05	--	5/4/1961	--	<b>729.68</b>	none	database
WW-5C	939.73	241.39	--	4/12/1962	P	698.34	none	database
WW-5C	939.73	291.02	--	8/7/1962	P	648.70	none	database
WW-5C	939.73	285.81	--	10/4/1962	--	653.91	none	database
WW-5C	939.73	217.32	--	10/2/1964	--	722.40	none	database
WW-5C	939.73	213.42	--	10/20/1964	--	726.30	none	database
WW-5C	939.73	220.98	--	3/20/1969	--	718.75	none	database
WW-5C	939.73	217.81	--	3/22/1971	--	721.92	none	database
WW-5C	939.73	219.79	--	10/29/1971	--	719.93	none	database
WW-5C	939.73	216.50	--	7/30/1972	--	723.23	none	database
WW-5C	939.73	222.44	--	1/16/1980	--	717.28	none	database
WW-5C	939.73	--	--	5/6/1991	P		--	database
WW-5C	939.73	219.13	--	8/31/1993	--	<b>720.59</b>	none	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: P = Site was being pumped.

-- = Not applicable

<sup>c</sup>meters above sea level

**used to determine historical and contemporary static water level** not applicable

**used to determine historical static water level**

**used to determine contemporary static water level**

<sup>d</sup> Type Correction: none = no correction made to water level

<sup>e</sup>Source: database = UGTA borehole database

<sup>f</sup>number of days pump was off prior to the water-level measurement as reported in Hood (1961)

WW-C-1  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-C1	1195.93	486.46	484.92	6/16/1962	P	711.01	BD	database
WW-C1	1195.93	470.98	469.67	10/5/1962	--	726.26	BD	database
WW-C1	1195.93	470.67	469.37	11/5/1962	--	726.56	BD	database
WW-C1	1195.93	469.76	468.47	1/25/1963	--	<b>727.46</b>	BD	database
WW-C1	1195.93	469.67	468.38	6/6/1963	--	<b>727.55</b>	BD	database
WW-C1	1195.93	469.82	468.53	6/7/1963	--	<b>727.40</b>	BD	database
WW-C1	1195.93	469.36	468.08	8/20/1963	--	<b>727.85</b>	BD	database
WW-C1	1195.93	469.57	468.29	9/7/1963	--	<b>727.64</b>	BD	database
WW-C1	1195.93	469.64	468.35	9/8/1963	--	<b>727.58</b>	BD	database
WW-C1	1195.93	469.67	468.38	10/8/1963	--	<b>727.55</b>	BD	database
WW-C1	1195.93	469.15	467.87	10/8/1963	--	<b>728.06</b>	BD	database
WW-C1	1195.93	469.70	468.41	10/10/1963	--	<b>727.52</b>	BD	database
WW-C1	1195.93	469.15	467.87	4/11/1969	--	<b>728.06</b>	BD	database
WW-C1	1195.93	470.15	468.86	3/29/1971	R	727.07	BD	database
WW-C1	1195.93	470.43	469.13	8/6/1972	R	726.80	BD	database
WW-C1	1195.93	469.74	468.45	4/6/1998	--	<b>727.48</b>	BD	database
WW-C1	1195.93	469.76	468.48	4/14/1998	--	<b>727.46</b>	BD	database
WW-C1	1195.93	469.72	468.44	5/11/1998	--	<b>727.50</b>	BD	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: P = Site was being pumped.

R = Site had been pumped recently.

-- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level***

used to determine historical static water level not applicable

used to determine contemporary static water level not applicable

<sup>d</sup>Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database

WW-C  
Water Level Data

Well Reporting Name	Reference Point Elevation (m)	Measured Depth to Water (mbrp) <sup>a</sup>	Corrected Depth to Water (mbrp)	Measurement Date	Site Status <sup>b</sup>	Water Level Elevation (masl) <sup>c</sup>	Type Correction <sup>d</sup>	Source <sup>e</sup>
WW-C	1196.08	469.54	469.35	6/20/1961	--	726.73	BD	database
WW-C	1196.08	470.61	470.42	9/13/1961	--	725.67	BD	database
WW-C	1196.08	470.34	470.14	11/1/1961	--	725.94	BD	database
WW-C	1196.08	470.43	470.24	1/3/1962	--	725.85	BD	database
WW-C	1196.08	469.79	469.60	1/29/1962	--	726.49	BD	database
WW-C	1196.08	470.79	470.60	6/13/1962	--	725.48	BD	database
WW-C	1196.08	468.45	468.26	6/16/1962	--	727.83	BD	database
WW-C	1196.08	470.00	469.81	4/11/1969	--	726.28	BD	database
WW-C	1196.08	470.52	470.33	3/29/1971	--	725.76	BD	database
WW-C	1196.08	470.95	470.75	10/25/1971	--	725.33	BD	database
WW-C	1196.08	471.02	470.83	8/6/1972	--	725.25	BD	database
WW-C	1196.08	470.57	470.38	3/18/1973	--	725.71	BD	database
WW-C	1196.08	470.61	470.42	10/18/1975	--	725.67	BD	database

<sup>a</sup>meters below reference point

<sup>b</sup>Site Status: -- = Not applicable

<sup>c</sup>meters above sea level

***used to determine historical and contemporary static water level*** not applicable

**used to determine historical static water level**

used to determine contemporary static water level not applicable

<sup>d</sup>Type Correction: BD = water level corrected for borehole deviation

<sup>e</sup>Source: database = UGTA borehole database