HYDROCHEMICAL DATABASE FOR THE YUCCA MOUNTAIN AREA, NYE COUNTY, NEVADA

by Thomas Oliver and Tara Root

U.S. GEOLOGICAL SURVEY

Memo to the Technical Project Officer

Prepared in cooperation with the
U.S. DEPARTMENT OF ENERGY,
NEVADA FIELD OFFICE, under
Interagency Agreement DE-AI08-92NV10874

Denver, Colorado
1997

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Introduction

Principal potential uses of hydrochemical and isotopic data for saturated-zone ground water in the Yucca Mountain area are: (1) to determine vertical and lateral compositional heterogeneity of the shallow saturated zone, (2) to constrain downgradient flow paths, (3) to improve understanding of the origin and stability of discrete compositional domains, (4) to determine the effective communication between matrix and fracture flow, and (5) to establish the spatiotemporal distribution of flux. With these uses in mind, an integrated hydrochemical and isotopic data base for the Yucca Mountain area has been prepared.

Selection Criteria

A large amount of water-quality data exists for wells and springs in southern Nevada and adjacent California. Major and minor element analyses have been previously compiled by McKinley and others (1991) and by Perfect and others (1995). Starting with the spreadsheet developed by Perfect and others in 1995, the saturated-zone-modeling group modified the spreadsheet to include recent hydrochemical and isotopic data for use in their site scale model. The subsequent Excel workbook was the primary source of data for this milestone.

The selected area of coverage is a rectangle centered on Yucca Mountain that includes Jackass Flats to the west and Yucca Flat to the east and extends from Shoshone Mountain to the north to Amargosa Valley in the south (fig. 1). Future work will extend the database in a north-south direction to encompass the recharge area around Rainier Mesa and the discharge area at Alkali Flat.

The Excel workbook was first sorted on the latitude and longitude coordinates and all of the data outside the coverage area were deleted. The remaining analyses were then checked against the source publications for completeness and accuracy. Where possible, the original laboratory analyses were also checked. The final step was to eliminate duplicate records.

There were several major causes for duplicate records in the workbook. The first and most common cause was a minor discrepancy in one or more of the reported parameters. These duplicates could usually be deleted after checking the records against the original laboratory sheets. The second type were analyses that contained data not reported in the otherwise duplicate records. These records were combined to form one entry. Samples taken from publications that reported analyses in meq/L comprise the third type of duplicate in that conversion back to mg/L usually resulted in significant round-off error between the near-duplicate records. The record based on the original analysis was kept in these cases. The fourth type of duplicate arose from sources that used an average of two or more samples to form one record. These records generally did not have a date identifier, and, where found, were removed from the workbook. The final type of discrepancy that caused duplication was location.

Many of the samples referenced in the Amargosa Valley (formerly Lathrop Wells) area had poor or incomplete township/range coordinates reported on the original laboratory analyses. When cited in the various published sources, these records generated multiple samples with multiple locations. The date and time of the sample, however, was an identifier that could be used to remove the duplicate records. When available, the sample name and location was taken from the USGS Open File report 90-355 (McKinley and others, 1991). Other locations were confirmed by comparing the well ownership information contained in the sample analysis to a Nye county water assessment report (Buqo, 1996). An alias was added to the comment section of the records to identify duplicates of this type.

Summary Data Base

The hydrochemical and isotopic data are presented in a Microsoft Excel workbook. The workbook is divided into four main pages (**Hydrochem**, **Isotope**, **Summary**, and **References**) and several additional pages used to calculate statistical information on duplicate analyses. For easy reference, general information about the wells, including location, elevation, well depth, depth to water, and producing aquifer, were presented in all of the workbook pages.

The workbook page entitled **Hydrochem** contains major ion and trace metal chemistry and physical parameters. The **Isotope** page contains stable and radioisotope analyses as well as strontium and uranium concentrations obtained from isotope dilution. The **Summary** page combines data from both **Hydrochem** and **Isotope** to present a synopsis of the best available data for each site.

Where only one or two analyses existed for a site, the data in **Hydrochem** and **Isotope** were linked directly to the **Summary** page with a simple average being used for the two analyses. At locations where two or more packed-off intervals were sampled, however, all of the samples were included in the **Summary** page. With the exception of one site, separate tab pages were created for sites that contained three or more analyses.

For each site, these tab pages included a calculated mean, standard deviation, maximum, minimum, and number of samples. Outlying samples were included on these pages but were separated from the remaining analyses and not used in the statistical calculations. The comment column contains a brief justification for the segregation of these analyses.

The exception was the samples collected at well 15S/50E-18ccc. Three samples were collected at this well over a twenty-year period. Unlike the other duplicate analyses, these samples are all different with several of the major ion species decreasing over time. On possibility is that the two samples collected in the 1950s were contaminated from drilling and as the well continued to be used, the water became cleaner. For this reason, only the sample collected in 1972 was included in the summary table.

Description of Columns and Abbreviations Used in the Workbook

Site Name. Where available, this represents the local name given to a site. For sites identified by township and range coordinates, the various naming conventions were converted to a consistent format. Aliases were included in the comment column for cross-reference against the published sources.

UTM-x and UTM-y. Location of the site in Universal Transverse Mercator coordinates based on the 1927 datum.

Lat DD and Long DD. Latitude and Longitude location of the site in decimal degrees.

Lat DMS and Long DMS. Latitude and Longitude location of the site in degrees, minutes, and seconds.

Date and Time. Collection date in YYMMDD. For samples where only month and year of collection were available, a value of 00 was input for the day. Sample collection times are given in standard 24-hour time.

Site Elevation. Elevation, in meters, above sea level based on the National Geodetic Vertical Datum of 1929.

Well Depth. Distance from the surface to the bottom of the well, in meters.

WT Depth. Depth to water from the surface, in meters.

Aquifer. Geologic unit from which water was obtained.

Qal	Quaternary alluvium
Qtal	Quaternary-Tertiary alluvium
Tb	Tertiary basalts
Tv	Tertiary volcanic rocks
Tpt	Tertiary Topopah Spring Member of Paintbrush Tuff
Tct	Tertiary Crater Flat Tuff
Th	Tertiary Tuffaceous beds of Calico Hills
Tcb	Tertiary Bullfrog Member of Crater Flat Tuff
Tcp	Tertiary Prow Pass Member of Crater Flat Tuff
Tctt	Tertiary Tram Member of Crater Flat Tuff
Srm	Silurian Roberts Mountain Formation
DSlm	Devonian and Silurian Lone Mountain Dolomite

Charge Balance. A cation/anion balance that was calculated by taking the difference between the calculated equivalence of the anions and cations divided by their sum and multiplied by 100 to give results in percent.

TDS Calc. Calculated total dissolved solids, a summation of the concentration of the major ion species.

Spatial Variability

Hydrochemical and isotopic analyses contained in the database are displayed spatially using the contouring program Surfer® from Golden Software. In the attached figures, contours of isotopic and selected hydrochemical data are superimposed on shaded relief maps of the Yucca Mountain area. These maps are meant to convey the extent of the hydrochemical and isotopic database and to indicate possible lateral variability in these parameters. It is fully recognized that the data are not optimally spaced for contouring, that the drill holes and wells sample different aquifers, and that most of the data are from integral rather than discrete samples. Nonetheless, the maps are useful for displaying and evaluating the first-order spatial variability in ground-water composition.

Calcium Content (mg/L). Ground water beneath Yucca Mountain is low in dissolved Ca with concentrations generally increasing from north to south (fig.2). Ground-water from two wells in Crater Flat (approximately 1.6 miles apart) are compositionally distinct from each other (fig. 1). Water from VH-1 has a composition typical of ground water from the volcanic aquifer (Na and HCO_3 type), whereas water from VH-2 has compositional attributes similar to water from the regional carbonate aquifer (Ca predominate over Na, larger HCO_3 contents). The smooth compositional gradient shown (fig. 2) between VH-1 and VH-2 is probably an artifact of contouring. More likely, there is a barrier separating these two compositional domains such as a feeder dike for the volcanic cones the alignment of which separates the two wells. The character of VH-2 water may derive from recharge through Paleozoic limestones at Bare Mountain immediately to the west of the map area (fig. 1) or through interaction with limestone landslide breccias intercalated within the volcanic rocks in this area (Carr and Parrish, 1985). The high-Ca ground water in the eastern part of the area is from J-11, a supply well that was abandoned because of high sulfate contents.

(Ca+Mg)/(Na+K). The regional variation in the alkaline earth/alkali ratio (fig. 3), not surprisingly, is similar to that of Ca (fig. 2). The ratio (Ca+Mg)/(Na+K) also shows the east-to-west compositional gradient across Yucca Mountain noted by previous authors (Bish and others, 1984; and Kerrisk, 1987). The western compositions (including VH-1 in Crater Flat) are more sodic relative to calcium than the eastern compositions including those along Forty Mile Wash.

Deuterium (δ^2H). The δ^2H and $\delta^{18}O$ values of ground water are conservative from recharge. The larger δ^2H values in the Yucca Moutain area occur along Forty Mile Wash (fig. 4), and these are similar to those of present-day mean precipitation (Benson and Klieforth, 1989). The smaller value in the southeastern corner of the area is from water in well TW5 in which the saturated zone is in low permeability Precambrian clastic rocks (R. Laczniak, personal communication). The δ^2H value in TW5 value suggests that this

ground water may have been recharged during much colder climates. Westward from Forty Mile Wash, δ^2H decreases. This decrease generally corresponds with an increase in corrected ^{14}C ages (E. Kicklis, personal communication).

Oxygen-18 ($\delta^{18}O$). As would be expected, the variability of $\delta^{18}O$ is similar to that of δ^2H with the heaviest values occurring along Forty Mile Wash (fig. 5).

Carbon-13 ($\delta^{13}C$). From this limited data set, carbon appears to become heavier from north to south (fig. 6). Stuckless and others (1991) suggested that the variation in $\delta^{13}C$ was likely due to upward leakage of ground water from the Paleozoic aquifer and the corresponding introduction of heavier carbon into the volcanic aquifer.

Strontium-87 ($\delta^{87}Sr$). $\delta^{87}Sr$ values (fig. 7) increase progressively from values between +0.5 and +2 beneath Yucca Mountain to much larger values to the southwest and southeast. This is part of a regional pattern of increasing $\delta^{87}Sr$ values from Payute Mesa on the north to the Amargosa Desert on the south (Peterman and others, 1994). The large $\delta^{87}Sr$ value at TW5 (southeast corner of area) reflects the presence of Precambrian rocks in the saturated zone. The origin of the large $\delta^{87}Sr$ value at BGMW-11 (Bond Gold monitor well) may be related to Precambrian rocks with large $\delta^{87}Sr$ which crop out at the southern end of Bare Mountain or to mineralized Paleozoic limestones at Bare Mountain which also contain Sr with elevated $\delta^{87}Sr$ values (Peterman and other (1993). The Forty Mile Wash ground water has distinctly larger $\delta^{87}Sr$ values (+3 to +3.5) than water beneath Yucca Mountain proper. These larger values probably reflect recharge occurring along Forty Mile Wash and interaction of infiltrating water with calcretes that have a mean $\delta^{87}Sr$ of +4.4 (Marshall and others, 1991).

Conclusions

The dissolved ion and isotopic composition of ground water in the Yucca Mountain area (fig. 1) is laterally (and probably vertically) inhomogeneous at the kilometer scale (figs. 2-7). This variability can be conceptualized as suggesting the presence of compositional domains even though their extent and the nature of the domain boundaries are not well constrained by the existing data: (1) Jackass Flat domain, (2) Forty Mile Canyon domain, (3) Yucca Mountain domains (east and west), (4) Crater Flat domains (east and west), and (5) downgradient domains. These domains may indicate compartmentalized flow and laterally variable flux, leakage from the Paleozoic aquifer, local recharge, or combinations thereof. The existence of the domains must be considered in refining the regional and site-scale hydrologic models. Understanding their origin and long-term stability is essential for performance assessment with regard to the release, dilution, and dispersion of radionuclides downgradient from the potential repository.

References

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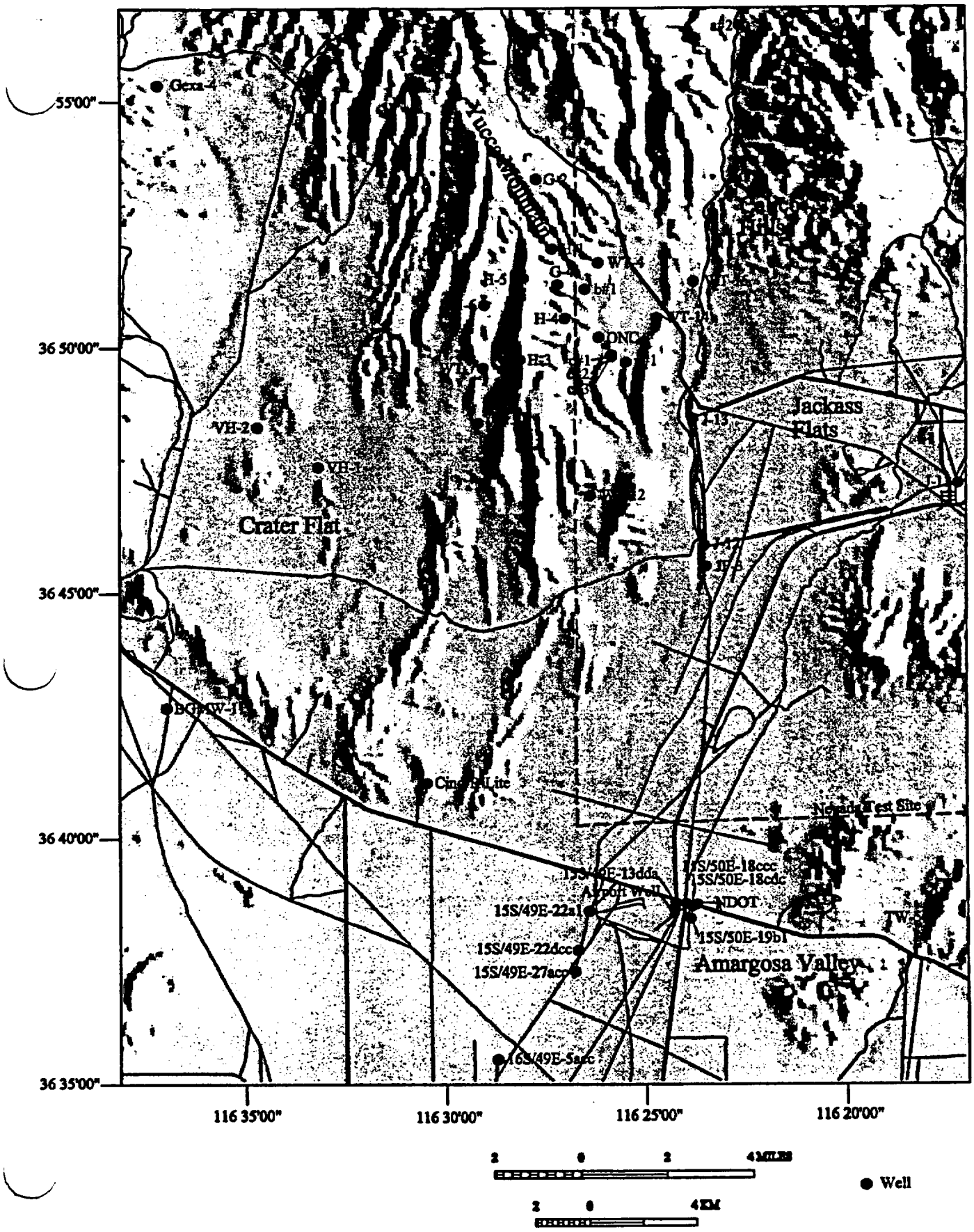

Figure 1. Map showing area of interest.

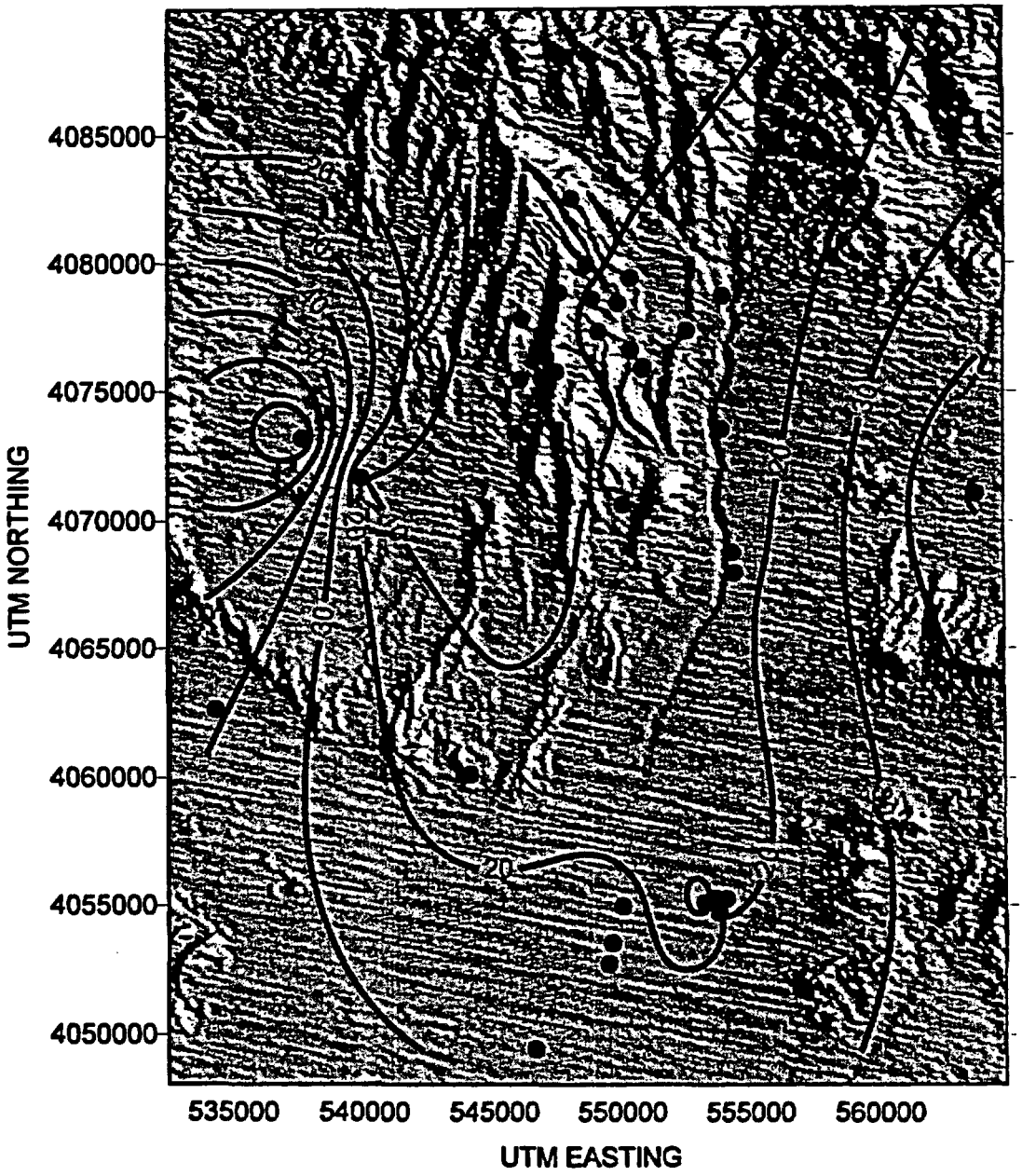

Figure 2.--Variation in calcium content in milligrams/liter (mg/L).

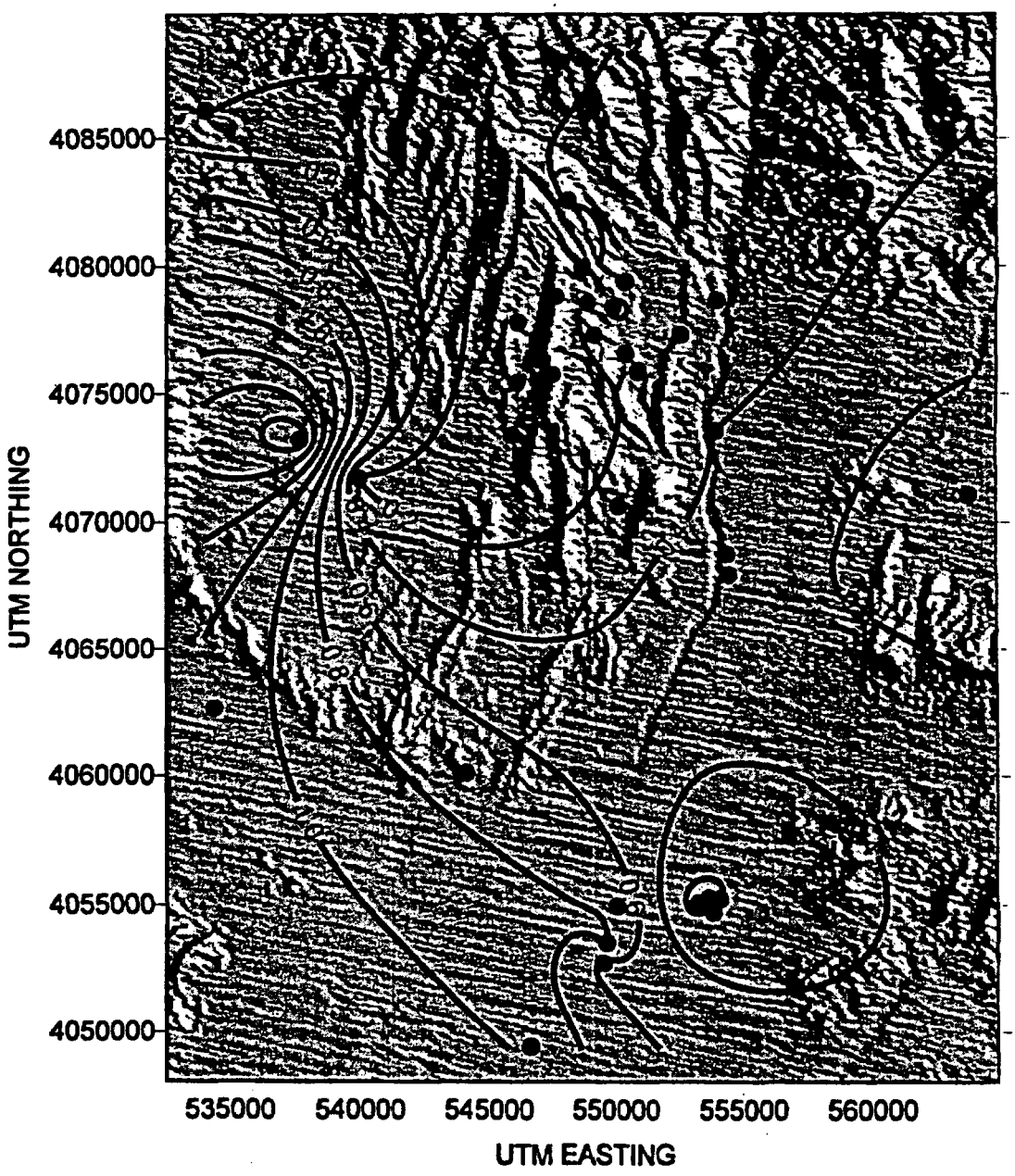

Figure 3.--Variation in the ratio (Ca+Mg)/(Na+K) as milliequivalents/liter.

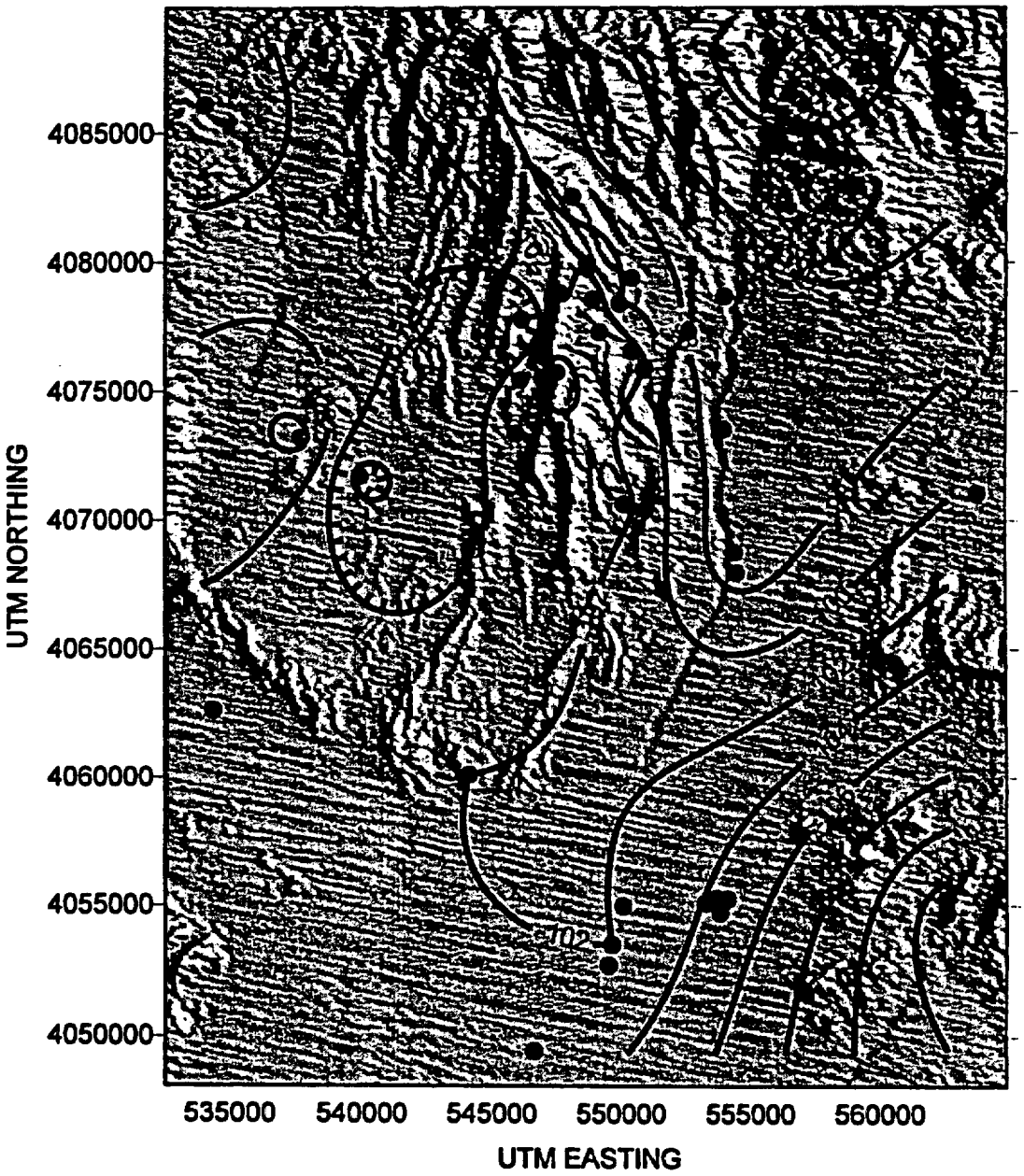

Figure 4.--Variation in δ^2H in permil.

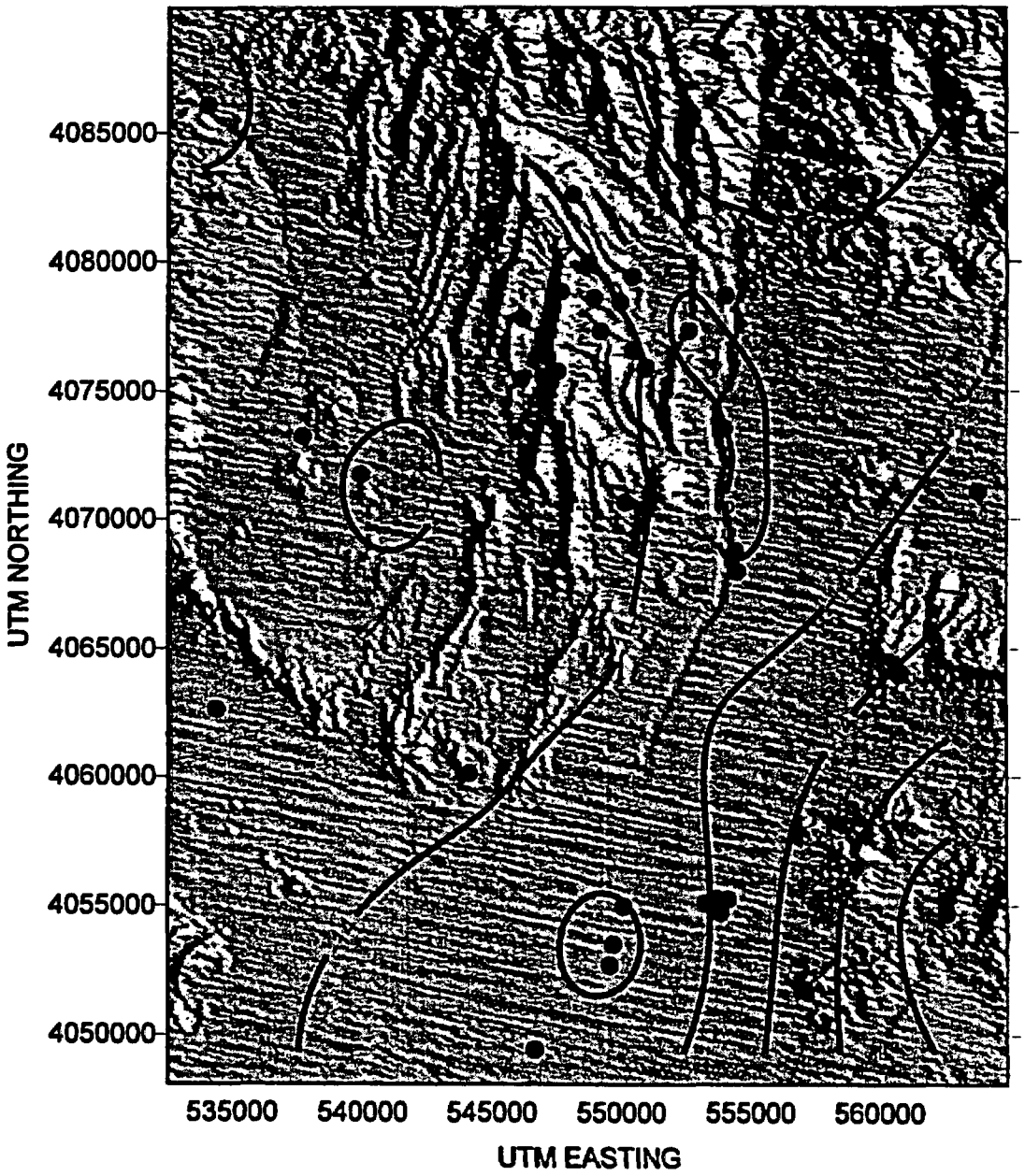

Figure 5.--Variation in $\delta^{18}O$ in permil.

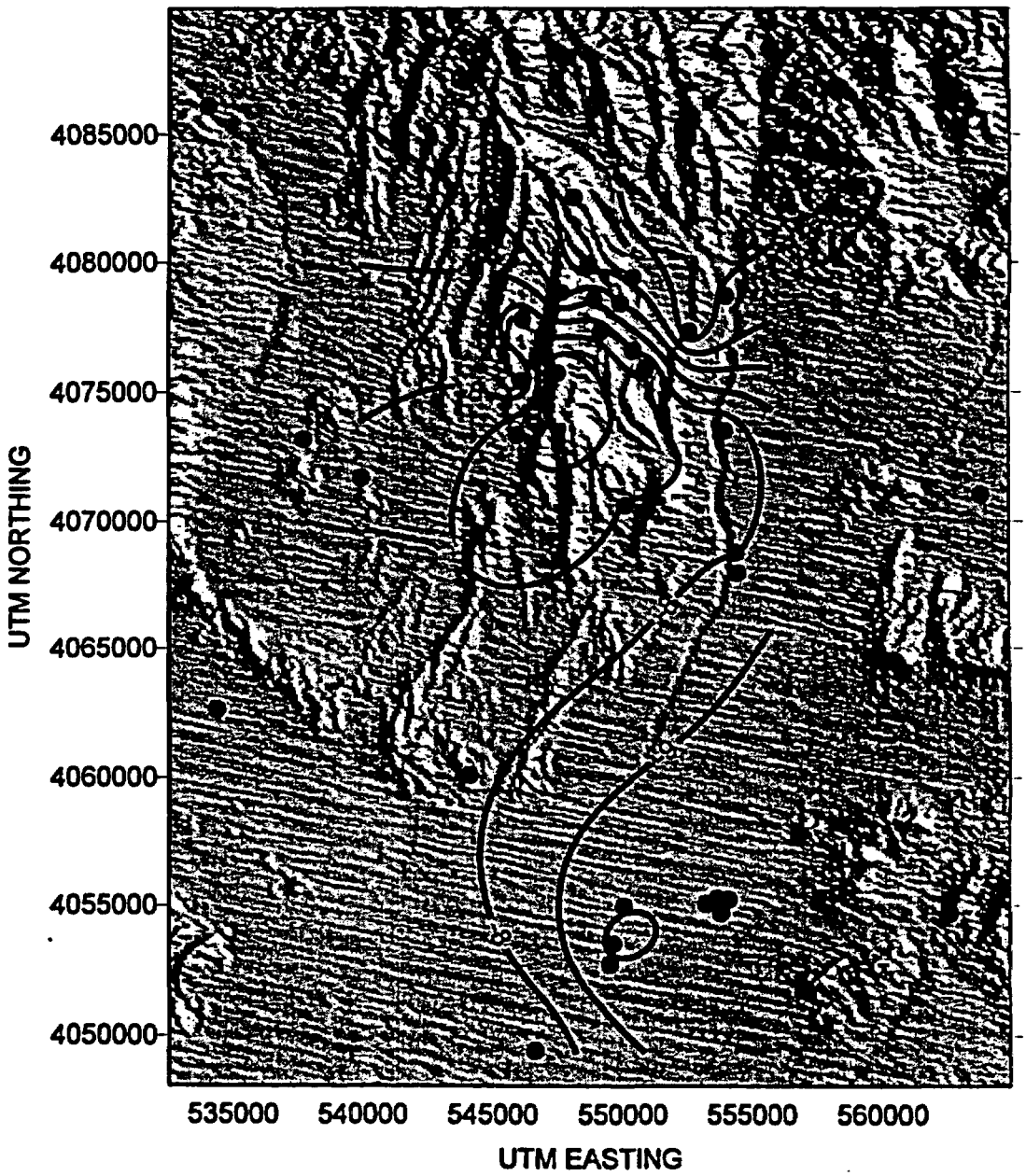

Figure 6.--Variation in $\delta^{13}C$ in permil.

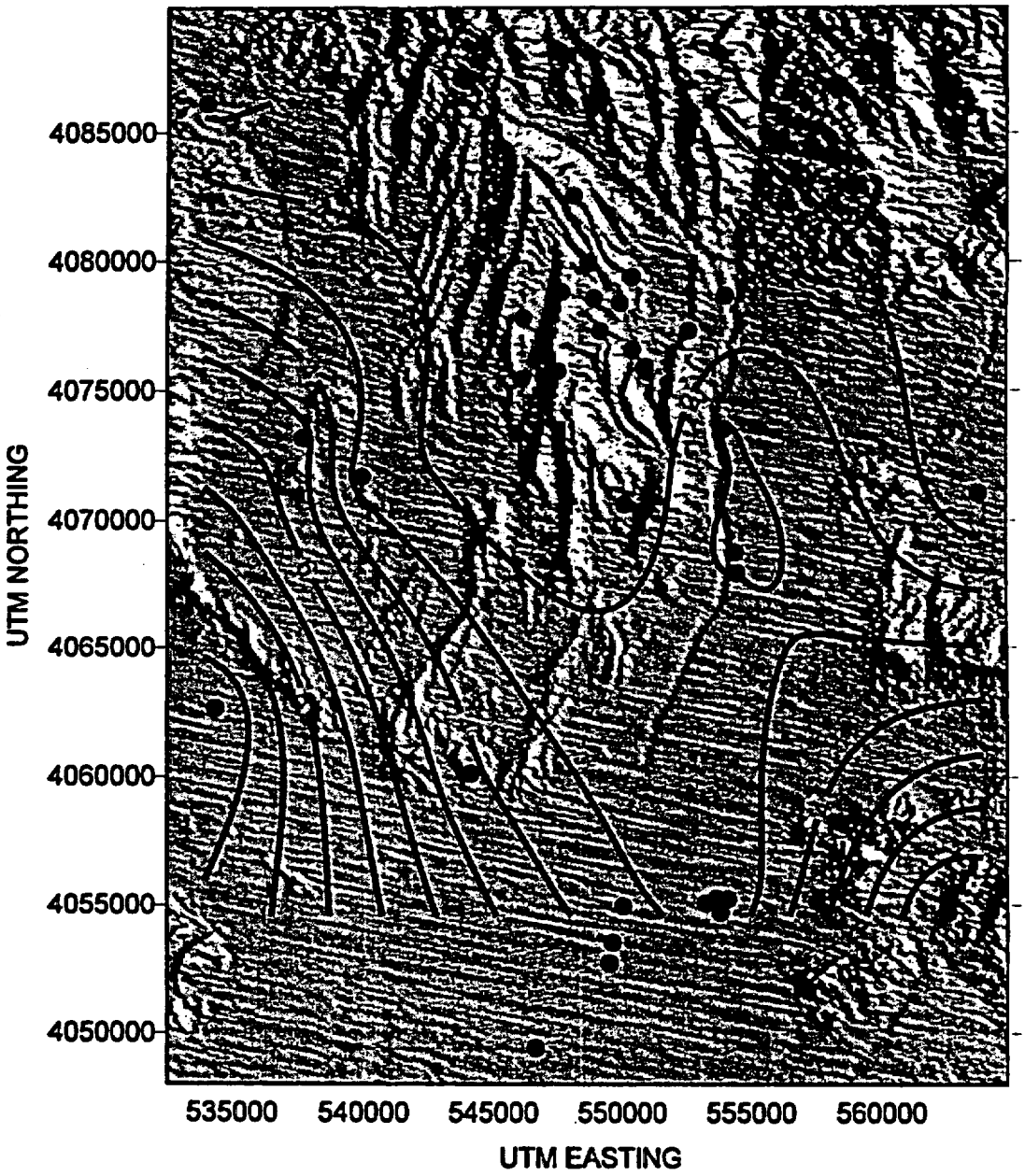

Figure 7.--Variation in $\delta^{87}Sr$ in permil.

Site Name	UTM-x	UTM-y	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev.	Well Depth	WT Depth
	meters	meters							meters	meters	meters
16S/49E-05acc	546664.5	4049439	36.591	363528	116.478	1162842	740304	1720	746	87	21
15S/49E-27acc	549552.9	4052722	36.621	363714	116.446	1162645	730330	1200	777	467	73
15S/49E-27acc	549552.9	4052722	36.621	363714	116.446	1162645	730403	1200	777	467	73
15S/49E-22dcc	549672.5	4053523	36.628	363740	116.444	1162638	721120	1430	784	148	78
15S/49E-22dcc	549672.5	4053523	36.628	363740	116.444	1162638	740304	1820	784	148	78
TW-5	562605.0	4054686	36.638	363815	116.300	1161759	940705	1635	931	244	207
15S/50E-19b1	553862.5	4054720	36.638	363818	116.398	1162351	580426			110	103
15S/50E-19b1	553862.5	4054720	36.638	363818	116.398	1162351	590626			110	103
15S/49E-22a1	550086.3	4054974	36.641	363827	116.440	1162623	580424		796	174	90
Airport Well	553289.0	4055086	36.642	363830	116.404	1162414	920324	1640	804	229	76
15S/50E-18cdc	553934.3	4055151	36.642	363832	116.397	1162348	681215	1515	812	120	105
NDOT well	554132.4	4055245	36.643	363835	116.394	1162340	910903	1530	810	151	105
NDOT well	554132.4	4055245	36.643	363835	116.394	1162340	920427	1415	810	151	105
NDOT well	554132.4	4055245	36.643	363835	116.394	1162340	950517	955	810	151	105
15S/50E-18ccc	553710.0	4055273	36.643	363836	116.399	1162357	520508		812	120	105
15S/50E-18ccc	553710.0	4055273	36.643	363836	116.399	1162357	570916		812	120	105
15S/50E-18ccc	553710.0	4055273	36.643	363836	116.399	1162357	721117	1110	812	120	105
15S/49E-13dda	553312.5	4055302	36.644	363837	116.404	1162413	570916		796	171	90
Cind-R-Lite Well	544027.0	4059809	36.685	364105	116.507	1163026	920916		831	140	101
Cind-R-Lite Well	544027.0	4059809	36.685	364105	116.507	1163026	950517	1210	831	140	101
Cind-R-Lite Well	544027.0	4059809	36.685	364105	116.507	1163026	950906	1030	831	140	101
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920304	1800	944	347	216
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920305	1735	944	347	216
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920305	1736	944	347	216
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920305	520	944	347	216
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	571031	1300	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	571101	1000	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	580425		953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	590219		953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	601220		953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	601220		953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	620331	1000	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	620802		953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	640526	1455	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	670104		953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	680815	1730	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	690421	1247	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	700608	1500	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	710326	1022	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	740501	920	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	911218	1540	953	347	226
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	930513		953	347	226
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	880412	1500	1075	399	345
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1100	1075	399	345
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950821	1400	1075	399	345
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	570916	1000	1050	405	317
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	570917	1730	1050	405	317
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	570918		1050	405	317
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	570919	1740	1050	405	317
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	571010	1000	1050	405	317
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	580424		1050	405	317
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	581216		1050	405	317
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UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	611221		1050	405	317
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	611221		1050	405	317
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810206	1805	963	762	184
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810208	905	963	762	184
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810211		963	762	184
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730	1530	963	762	184
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	910904	1545	974	1219	164
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	920326	1005	974	1219	164
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	920906		974	1219	164
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	950829	1100	974	1219	164
USW WT-10	545976.0	4073389	36.807	364825	116.485	1162905	880516	1000	1123	431	347
USW WT-10	545976.0	4073389	36.807	364825	116.485	1162905	960118	1315	1123	431	347

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters	Well Depth meters	WT Depth meters
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	630101	800	1011	1063	283
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	640525		1011	1063	283
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	670104		1011	1063	283
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	690421	1249	1011	1063	283
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	710326	922	1011	1063	283
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	911217	1207	1011	1063	283
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	930513		1011	1063	283
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	950516	1305	1011	1063	283
UE-25 WT-7	546148.2	4075461	36.826	364933	116.483	1162857	880604	1610	1197	491	421
UE-25 p#1 (0-1200 m)	551508.7	4075663	36.827	364938	116.423	1162521	830211		1114	1805	382
UE-25 p#1 (1300-1800 m)	551508.7	4075663	36.827	364938	116.423	1162521	830512		1114	1805	382
USW H-3	547537.0	4075762	36.828	364942	116.467	1162801	840314	1500	1483	1219	751
UE-25 c#2	550944.0	4075867	36.829	364945	116.429	1162543	840313	1200	1132	914	401
UE-25 c#2	550944.0	4075867	36.829	364945	116.429	1162543	840313	1230	1132	914	401
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	840509		1132	914	402
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950522	1600	1132	914	402
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950523	1130	1132	914	402
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950531	1700	1132	914	402
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830927	1740	1131	914	401
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830928	1700	1131	914	401
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830930	1001	1131	914	401
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830930	1000	1131	914	401
UE-25 ONC-1	550479.9	4076608	36.836	365009	116.434	1162602	941215		1163	469	433
USW H-4	549195.0	4077322	36.842	365032	116.448	1162654	820517		1249	1219	519
UE-25 WT#14	552638.0	4077337	36.842	365032	116.410	1162435	880326	1021	1076	399	[illegible]
USW H-6 (525-1220 m)	546196.1	4077816	36.847	365049	116.482	1162855	821016	1005	1302	1220	526
USW H-6 (753-835 m)	546196.1	4077816	36.847	365049	116.482	1162855	840620		1302	1220	526
USW H-6 (600-650 m)	546196.1	4077816	36.847	365049	116.482	1162855	840706		1302	1220	526
UE-25 h#1 (0-1220 m)	549954.5	4078422	36.852	365108	116.440	1162623	810901	1430	1201	1220	470
UE-25 h#1 (853-914 m)	549954.5	4078422	36.852	365108	116.440	1162623	820720		1201	1220	[illegible]
USW G-4	548938.0	4078590	36.854	365114	116.451	1162704	821209		1270	915	541
UE-25 WT#15	554033.7	4078702	36.854	365116	116.394	1162338	880423	1000	1083	415	354
USW H-5	547665.5	4078838	36.856	365122	116.465	1162755	820703		1477	1219	704
USW H-5	547665.5	4078838	36.856	365122	116.465	1162755	820726		1477	1219	704
USW H-1 (572-687 m)	548721.8	4079944	36.866	365158	116.453	1162712	801020		1303	1829	572
USW H-1 (687-1829 m)	548721.8	4079944	36.866	365158	116.453	1162712	801208		1303	1829	572
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960130	1415	1554	1831	534
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208	1300	1554	1831	534
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960412	1450	1554	1831	534
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960423	930	1554	1831	534
Gexa Well 4	534068.9	4086110	36.922	365520	116.618	1163703	910904	1015	1198	488	188
Gexa Well 4	534068.9	4086110	36.922	365520	116.618	1163703	920325	1025	1198	488	188
UE-29 a#2 (250-355 m)	555753.3	4088351	36.941	365629	116.374	1162226	820108		1215	422	29
UE-29 a#2 (87-213 m)	555753.3	4088351	36.941	365629	116.374	1162226	820115		1215	422	28

Site Name	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L	HCO_3 mg/L	CO_3 mg/L	NO_3 mg/L	F mg/L	SiO_2 mg/L	B mg/L
16S/49E-05acc	Qal		7.8	4.5	29	2.2	35	5.2	6.0	26	135	0	1.7	1.0	62	
15S/49E-27acc	Qal	42.2	7.8	-1.2	22	1.6	48	2.9	7.3	36	151	0	0.04	0.8	19	
15S/49E-27acc	Qal	46.0	8.0	-1.4	22	1.0	50	2.2	7.6	40	147	0	0.11	0.9	22	
15S/49E-22dcc	Qtal		7.8	0.9	27	2.0	43	4.6	8.5	33	149	0	1.4	0.9	49	
15S/49E-22dcc	Qtal	29.5	7.8	0.7	28	2.1	39	4.9	6.7	33	146	0	1.6	1.0	49	
TW-5	Qal	30.0	7.9	-1.6	33	17	130	12	21	99	395			3.4	19	0.58
15S/50E-19b1	Qal		8.2	1.0	19	4.9	112	6.0	17	133	173	0	6.1	1.4	43	
15S/50E-19b1	Qal	23.9	7.9	0.3	21	2.9	103	6.0	18	122	162	0	6.9	1.4	45	
15S/49E-22a1	Qal	27.8	8.0	-0.9	25	2.4	41	5.2	8.0	33	145	0	3.5	1.4	52	
Airport Well	Qal	27.5	9.0	0.2	5.6	0.23	70	1.5	10	46	110	7.0		1.8	40	
15S/50E-18cdc	Qal	25.1	8.0	-0.5	12	0.70	93	3.9	17	78	15.	0	6.4	2.5	38	0.18
NDOT well	Qal	28.5	8.0	3.3	17	0.83	110	4.0	15	110	160			1.9	46	
NDOT well	Qal	26.0	8.1	-2.7	16	0.80	97	3.8	16	110	160			2.0	41	
NDOT well	Qal		7.8	-1.9	16	0.81	97	3.7	13	110	160	0		1.9	44	
15S/50E-18ccc	Qal		7.9	0.5	16	2.4	119	4.2	25	124	166	0	6.5	1.9	36	0.29
15S/50E-18ccc	Qal		8.2	0.1	14	1.5	106	4.4	20	103	160	0	6.3	2.0	48	
15S/50E-18ccc	Qal		7.5	-1.0	17	0.60	93	4.1	13	100	157	0	0.86	2.1	34	
15S/49E-13dda	Qal		8.2	0.1	14	1.5	106	4.4	20	103	160	0	6.3	2.0	48	
Cind-R-Lite Well	Tv			-0.7	13	6.3	74	3.9	9.2	47	194			2.5	54	
Cind-R-Lite Well	Tv		8.0	-2.2	12	6.1	72	3.9	9.3	46	194			2.5	55	
Cind-R-Lite Well	Tv		7.6	-3.4	12	6.1	69	4.1	9.2	45	193		1.1	2.4	54	
JF-3	Tv	27.0	7.6	0.6	18	3.2	40	8.7	13	32	120			1.6	56	0
JF-3	Tv	26.5	7.7	0.7	17	3.0	38	8.7	8.2	31	120			1.6	56	
JF-3	Tv	26.5	7.7	1.3	18	3.1	38	8.9	10	30	120			1.6	56	
JF-3	Tv	26.5	7.7	2.8	18	3.2	40	7.6	8.2	31	120			1.6	56	
UE-25 J-12	Tv	25.6	7.9	-5.2	7.8	2.6	45		12	18	112	0		5.5	32	0.60
UE-25 J-12	Tv	25.6	8.2	-4.7	7.6	5.2	45		14	17	125	0		5.0	42	0.30
UE-25 J-12	Tv	25.5	8.2	-0.1	9.6	1.9	46	5.2	7.0	24	121	0	0	1.8	26	
UE-25 J-12	Tv	25.6	7.4	-0.1	14	1.5	42	4.4	8.0	24	118	0	0.70	1.8	49	
UE-25 J-12	Tv		8.0	-1.6	19	0	47		14	24	129	0		1.7	46	1.30
UE-25 J-12	Tv	25.6	8.3	-0.7	40	7.3	80		16	182	88	12	0.70	1.3	33	1.30
UE-25 J-12	Tv	25.0	8.0	-0.5	14	2.5	39	6.0	8.8	19	119	0	7.7	1.2	60	
UE-25 J-12	Tv		7.4	-0.4	16	1.9	43		11	8.2	137	0		2.0	54	0.00
UE-25 J-12	T.	26.5	6.8	-0.6	17	0.90	40	4.6	7.4	21	120	0	5.3	2.2	56	0.11
UE-25 J-12	Tv		7.8	-0.9	15	2.3	41	5.0	8.3	22	120	0	6.5	2.6	58	0.14
UE-25 J-12	Tv		7.7	-2.2	22	3.2	46	5.4	54	24	92	0	0.40	2.3	34	0.09
UE-25 J-12	Tv	27.0	7.2	-0.7	14	2.5	40	5.5	6.5	22	117	0	9.7	2.1	56	0.13
UE-25 J-12	Tv	26.5	7.3	-1.5	14	2.2	42	4.9	8.8	22	122	0	6.8	1.9	54	0.18
UE-25 J-12	Tv	26.8	7.6	-3.3	14	2.1	38	5.1	7.3	22	119	0	7.0	2.1	54	0.18
UE-25 J-12	Tv	27.0	7.6	-0.8	15	2.2	38	4.6	7.7	23	118	0	1.9	1.6	58	0.18
UE-25 J-12	Tv	26.5		0.6	15	2.2	39	5.1	8.3	23	120			0.8	65	
UE-25 J-12	Tv	26.7	7.4	8.4	14	2.4	40	4.0	8.0	21	100	0			27	
UE-25 WT#12	Tpt/Th		7.6	-0.1	15	0.30	66	2.6	7.8	28	167		1.0	3.1	47	
UE-25 WT#12	Tpt/Th			5.3	14	0.30	62	2.0	6.9	24	137		1.2	3.1	47	
UE-25 WT#12	Tpt/Th			100.0	14	0.30	63	2.0							47	
UE-25 J-11	Th	35.0	8.1	-0.2	80	19	161		30	488	98			1.1	49	0.90
UE-25 J-11	Th	35.0	8.1	-0.3	84	19	150		28	473	103	0		1.1	49	1.7
UE-25 J-11	Th	33.3	7.8	0.6	85	14	157	16	20	484	102	0	7.4	0.9	67	
UE-25 J-11	Th	35.0	7.6	-0.1	104	16	262		210	488	112	0		0.7	59	0.90
UE-25 J-11	Th	35.6	8.0	-0.4	72	11	153		22	422	105	0		1.5	54	0.90
UE-25 J-11	Th	35.6	8.0	0.2	84	13	154	16	18	479	104	0	5.8	1.0	67	
UE-25 J-11	Th	35.6	7.6	0.2	82	13	143	15	18	449	102	0	8.0	1.1	68	
UE-25 J-11	Th		7.7	-0.2	83	11	164		26	463	110	0		1.0	39	2.5
UE-25 J-11	Th		7.4	-0.4	51	4.9	158		28	394	50	0		2.1	8	0.60
UE-25 J-11	Th		8.1	-0.2	56	10	186		23	454	98	0		1.2	26	0.60
UE-25 J-11	Th		7.9	-0.1	75	15	149		18	435	115	0		1.2	37	0.90
USW VH-1	Tcb	35.2	7.9	2.6	11	1.6	79	1.9	11	44	158			2.7	50	
USW VH-1	Tcb	35.5	7.5	2.5	10	1.5	80	1.9	10	45	158			2.7	50	
USW VH-1	Tcb	35.5	7.5	1.6	9.9	1.5	78	1.8	10	44	158			2.7	49	
USW VH-1	Tcb	35.5	7.6	-4.4	11	1.5	68		10	40	165			2.9	49	
USW VH-2	Tv	33.0	7.0	-0.6	81	30	69	8.3	15	150	380			1.1	27	
USW VH-2	Tv	32.5	7.0	-2.0	77	29	71	8.6	20	140	390			1.1	26	
USW VH-2	Tv			0.4	82	31	72	8.0	15	140	397			1.1	27	0
USW VH-2	Tv		7.4	-2.9	74	29	71	7.6	14	140	400			1.2	25	
USW WT-10	Tpt		8.3	-0.6	2.7	0.07	94	1.1	7.8	34	202		4.3		47	
USW WT-10	Tpt	38.5	8.5	0.5	2.5	0.02	95	0.9	7.8	33	170	10	1.0	3.7	46	

Site Name	Aquifer	Temp	pH	Charge	Ca	Mg	Na	K	Cl	SO_4	HCO_3	CO_3	NO_3	F	SiO_2	B
		oC		Balance	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
UE-25 J-13	Tpt	30.6	7.0	1.3	14	2.4	46	6.6	8.4	25	124	0	5.6	2.0	57	
UE-25 J-13	Tpt	31.1	6.8	-0.9	14	1.8	48	5.0	7.4	23	136	0	4.5	2.4	58	0.14
UE-25 J-13	Tpt		7.6	-0.6	13	2.1	44	4.8	7.2	18	126	0	6.8	2.7	61	0.12
UE-25 J-13	Tpt	31.0	7.3	2.2	14	2.5	44	5.4	5.4	18	124	0	9.0	2.4	57	0.07
UE-25 J-13	Tpt	31.0	7.4	-1.8	12	2.1	42	5.0	7.1	17	124	0	7.2	2.4	57	0.07
UE-25 J-13	Tpt	30.0	7.6	-5.7	13	1.8	42	4.8	7.8	22	130		9.3	2.3	64	
UE-25 J-13	Tpt	29.3	7.3	6.9	12	1.9	41	4.0	7.6	18	105				27	
UE-25 J-13	Tpt		7.4	1.0	12	1.8	44	4.6	7.0	17	123	0	2.0	2.4	61	
UE-25 WT-7	Tv		8.7	-2.5	2.6	0.18	97	2.1	13	7.2	252				20	
UE-25 p#1 (0-1200 m)	Tcp	57.0	6.7	-3.0	94	31	150	12	26	78	753			4.9	44	
UE-25 p#1 (1300-1800 m)	DSlm	56.0	6.6	-2.3	100	39	150	12	28	160	694			4.7	41	
USW H-3	Tct	26.5	9.0	-2.7	0.80	0.02	120	1.1	5.5	31	274		0.10	5.5	43	
UE-25 c#2	Tcb	40.5	7.9	-2.1	12	0.30	53	2.0	7.0	22	143			2.1	53	
UE-25 c#2	Tcb	40.5	7.8	-2.5	12	0.40	54	2.1	7.1	22	143		5.3	2.0	54	
UE-25 c#3	Tcb/Tct	40.8	7.7	-2.9	11	0.40	55	1.9	7.2	22	143		5.8	2.0	53	
UE-25 c#3	Tcb/Tct	41.4	7.7	2.6	11	0.30	58	1.9	6.4	19	140			2.2	60	
UE-25 c#3	Tcb/Tct	41.4	7.7	1.6	11	0.30	57	1.9	6.5	19	141			2.2	58	
UE-25 c#3	Tcb/Tct	40.3	7.7	-7.6	11	0.30	56	1.9	6.4	19	175			2.2	57	
UE-25 c#1	Tcb/Tct	41.2	7.5	-1.1	11	0.35	56	2.2	7.8	23	142			2.1	56	
UE-25 c#1	Tcb/Tct	41.5	7.6	2.0	13	0.41	57	2.1	7.5	21	142			2.2	57	
UE-25 c#1	Tcb/Tct	41.7	7.6	-1.2	11	0.34	56	2.0	7.4	23	138		4.7	2.1	56	
UE-25 c#1	Tcb/Tct	41.7	7.6	-0.8	11	0.34	56	2.1	7.2	20	140		5.2	2.2	56	
UE-25 ONC-1	Th/Tcp		8.7	1.6	13	1.1	51	3.6	7.1	24	115	8.8	5.2		27	0.12
USW H-4	Tcb/Tct	34.8	7.4	3.8	17	0.29	73	2.6	6.9	26	173			4.6	46	
UE-25 WT#14	Th		7.3	-1.6	10	0.80	45	5.0	8.2	22	119			1.8	57	
USW H-6 (525-1220 m)	Tcb/Tct		8.1	-2.0	4.1	0.09	86	1.3	7.6	29	188			4.7	48	
USW H-6 (753-835 m)	Tcb/Tct	41.6	8.3	0.1	1.4	0.02	88	1.4	7.2	25	183			3.9	47	
USW H-6 (600-650 m)	Tcb/Tct	37.2	8.3	-0.4	4.7	0.07	88	1.4	7.4	32	184			4.7	49	
UE-25 h#1 (0-1220 m)	Th/Tct	36.0	7.5	-0.9	17	0.59	46	3.5	8.5	22	134		4.0	1.6	52	
UE-25 h#1 (853-914 m)	Tcb	37.2	7.1	-0.5	18	0.72	46	2.8	7.5	21	138		4.0	1.6	51	
USW G-4	Tct	35.6	7.7	3.7	13	0.20	57	2.1	5.9	19	139			2.5	45	
UE-25 WT#15	Tpt		7.5	2.3	12	1.7	62	4.6	12	16	166				53	
USW H-5	Tcb/Tct	36.5	7.8	2.8	1.9	0.01	60	2.1	6.1	16	124			1.4	48	
USW H-5	Tcb/Tct	35.3	7.9	2.6	2.0	0	60	2.1	6.6	16	124			1.4	48	
USW H-1 (572-687 m)	Tcp	33.0	7.7	-1.8	4.5	0	51	2.4	5.7	18	122			1.2	47	
USW H-1 (687-1829 m)	Tcb	34.7	7.5	1.4	6.2	0	51	1.6	5.8	19	115			1.0	40	
USW G-2	Th/Tct	32.2	7.6	10.8	8.6	0.55	47	5.5			130		0.70		51	
USW G-2	Th/Tct	34.4	7.5	0.8	8.1	0.52	47	5.5	6.4	15	124		0.64	1.0	51	
USW G-2	Th/Tct	34.2	7.5	2.3	8.3	0.50	48	5.6	6.1	15	123		0.70	1.0	51	
USW G-2	Th/Tct	34.2	7.5	0.5	7.7	0.47	46	5.3	6.5	15	121			1.0	51	
Gexa Well 4	Tv	32.0	8.0	-3.4	12	0.40	69	3.4	13	47	150			3.4	48	
Gexa Well 4	Tv	31.5	7.7	-1.2	11	0.34	73	3.1	14	44	150			3.0	48	
UE-29 a#2 (250-355 m)	Th	25.1	7.2	-2.3	10	0.20	44	1.1	11	22	107			1.0	44	
UE-29 a#2 (87-213 m)	Th	22.7	7.0	-3.4	10	0.30	44	1.3	8.8	21	107		9.7	0.9	44	

Site Name	Mn mg/L	Sr mg/l	Li mg/l.	[illegible] mg/L	TDS calc mg/L	Comment	Reference
16S/49E-05acc	0	0.05	0.050		235	A. Sasse Well	5.22
15S/49E-27acc	0.0200	0.070[illegible]	0.040		212	DH AM101 SWSWNE 27-15S-49E	17.22
15S/49E-27acc	0	0.0600	0.050		218	DH AM101 SWSWNE 27-15S-49E	22
15S/49E-22dcc	0.0200	0.0800	0.040		243		22
15S/49E-22dcc	0	0.0500	0.040		237		17.22
TW-5	0.1900	0.9800	0.190		529		48
15S/50E-19b1	0			3.1	428	Lathrops Well	22
15S/50E-19b1	0	0		3.4	406	Lathrops Well, 15S/50-18c5	22.54
15S/49E-22a1	0	0		1.5	243	West of Lathrops Well, Amargosa Desert 15S/49-14a1	17.22.54
Airport Well					236		12.48
15S/50E-18cdc	0	0.1000	0.080		327		17.22
NDOT well				3.5	384		12.48
NDOT well				2.2	365		12.48
NDOT well	0			1.8	365		45
15S/50E-18ccc					417		22
15S/50E-18ccc	0			1.8	384		22
15S/50E-18ccc	0	0.0800	0.090	1.8	342		17.22
15S/49E-13dda	0	0			384	Dong's Well	22
Cind-R-Lite Well	0.0020		0.070		305	Lathrops Well Cone	10.48
Cind-R-Lite Well	0			2.8	302		48.45
Cind-R-Lite Well	0		0.066	2.2	298		48.45
JF-3	0.0030		0.037		232		12.38.48
JF-3	0.0010		0.036		223		12.38.48
JF-3	0.0020		0.038		225		12.38.48
JF-3	0.0020		0.038		225		12.38.48
UE-25 J-12					178		17.48
UE-25 J-12					197		17.48
UE-25 J-12	0			0.30	181	Amargosa Desert 14S/50-6a1	17.22.48.54
UE-25 J-12	0	0		0.50	204		17.22.48.54
UE-25 J-12					215		17.22.48
UE-25 J-12					416	Chlorinated with J-11 water	17.22.48
UE-25 J-12	0		0	0.60	217		17.22.48.54
UE-25 J-12					203	Date sample received in lab	17.22.48
UE-25 J-12	0	0.0320	0.022	0.60	214		17.22.48.54
UE-25 J-12	0.0300	0.1000	0.045		220		17.22.48
UE-25 J-12	0.1900	0.0800	0.060		237		17.22.48
UE-25 J-12	0	0.0900	0.040		216		17.22.48
UE-25 J-12	0	0.0500	0.040		217		17.22.54
UE-25 J-12	0.0100	0.0100	0.040	0.60	210		2.3.15.17.22.48
UE-25 J-12	0.0100	0.0200	0.040		210		17.22.48
UE-25 J-12			0.037	0.30	218		12.17.48
UE-25 J-12		0.0420	0.046	0.60	166		9.17.48
UE-25 WT#12			0.070		253		39
UE-25 WT#12	0.0600		0.060		228		36
UE-25 WT#12	0.0500		0.060		126		36
UE-25 J-11					876		17.22.48
UE-25 J-11					855		17.22.48
UE-25 J-11	0	0		2.4	902		17.22.48.54
UE-25 J-11					1195		17.22.48
UE-25 J-11					786		17.22.48
UE-25 J-11	0			2.5	889		17.22.48.54
UE-25 J-11	0	0		2.7	847		17.22.48.54
UE-25 J-11					841		17.22.48
UE-25 J-11					671	35 minutes after pump start	17.22.48
UE-25 J-11					804	15 minutes after pump start	17.22.48
UE-25 J-11					787	Pump started	17.22.48
USW VH-1		0.0700	0.090		279		2.3.17.22.44.48
USW VH-1		0.0700	0.090		279		2.3.17.22.44.48
USW VH-1		0.0600	0.090		275		2.3.15.17.22.44.48
USW VH-1	0.0500	0.0600	0.090		263		17.38.48
USW VH-2	0.0130			6.9	569		12
USW VH-2	0.0100			6.8	565		12
USW VH-2	0.0040	0.5700	0.093		572		10.12
USW VH-2	0		0.087		559		12.45
USW WT-10			0.090		290		39
USW WT-10	0.0400		0.082		284		36

Site Name	Mn	Sr	Li	U	TDS calc	Comment	Reference
	mg/L	mg/L	mg/L	ug/L	mg/L		
UE-25 J-13	0.2400	0.1000	0.040	0.70	228		17,22,41,48,54
UE-25 J-13	0.0280	0.0600	0.046	0.70	231		17,22,41,48,54
UE-25 J-13	0.0300	0.0900	0.040		222		17,22,41,48
UE-25 J-13	0	0.0900	0.045		219		17,22,41,48
UE-25 J-13	0	0.0200	0.040	0.40	213		2,3,15,17,22,41,48
UE-25 J-13	0	0.0420	0.038	0.60	231		12,17,48
UE-25 J-13	0.0012	0.0365	0.090	0.40	163		8,17,48
UE-25 J-13				0.40	212		45,48
UE-25 WT-7			0.150		266		17,39
UE-25 p#1 (0-1200 m)		0.4900	0.310		811		7,15,17,22,48
UE-25 p#1 (1300-1800 m)		0.4500	0.590		877		7,15,17,22,48
USW H-3		0.0010	0.220		342		3,15,17,22,42,43
UE-25 c#2		0.0450	0.094		222		3,15,17,22
UE-25 c#2		0.0450	0.092		229		3,15,17,22
UE-25 c#3	0.0030	0.0400	0.110		229		3,15,17,22
UE-25 c#3	0.0200	0.0600	0.100		228		17,39
UE-25 c#3	0.0100	0.0600	0.090		225		17,39
UE-25 c#3	0.0100	0.0700	0.080	1.1	240		17,39
UE-25 c#1		0.0340	0.170		228		17,22
UE-25 c#1		0.0350	0.140		230		17,22
UE-25 c#1		0.0350	0.120		231		3,15,17,22
UE-25 c#1		0.0340	0.120		229		3,15,17,22
UE-25 ONC-1	0.6900		0.084		196		20,53
USW H-4		0.0270	0.130		262		2,3,15,17,50,51
UE-25 WT#14			0.050		208		39
USW H-6 (525-1220 m)		0.0080	0.082		273		2,3,6,8,15,22
USW H-6 (753-835 m)	0	0.0030	0.071		264		3,15,17,22
USW H-6 (600-650 m)		0.0080	0.063		278		3,15,17,22
UE-25 b#1 (0-1220 m)		0.0380	0.220	38	221		2,3,13,15,17,22
UE-25 b#1 (853-914 m)		0.0470	0.120	47	221		2,3,13,15,17,22
USW G-4		0.0170	0.067		213		2,3,14,22
UE-25 WT#15			0.380		243		48
USW H-5		0.0090	0.062		197		2,3,15,17,22,32
USW H-5		0.0040	0.071		197		2,3,17,22,32
USW H-1 (572-687 m)		0.0200	0.040		190		2,3,15,17,22,34,35
USW H-1 (687-1829 m)		0.0050	0.040		181		2,3,15,17,22,34,35
USW G-2	0.1300	0.0110	0.050	1.6	177		36
USW G-2	0.0650	0.0103	0.048	1.3	196		36
USW G-2	0.0600	0.0100	0.044	1.1	197		36
USW G-2	0.0420	0.0101	0.043	1.2	193		36
Gexa Well 4	0.0080			4.7	270		12,30,48
Gexa Well 4	0.0100			3.9	270		12,30,48
UE-29 a#2 (250-355 m)		0.0390	0.100		186		2,3,15,17,22
UE-29 a#2 (87-213 m)		0.0330	0.110		193		2,3,15,17,22

Site Name	UTM-x	UTM-y	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev.
	meters	meters							meters
16S/49E-05acc	546664.5	4049439	36.591	363528	116.478	1162842	740304	1720	746
15S/49E-22dcc	549672.5	4053523	36.628	363740	116.444	1162638	740304	1820	784
15S/49E-22dcc	549672.5	4053523	36.628	363740	116.444	1162638	721120	1430	784
TW-5	562605.0	4054686	36.638	363815	116.300	1161759	940124		
TW-5	562605.0	4054686	36.638	363815	116.300	1161759	940714		
TW-5	562605.0	4054686	36.638	363815	116.300	1161759	940705	1635	931
NDOT well	554132.4	4055245	36.643	363835	116.394	1162340	921016		810
NDOT well	554132.4	4055245	36.643	363835	116.394	1162340	920500		810
Cowboy Joes	554132.4	4055245	36.643	363835	116.394	1162340	920321		
Cind-R-Lite Well	544027.0	4059809	36.685	364105	116.507	1163026			831
Cind-R-Lite Well	544027.0	4059809	36.685	364105	116.507	1163026	941013		831
Cind-R-Lite Well	544027.0	4059809	36.685	364105	116.507	1163026	950517	1210	831
BGMW-11	534410.9	4062631	36.711	364238	116.615	1163653			786
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920304	1800	944
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920305	1735	944
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920305	1736	944
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	920305	520	944
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324			953
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	910200		953
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	911218	1500	953
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	911218	1540	953
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	911218	1520	953
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	640526	1455	953
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	710326	1022	953
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	930513		953
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950821		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950820		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950818		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950910	1200	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950909	1215	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616			1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616			1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950911	1400	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1440	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1440	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616			1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1100	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	880412	1500	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1100	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950821	1400	1075
UE-25 J-11 (331 m)	563816.0	4071049	36.785	364706	116.285	1161706			1050
UE-25 J-11 (353 m)	563816.0	4071049	36.785	364706	116.285	1161706			1050
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963

Site Name	UTM-x	UTM-y	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev.
	meters	meters							meters
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810211		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730	1530	963
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	910200		974
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	920400		974
USW WT-10	545976.0	4073389	36.807	364825	116.485	1162905	960118	1330	1123
USW WT-10	545976.0	4073389	36.807	364825	116.485	1162905	880516	1000	1123
USW WT-10	545976.0	4073389	36.807	364825	116.485	1162905	960118	1315	1123
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	881201		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	890503		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	910200		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	911217	1127	1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	911217	1147	1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	911217	1207	1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	911217	1207	1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	911217	1127	1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	960101		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	940225		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	940225		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	940225		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	961008		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	950830		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	640525		1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	710326	922	1011
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	930513		1011
UE-25 WT-7	546148.2	4075461	36.826	364933	116.483	1162857	880603		1197
UE-25 WT-7	546148.2	4075461	36.826	364933	116.483	1162857	880604	1610	1197
UE-25 p#1 (1300-1800 m)	551508.7	4075663	36.827	364938	116.423	1162521			1114
UE-25 p#1 (1300-1800 m)	551508.7	4075663	36.827	364938	116.423	1162521	830720		1114
UE-25 p#1 (0-1200 m)	551508.7	4075663	36.827	364938	116.423	1162521	830211		1114
UE-25 p#1 (1300-1800 m)	551508.7	4075663	36.827	364938	116.423	1162521	830512		1114
USW H-3	547537.0	4075762	36.828	364942	116.467	1162801	840314	1500	1483
UE-25 c#2	550944.0	4075867	36.829	364945	116.429	1162543	840313	1200	1132
UE-25 c#2	550944.0	4075867	36.829	364945	116.429	1162543	840313	1230	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950528		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950522	1600	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950523	1130	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950531	1700	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950528	600	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950525		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950526		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950528	600	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960228		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960313		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960314		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960316		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960315		1132

Site Name	UTM-x	UTM-y	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev.
	meters	meters							meters
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960318		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960224		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960225		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960226		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960228		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	970219	1000	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	970219	1000	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	840509		1132
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830930	1001	
UE-25 ONC-1	550479.9	4076608	36.836	365009	116.434	1162602	950316		1163
UE-25 ONC-1	550479.9	4076608	36.836	365009	116.434	1162602	941215	930	1163
USW H-4	549195.0	4077322	36.842	365032	116.448	1162654	820517		1249
UE-25 WT#14	552638.0	4077337	36.842	365032	116.410	1162435	880326	1021	1076
USW H-6 (525-1220 m)	546196.1	4077816	36.847	365049	116.482	1162855	821016	1005	1302
USW H-6 (753-835 m)	546196.1	4077816	36.847	365049	116.482	1162855	840620		1302
USW H-6 (600-650 m)	546196.1	4077816	36.847	365049	116.482	1162855	840706		1302
UE-25 b#1 (0-1220 m)	549954.5	4078422	36.852	365108	116.440	1162623	810901	1430	1201
UE-25 b#1 (853-914 m)	549954.5	4078422	36.852	365108	116.440	1162623	820720		1201
USW G-4	548938.0	4078590	36.854	365114	116.451	1162704	821209		1270
UE-25 WT#15	554033.7	4078702	36.854	365116	116.394	1162338	880423	1000	1083
USW H-5	547665.5	4078838	36.856	365122	116.465	1162755	820703		1477
USW H-5	547665.5	4078838	36.856	365122	116.465	1162755	820726		1477
UE-25 WT#4	550445.9	4079420	36.861	365140	116.434	1162603	880411		1169
USW H-1 (572-687 m)	548721.8	4079944	36.866	365158	116.453	1162712	801020		1303
USW H-1 (687-1829 m)	548721.8	4079944	36.866	365158	116.453	1162712	801208		1303
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735			
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735			
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735			
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960130		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960412		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960423		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	950208		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	950208		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960412	1450	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208	1415	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960423	930	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960130	1630	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208	1300	1554
Gexa Well 4	534068.9	4086110	36.922	365520	116.618	1163703	960814	1430	
UE-29 a#2 (250-355 m)	555753.3	4088351	36.941	365629	116.374	1162226	820108		1215
UE-29 a#2 (87-213 m)	555753.3	4088351	36.941	365629	116.374	1162226	820115		1215

Site Name	Well Depth	WT Depth	Aquifer	^{3}H	$\delta^{2}H$	$\delta^{18}O$	$\delta^{13}C$	^{14}C	U
	meters	meters		TU	permil	permil	permil	PMC	ug/L
16S/49E-05acc	87	21	Qal		-103.0	-13.20	-7.10	19.3	
15S/49E-22dcc	148	78	Qtal		-102.0	-12.80		15.6	
15S/49E-22dcc	148	78	Qtal		-102.0	-12.80	-10.20		
TW-5			Qal						
TW-5			Qal						
TW-5	244	207	Qal		-113.2	-15.40			
NDOT well	151	105	Qal						2.5
NDOT well	151	105	Qal						
Cowboy Joes			Qal						
Cind-R-Lite Well	140	101	Tv						1.5
Cind-R-Lite Well	140	101	Tv						
Cind-R-Lite Well	140	101	Tv		-102.0	-13.65			
BGMW-11		72	Qal						
JF-3	347	216	Tv		-97.0	-13.15			0.82
JF-3	347	216	Tv		-98.0	-13.20			0.81
JF-3	347	216	Tv		-97.0	-13.20	-8.60	30.7	0.81
JF-3	347	216	Tv		-97.5	-13.15			0.81
UE-25 J-12	347	226	Tv						0.30
UE-25 J-12	347	226	Tv						
UE-25 J-12	347	226	Tv						
UE-25 J-12	347	226	Tv	0.31	-96.0	-12.95			
UE-25 J-12	347	226	Tv						
UE-25 J-12	347	226	Tv	24					
UE-25 J-12	347	226	Tv		-97.5	-12.80	-7.90	32.2	
UE-25 J-12	347	226	Tv	0.20					
UE-25 WT#12	399	345	Tpt/Th						2.7
UE-25 WT#12	399	345	Tpt/Th						2.6
UE-25 WT#12	399	345	Tpt/Th						
UE-25 WT#12	399	345	Tpt/Th						
UE-25 WT#12	399	345	Tpt/Th						
UE-25 WT#12	399	345	Tpt/Th						
UE-25 WT#12	399	345	Tpt/Th						
UE-25 WT#12	399	345	Tpt/Th						
UE-25 WT#12	399	345	Tpt/Th						
UE-25 WT#12	399	345	Tpt/Th						2.5
UE-25 WT#12	399	345	Tpt/Th						2.5
UE-25 WT#12	399	345	Tpt/Th						2.6
UE-25 WT#12	399	345	Tpt/Th						2.6
UE-25 WT#12	399	345	Tpt/Th		-102.5	-13.75	-8.10	11.4	
UE-25 WT#12	399	345	Tpt/Th		-103.0	-13.70	-6.60		2.5
UE-25 WT#12	399	345	Tpt/Th		-102.0	-13.63	-6.50		2.7
UE-25 J-11 (331 m)	405	317	Tb						
UE-25 J-11 (353 m)	405	317	Tb						
USW VH-1	762	184	Tcb						3.1
USW VH-1	762	184	Tcb						
USW VH-1	762	184	Tcb						
USW VH-1	762	184	Tcb						3.6
USW VH-1	762	184	Tcb						3.6
USW VH-1	762	184	Tcb						3.4

Site Name	Well Depth	WT Depth	Aquifer	^{3}H	$\delta^{2}H$	$\delta^{18}O$	$\delta^{13}C$	^{14}C	U
	meters	meters		TU	permil	permil	permil	PMC	ug/L
USW VH-1	762	184	Tcb						
USW VH-1	762	184	Tcb						
USW VH-1	762	184	Tcb						
USW VH-1	762	184	Tcb						
USW VH-1	762	184	Tcb		-108.0	-14.20	-8.50	12.2	
USW VH-1	762	184	Tcb		-105.0	-14.00	-7.00	9.3	
USW VH-2	1219	164	Tv						3.0
USW VH-2	1219	164	Tv						
USW WT-10	431	347	Tpt						2.8
USW WT-10	431	347	Tpt	11		-13.85	-6.20	7.3	
USW WT-10	431	347	Tpt		-103.0	-13.78	-6.00		2.8
UE-25 J-13	1063	283	Tpt						
UE-25 J-13	1063	283	Tpt						
UE-25 J-13	1063	283	Tpt						
UE-25 J-13	1063	283	Tpt						
UE-25 J-13	1063	283	Tpt						
UE-25 J-13	1063	283	Tpt		-96.5	-13.00			
UE-25 J-13	1063	283	Tpt		-96.5	-13.00			
UE-25 J-13	1063	283	Tpt						
UE-25 J-13	1063	283	Tpt						
UE-25 J-13	1063	283	Tpt						0.57
UE-25 J-13	1063	283	Tpt						0.60
UE-25 J-13	1063	283	Tpt						0.58
UE-25 J-13	1063	283	Tpt						0.52
UE-25 J-13	1063	283	Tpt						0.53
UE-25 J-13	1063	283	Tpt	21					
UE-25 J-13	1063	283	Tpt	21	-97.5	-13.00	-7.30	29.2	
UE-25 J-13	1063	283	Tpt	0.20					
UE-25 WT-7	491	421	Tv						
UE-25 WT-7	491	421	Tv	2.3		-13.95	-9.01		
UE-25 p#1 (1300-1800 m)	1805	382	DSlm						13.34
UE-25 p#1 (1300-1800 m)	1805	382	DSlm						
UE-25 p#1 (0-1200 m)	1805	382	Tcp	11	-107.0	-13.80			
UE-25 p#1 (1300-1800 m)	1805	382	DSlm	3.1	-106.0	-13.80	-2.30	2.3	
USW H-3	1219	751	Tct	2.0	-101.0	-13.90	-4.90	10.5	
UE-25 c#2	914	401	Tcb		-101.0			15.3	
UE-25 c#2	914	401	Tcb		-101.0	-13.40	-7.00	15.3	
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct		-99.3	-13.43			0.95
UE-25 c#3	914	402	Tcb/Tct		-99.7	-13.38			
UE-25 c#3	914	402	Tcb/Tct		-99.8	-13.39			
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						

Site Name	Well Depth	WT Depth	Aquifer	^{3}H	$\delta^{2}H$	$\delta^{18}O$	$\delta^{13}C$	^{14}C	U
	meters	meters		TU	permil	permil	permil	PMC	ug/L
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						
UE-25 c#3	914	402	Tcb/Tct						1.2
UE-25 c#3	914	402	Tcb/Tct						1.2
UE-25 c#3	914	402	Tcb/Tct	2.0	-103.0	-13.50	-7.50	15.7	
UE-25 c#1			Tcb/Tct		-102.0	-13.50	-7.10	15.0	
UE-25 ONC-1	469	433	Th/Tcp						
UE-25 ONC-1	469	433	Th/Tcp						0.57
USW H-4	1219	519	Tcb/Tct	10	-104.0	-14.00	-7.40	11.8	
UE-25 WT#14	399	346	Th		-97.5	-12.75	-12.70	24.1	
USW H-6 (525-1220 m)	1220	526	Tcb/Tct		-106.0	-13.80	-7.50	16.3	
USW H-6 (753-835 m)	1220	526	Tcb/Tct	4.0	-105.0	-14.00	-7.30	10.0	
USW H-6 (600-650 m)	1220	526	Tcb/Tct	1.0	-107.0	-14.00	-7.10	12.4	
UE-25 b#1 (0-1220 m)	1220	470	Th/Tct		-101.0	-13.40	-10.40	16.7	
UE-25 b#1 (853-914 m)	1220	470	Tcb	0.62	-99.5	-13.50	-8.60	18.9	
USW G-4	915	541	Tct		-103.0	-13.80	-9.10	22.0	
UE-25 WT#15	415	354	Tpt	0.40	-97.5	-13.20	-11.80	21.6	
USW H-5	1219	704	Tcb/Tct		-102.0	-13.60	-10.30	18.2	
USW H-5	1219	704	Tcb/Tct		-101.0	-13.60	-10.30	21.4	
UE-25 WT#4	482	438	Th						
USW H-1 (572-687 m)	1829	572	Tcp		-103.0	-13.40		19.8	
USW H-1 (687-1829 m)	1829	572	Tcb		-101.0	-13.50	-11.40	22.4	
USW G-2			Th/Tct						
USW G-2			Th/Tct						
USW G-2			Th/Tct						
USW G-2	1831	534	Th/Tct						
USW G-2	1831	534	Th/Tct						
USW G-2	1831	534	Th/Tct						
USW G-2	1831	534	Th/Tct						
USW G-2	1831	534	Th/Tct						1.0
USW G-2	1831	534	Th/Tct						1.1
USW G-2	1831	534	Th/Tct		-101.0	-13.25	-10.70	20.4	
USW G-2	1831	534	Th/Tct	1.0	-98.2	-13.30	-11.10		1.3
USW G-2	1831	534	Th/Tct		-98.8	-13.33	-11.80	20.5	
USW G-2	1831	534	Th/Tct						
USW G-2	1831	534	Th/Tct	1.0	-97.6	-13.31	-11.40		
Gexa Well 4			Tv						
UE-29 a#2 (250-355 m)	422	29	Th	37	-93.5	-12.80	-13.00	62.3	
UE-29 a#2 (87-213 m)	422	28	Th	37	-93.0	-12.80	-13.10	60.0	

Site Name	$^{234}U/^{238}U$	Sr	$^{87}Sr/^{86}Sr$	$\delta^{87}Sr$	Comment	Reference
		mg/L		permil		
16S/49E-05acc						22
15S/49E-22dcc						22
15S/49E-22dcc						22
TW-5		1.5086	0.71506	8.3		29
TW-5			0.71504	8.2		29
TW-5						
NDOT well	2.5		0.71080	2.3		21,26
NDOT well			0.71082	2.3		26
Cowboy Joes			0.71178	3.6		26
Cind-R-Lite Well	2.4		0.71213	4.1		21,26
Cind-R-Lite Well		0.1078	0.71221	4.2		30
Cind-R-Lite Well						48
BGMW-11		2.1629	0.71702	11		28
JF-3	4.1		0.71129	2.9		12,21,26
JF-3	4.1		0.71137	3.1		12,21,26
JF-3	4.1		0.71136	3.0		12,21,26
JF-3	4.1		0.71128	2.9		12,21,26
UE-25 J-12	5.5		0.71091	2.4		21,24
UE-25 J-12			0.71197	3.9		24
UE-25 J-12			0.71157	3.3		25
UE-25 J-12			0.71156	3.3		12,17,25,48
UE-25 J-12			0.71152	3.3		25
UE-25 J-12						17,22,48
UE-25 J-12						2,3,15,17,22,48
UE-25 J-12						9,17,48
UE-25 WT#12	7.2	0.0211	0.71000	1.1		16,21
UE-25 WT#12	7.2	0.0223	0.70996	1.1		16,21
UE-25 WT#12		0.0224	0.70999	1.1		16
UE-25 WT#12		0.0231	0.71003	1.2		16
UE-25 WT#12		0.0224	0.70990	1.0		16
UE-25 WT#12		0.0223	0.70953	0.5		16
UE-25 WT#12		0.0225	0.71000	1.1		16
UE-25 WT#12		0.0217	0.70996	1.1		16
UE-25 WT#12		0.0216	0.70993	1.3		16
UE-25 WT#12	7.2					21
UE-25 WT#12	7.2					21
UE-25 WT#12	7.2					21
UE-25 WT#12	7.2					21
UE-25 WT#12						39
UE-25 WT#12		0.0221				36
UE-25 WT#12		0.0300				36
UE-25 J-11 (331 m)		0.2517	0.70934	0.2		28
UE-25 J-11 (353 m)		0.2594	0.70936	0.2		28
USW VH-1	5.4		0.71084	2.3		21,26
USW VH-1			0.71098	2.5		26
USW VH-1			0.71010	2.5		26
USW VH-1	5.5		0.71105	2.6		21,26
USW VH-1	5.5		0.71094	2.5		21,26
USW VH-1	5.5		0.71097	2.5		21,26

Site Name	$^{234}U/^{238}U$	Sr	$^{87}Sr/^{86}Sr$	$\delta^{87}Sr$	Comment	Reference
		mg/L		permil		
USW VH-1			0.71097	2.5		26
USW VH-1			0.71096	2.5		26
USW VH-1			0.71010	2.5		26
USW VH-1			0.71094	2.5		26
USW VH-1						2,3,15,17,22,44,48
USW VH-1						38,39
USW VH-2	3.1		0.71301	5.4		21,24
USW VH-2			0.71299	5.3		26
USW WT-10	4.8	0.0038	0.71007	1.2		16,21
USW WT-10						39
USW WT-10		0.0040				36
UE-25 J-13	7.0		0.71138	3.1		23
UE-25 J-13	7.0		0.71128	2.9		24
UE-25 J-13	7.0		0.71147	3.2		24
UE-25 J-13			0.71150	3.2		25
UE-25 J-13			0.71154	3.3		25
UE-25 J-13		0.0420	0.71146	3.2		25
UE-25 J-13		0.0420	0.71151	3.3		25
UE-25 J-13			0.71147	3.2		25
UE-25 J-13		0.0387	0.71146	3.2		16
UE-25 J-13	5.8					21
UE-25 J-13	6.7					21
UE-25 J-13	6.0					21
UE-25 J-13	7.2					21
UE-25 J-13	7.1					21
UE-25 J-13						17,22,41,48
UE-25 J-13						2,3,15,17,22,41,48
UE-25 J-13						8,17,48
UE-25 WT-7			0.71027	1.5		23
UE-25 WT-7						39
UE-25 p#1 (1300-1800 m)	2.3		0.71175	3.6		back
UE-25 p#1 (1300-1800 m)			0.71177	3.6		back
UE-25 p#1 (0-1200 m)						7,15,17,22,48
UE-25 p#1 (1300-1800 m)						7,15,17,22,48
USW H-3						3,15,17,22
UE-25 c#2						3,15,17,22
UE-25 c#2						3,15,17,22
UE-25 c#3		0.0443	0.70988	1.0		16
UE-25 c#3			0.70988	1.0		16,39
UE-25 c#3			0.70981	0.9		16,39
UE-25 c#3	8.1		0.70979	0.8		16,39
UE-25 c#3		0.0440	0.70983	0.9		16
UE-25 c#3		0.0453	0.70997	1.1		16
UE-25 c#3		0.0447	0.70977	0.8		16
UE-25 c#3		0.0446	0.70961	0.6		16
UE-25 c#3		0.0462	0.70981	0.9		16
UE-25 c#3		0.0456	0.70980	0.8		16
UE-25 c#3		0.0466	0.70978	0.8		16
UE-25 c#3		0.0466	0.70981	0.9		16
UE-25 c#3		0.0467	0.70978	0.8		16

Site Name	$^{234}U/^{238}U$	Sr	$^{87}Sr/^{86}Sr$	$\delta^{87}Sr$	Comment	Reference
		mg/L		permil		
UE-25 c#3		0.0463	0.70980	0.8		16
UE-25 c#3		0.0456	0.70983	0.9		16
UE-25 c#3		0.0474	0.70981	0.9		16
UE-25 c#3		0.0474	0.70966	0.7		16
UE-25 c#3		0.0646	0.70990	1.0		16
UE-25 c#3		0.0465	0.70978	0.8		16
UE-25 c#3		0.0468	0.70990	1.0		16
UE-25 c#3		0.0481	0.70975	0.8		16
UE-25 c#3		0.0491	0.70971	0.7		16
UE-25 c#3	8.1					21
UE-25 c#3	8.1					21
UE-25 c#3						3,15,17,22
UE-25 c#1						3,15,17,22
UE-25 ONC-1		3.3648	0.71015	1.3		20,30
UE-25 ONC-1	5.7	0.0746	0.71064	2.0		20,30
USW H-4						3,15,17,50,51
UE-25 WT#14						39
USW H-6 (525-1220 m)						2,3,6,8,15,22
USW H-6 (753-835 m)						3,15,17,22
USW H-6 (600-650 m)						3,15,17,22
UE-25 b#1 (0-1220 m)						2,3,15,17,22
UE-25 b#1 (853-914 m)						2,3,15,17,22
USW G-4						2,3,14,22,30
UE-25 WT#15						48
USW H-5						2,3,15,17,22,32
USW H-5						2,3,17,22,32
UE-25 WT#4			0.71001	1.1		23
USW H-1 (572-687 m)						2,3,15,17,22,34,35
USW H-1 (687-1829 m)						2,3,15,17,22,34,35
USW G-2		0.0093	0.71015	1.3		16
USW G-2		0.0207	0.71111	2.7		16
USW G-2		0.0021	0.71130	3.0		16
USW G-2		0.0110	0.71056	1.9		16
USW G-2		0.0103	0.71056	1.9		16
USW G-2		0.0100	0.71065	2.0		16
USW G-2		0.0101	0.71059	2.0		16
USW G-2	8.2					21
USW G-2	8.1					21
USW G-2	7.6	0.0100				21,36
USW G-2	7.5	0.0110				21,36
USW G-2	7.6	0.0101				21,36
USW G-2	7.5					21
USW G-2		0.0103				36
Gexa Well 4		0.0338	0.70975	0.8		back
UE-29 a#2 (250-355 m)		0.0390				2,3,15,17,22
UE-29 a#2 (87-213 m)		0.0330				2,3,15,17,22

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Site Elev. meters	Well Depth meters
16S/49E-05acc	546664.5	4049439	36.591	363528	116.478	1162842	746	87
15S/49E-27acc	549552.9	4052722	36.621	363714	116.446	1162645	777	467
15S/49E-22dcc	549672.5	4053523	36.628	363740	116.444	1162638	784	148
TW-5	562605.0	4054686	36.638	363815	116.300	1161759	931	244
15S/50E-19b1	553862.5	4054720	36.638	363818	116.398	1162351		110
15S/49E-22a1	550086.3	4054974	36.641	363827	116.440	1162623	796	174
Airport Well	553289.0	4055086	36.642	363830	116.404	1162414	804	229
15S/50E-18cdc	553934.3	4055151	36.642	363832	116.397	1162348	812	120
NDOT well	554132.4	4055245	36.643	363835	116.394	1162340	810	151
Cowboy Joe's	554132.4	4055245	36.643	363835	116.394	1162340		
15S/50E-18ccc	553710.0	4055273	36.643	363836	116.399	1162357	812	120
15S/49E-13dda	553312.5	4055302	36.644	363837	116.404	1162413	796	174
Cind-R-Lite Well	544027.0	4059809	36.685	364105	116.507	1163026	831	140
BGMW-11	534410.9	4062631	36.711	364238	116.615	1163653	786	
JF-3	554498.3	4067974	36.758	364528	116.389	1162322	944	347
UE-25 J-12	554435.8	4068767	36.765	364554	116.390	1162324	953	347
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	1075	399
UE-25 J-11	563816.0	4071049	36.785	364706	116.285	1161706	1050	405
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	963	762
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	974	1219
USW WT-10	545976.0	4073389	36.807	364825	116.485	1162905	1123	431
UE-25 J-13	554004.4	4073550	36.808	364829	116.395	1162341	1011	1063
UE-25 WT-7	546148.2	4075461	36.826	364933	116.483	1162857	1197	491
UE-25 p#1 (0-1200 m)	551508.7	4075663	36.827	364938	116.423	1162521	1114	1805
UE-25 p#1 (1300-1800 m)	551508.7	4075663	36.827	364938	116.423	1162521	1114	1805
USW H-3	547537.0	4075762	36.828	364942	116.467	1162801	1483	1219
UE-25 c#2	550944.0	4075867	36.829	364945	116.429	1162543	1132	914
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	1132	914
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	1131	914
UE-25 ONC-1	550479.9	4076608	36.836	365009	116.434	1162602	1163	469
USW H-4	549195.0	4077322	36.842	365032	116.448	1162654	1249	1219
UE-25 WT#14	552638.0	4077337	36.842	365032	116.410	1162435	1076	399
USW H-6 (525-1220 m)	546196.1	4077816	36.847	365049	116.482	1162855	1302	1220
USW H-6 (753-835 m)	546196.1	4077816	36.847	365049	116.482	1162855	1302	1220
USW H-6 (600-650 m)	546196.1	4077816	36.847	365049	116.482	1162855	1302	1220
UE-25 b#1 (0-1220 m)	549954.5	4078422	36.852	365108	116.440	1162623	1201	1220
UE-25 b#1 (853-914 m)	549954.5	4078422	36.852	365108	116.440	1162623	1201	1220
USW G-4	548938.0	4078590	36.854	365114	116.451	1162704	1270	915
UE-25 WT#15	554033.7	4078702	36.854	365116	116.394	1162338	1083	415
USW H-5	547665.5	4078838	36.856	365122	116.465	1162755	1477	1219
UE-25 WT#4	550445.9	4079420	36.861	365140	116.434	1162603	1169	482
USW H-1 (572-687 m)	548721.8	4079944	36.866	365158	116.453	1162712	1303	1829
USW H-1 (687-1829 m)	548721.8	4079944	36.866	365158	116.453	1162712	1303	1829
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	1554	1831
Gexa Well 4	534068.9	4086110	36.922	365520	116.618	1163703	1198	488
UE-29 a#2 (250-355 m)	555753.3	4088351	36.941	365629	116.374	1162226	1215	422
UE-29 a#2 (87-213 m)	555753.3	4088351	36.941	365629	116.374	1162226	1215	422

Note: '0' designates analyzed
for but not detected

WT Depth meters	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L	HCO_3 mg/L	CO_3 mg/L	NO_3 mg/L	F mg/L	SiO_2 mg/L
21	Qal		7.8	4.5	29	2	35	5.2	6.0	26	135	0	2	1.0	62
73	Qal	44.1	7.9	-1.3	22	1.3	49	2.6	7.5	38	149	0	0.08	0.85	21
78	Qtal	29.5	7.8	0.8	28	2.1	41	4.8	7.6	33	148	0	1.5	1.0	49
207	Qal	30.0	7.9	-1.6	33	17	130	12	21	99	395			3.4	19
103	Qal	23.9	8.1	0.6	20	3.9	108	6.0	18	128	168	0	6.5	1.4	44
90	Qal	27.8	8.0	-0.9	25	2.4	41	5.2	8.0	33	145	0	3.5	1.4	52
76	Qal	27.5	9.0	0.2	5.6	0.23	70	1.5	10	46	110	7.0		1.8	40
105	Qal	28.5	8.0	3.3	17	0.83	110	4.0	15	110	160	0		1.9	46
105	Qal		8.0	-0.4	16	0.81	101	3.8	15	110	160			1.9	44
	Qal														
105	Qal		7.5	-1.0	17	0.60	93	4.1	13	100	157	0	0.86	2.1	34
90	Qal		8.2	0.1	14	1.5	106	4.4	20	103	160	0	6.3	2.0	48
101	Tv		7.8	-2.2	12	6.2	72	4.0	9.2	46	194		1.1	2.5	54
72	Qal														
216	Tv	26.6	7.7	1.4	18	3.1	39	8.5	9.9	31	120			1.6	56
226	Tv	26.2	7.6	-0.9	14	2.4	42	5.0	12	21	118		5.1	2.3	48
345	Tpt/Th		7.6	2.1	14	0.30	64	2.2	7.4	26	152		1.1	3.1	47
317	Tb	35.0	7.9	0.6	81	14	155	16	23	465	103		7.1	1.1	56
184	Tcb	35.4	7.6	0.8	10	1.5	76	1.9	10	43	160			2.8	50
164	Tv	32.8	7.1	-1.3	79	30	71	8.1	16	143	392			1.1	26
347	Tpt	38.5	8.4	-3.0	2.6	0.05	95	1.0	7.8	34	186	10	2.7	3.7	47
283	Tpt	30.5	7.3	-0.3	13	2.1	44	5.0	7.2	20	124		6.3	2.4	55
421	Tv		8.7	-2.5	2.6	0.18	97	2.1	13	7.2	252				20
382	Tcp	57.0	6.7	-3.0	94	31	150	12	26	78	753			4.9	44
382	DSlm	56.0	6.6	-2.3	100	39	150	12	28	160	694			4.7	41
751	Tct	26.5	9.0	-2.7	0.80	0.02	120	1.1	5.5	31	274		0.10	5.5	43
401	Tcb	40.5	7.9	-3.0	12	0.35	54	2.1	7.1	22	143		5.3	2.1	54
402	Tcb/Tct	41.0	7.7	-2.8	11	0.33	57	1.9	6.6	20	150		5.8	2.2	57
401	Tcb/Tct	41.5	7.6	-0.9	12	0.36	56	2.1	7.5	22	141		5.0	2.2	56
433	Th/Tcp		8.7	1.6	13	1.1	51	3.6	7.1	24	115	8.8	5.2		27
519	Tcb/Tct	34.8	7.4	3.8	17	0.29	73	2.6	6.9	26	173			4.6	46
346	Th		7.3	-1.6	10	0.80	45	5.0	8.2	22	119			1.8	57
526	Tcb/Tct		8.1	-2.0	4.1	0.09	86	1.3	7.6	29	188			4.7	48
526	Tcb/Tct	41.6	8.3	0.1	1.4	0.02	88	1.4	7.2	25	183			3.9	47
526	Tcb/Tct	37.2	8.3	-0.4	4.7	0.07	88	1.4	7.4	32	184			4.7	49
470	Th/Tct	36.0	7.5	-0.9	17	0.59	46	3.5	8.5	22	134		4.0	1.6	52
470	Tcb	37.2	7.1	-0.5	18	0.72	46	2.8	7.5	21	138		4.0	1.6	51
541	Tct	35.6	7.7	3.7	13	0.20	57	2.1	5.9	19	139			2.5	45
354	Tpt		7.5	2.3	12	1.7	62	4.6	12	16	166				53
704	Tcb/Tct	35.9	7.9	2.7	2.0	0.01	60	2.1	6.4	16	124			1.4	48
438	Th														
572	Tcp	33.0	7.7	-1.8	4.5	0	51	2.4	5.7	18	122			1.2	47
572	Tcb	34.7	7.5	1.4	6.2	0	51	1.6	5.8	19	115			1.0	40
534	Th/Tct	33.8	7.5	0.8	8.2	0.51	47	5.5	6.3	15	125		0.68	1.0	51
188	Tv	31.8	7.9	-2.3	12	0.37	71	3.3	14	46	150			3.2	48
29	Th	25.1	7.2	-2.3	10	0.20	44	1.1	11	22	107			1.0	44
28	Th	22.7	7.0	-3.4	10	0.30	44	1.3	8.8	21	107		9.7	0.90	44

B mg/L	Mn mg/L	Sr mg/L	Li mg/L	U ug/L	TDS calc mg/L	^{3}H TU	$\delta^{2}H$ permil	$\delta^{18}O$ permil	$\delta^{13}C$ permil	^{14}C PMC	U ug/L	$^{234}U/^{238}U$	Sr mg/L	$^{87}Sr/^{86}Sr$
0	0	0.0500	0.050		235		-103.0	-13.20	-7.10	19.3				
	0.0200	0.0650	0.045		215									
	0.0200	0.0650	0.040		240		-102.0	-12.80	-10.20	15.6				
0.58	0.1900	0.9800	0.190		529		-113.2	-15.40					1.5086	0.71505
	0	0		3.3	417									
	0			1.5	243									
					236									
	0			3.5	384									
				2.5	371						2.5	2.5		0.71081
														0.71178
	0	0.0800	0.090	1.8	342									
	0				384									
	0.0020		0.068	2.5	302		-102.0	-13.65			1.5	2.4	0.1078	0.71217
													2.1629	0.71702
	0.0020		0.037		226		-97.4	-13.18	-8.60	30.7	0.81	4.1		0.71133
0.32	0.0400	0.0530	0.041	0.50	206	8.2	-96.8	-12.88	-7.90	32.2	0.30	5.5		0.71151
	0.0550		0.063		202		-102.5	-13.69	-7.07	11.4	2.6	7.2	0.0229	0.70992
1.5				2.5	857								0.2555	0.70935
	0.0500	0.0650	0.090		274		-106.5	-14.10	-7.75	10.8	3.4	5.5		0.71079
	0.0090	0.5700	0.090	6.9	566						3.0	3.1		0.71300
	0.0400		0.086		287	11	-103.0	-13.82	-6.10	7.3	2.8	4.8	0.0038	0.71007
0.10	0.0748	0.0626	0.048	0.53	215	14	-96.8	-13.00	-7.30	29.2	0.56	6.7	0.0409	0.71145
			0.150		266	2.3		-13.95	-9.01					0.71027
		0.4900	0.310		811	11	-107.0	-13.80						
		0.4500	0.590		877	3.1	-106.0	-13.80	-2.30	2.3	13.34	2.3		0.71176
		0.0010	0.220		342	2.0	-101.0	-13.90	-4.90	10.5				
		0.0450	0.093		226		-101.0	-13.40	-7.00	15.3				
	0.0108	0.0575	0.095	1.1	230	2.0	-100.5	-13.43	-7.50	15.7	1.1	8.1	0.0472	0.70980
		0.0345	0.138		230		-102.0	-13.50	-7.10	15.0				
0.12	0.6900		0.084		196						0.57	5.7	1.7197	0.71040
		0.0270	0.130		262	10	-104.0	-14.00	-7.40	11.8				
			0.050		208		-97.5	-12.75	-12.70	24.1				
		0.0080	0.082		273		-106.0	-13.80	-7.50	16.3				
			0.071		264	4.0	-105.0	-14.00	-7.30	10.0				
		0.0080	0.063		278	1.00	-107.0	-14.00	-7.10	12.4				
		0.0380		38	221		-101.0	-13.40	-10.40	16.7				
		0.0470	0.621	47	221	0.62	-99.5	-13.50	-8.60	18.9				
		0.0170	0.067		213		-103.0	-13.80	-9.10	22.0				
			0.380		243	0.40	-97.5	-13.20	-11.80	21.6				
		0.0065	0.067		197		-101.5	-13.60	-10.30	19.8				
														0.71001
		0.0200	0.040		190		-103.0	-13.40		19.8				
		0.0050	0.040		181		-101.0	-13.50	-11.40	22.4				
	0.0743	0.0104	0.046	1.3	191	1.0	-98.9	-13.30	-11.25	20.5	1.1	7.8	0.0104	0.71070
	0.0090			4.3	270									0.70975
		0.0390	0.100		186	37	-93.5	-12.80	-13.00	62.3				
		0.0330	0.110		193	37	-93.0	-12.80	-13.10	60.0				

$\delta^{87}Sr$ permil
8.2
2.3
3.6
4.2
11.0
3.0
3.3
1.0
0.2
2.5
5.4
1.2
3.2
1.5
3.6
0.9
1.7
1.1
2.1
0.8

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810206	1805	963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810208	905	963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810211		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730	1530	963

Average
Standard Deviation
Maximum
Minimum
Count

Note: '0' designates analyzed for but not detected

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	810211		963
USW VH-1	539986.2	4071718	36.792	364732	116.552	1163307	920730	1530	963

Average
Standard Deviation
Maximum
Minimum
Count

Well Depth meters	WT Depth meters	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L
762	184	Tcb	35.2	7.9	2.6	11.0	1.6	79	1.9	11	44
762	184	Tcb	35.5	7.5	2.5	10.0	1.5	80	1.9	10	45
762	184	Tcb	35.5	7.5	1.6	9.9	1.5	78	1.8	10	44
762	184	Tcb	35.5	7.6	-4.4	11.0	1.5	68		10	40
			35.4	7.6		10.5	1.5	76	1.9	10	43
			0.1	0.2		0.5	0.0	4.8	0.0	0.43	1.9
			35.5	7.9		11.0	1.6	80	1.9	11	45
			35.2	7.5		9.9	1.5	68	1.8	10	40
			4	4		4	4	4	3	4	4

Well Depth meters	WT Depth meters	Aquifer	^{3}H • TU	$\delta^{2}H$ permil	$\delta^{18}O$ permil	$\delta^{13}C$ permil	^{14}C PMC	U ug/L	$^{234}U/^{238}U$	Sr mg/L	$^{87}Sr/^{86}Sr$
762	184	Tcb						3.1	5.4		0.71084
762	184	Tcb									0.71098
762	184	Tcb									0.71010
762	184	Tcb						3.6	5.5		0.71105
762	184	Tcb						3.6	5.5		0.71094
762	184	Tcb						3.4	5.5		0.71097
762	184	Tcb									0.71097
762	184	Tcb									0.71096
762	184	Tcb									0.71010
762	184	Tcb									0.71094
762	184	Tcb		-108.0	-14.20	-8.50	12.2				
762	184	Tcb		-105.0	-14.00	-7.00	9.3				
			#DIV/0!	-106.5	-14.10	-7.75	10.8	3.4	5.5	#DIV/0!	0.71079
			#DIV/0!	1.5	0.10	0.75	1.5	0.2	0.0	#DIV/0!	0.00035
			0.0	-105.0	-14.00	-7.00	12.2	3.6	5.5	0.0000	0.71105
			0.0	-108.0	-14.20	-8.50	9.3	3.1	5.4	0.0000	0.71010
			0	2	2	2	2	4	4	0	10

HCO_3 mg/L	CO_3 mg/L	NO_3 mg/L	F mg/L	SiO_2 mg/L	B mg/L	Mn mg/L	Sr mg/L	Li mg/L	U ug/L	TDS calc mg/L	Comment
158			2.7	50			0.0700	0.090		279	
158			2.7	50			0.0700	0.090		279	
158			2.7	49			0.0600	0.090		275	
165			2.9	49		0.0500	0.0600	0.090		263	
160	#DIV/0!	#DIV/0!	2.8	50	#DIV/0!	0.0500	0.0650	0.090	#DIV/0!	274	
2.8	#DIV/0!	#DIV/0!	0.1	0.5	#DIV/0!	0.0000	0.0050	0.000	#DIV/0!	6.4	
165	0.00	0.00	2.9	50	0.00	0.0500	0.0700	0.090	0.00	279	
158	0.00	0.00	2.7	49	0.00	0.0500	0.0600	0.090	0.00	263	
4	0	0	4	4	0	1	4	4	0	4	

$\delta^{87}Sr$ permil	Comment
2.3	
2.5	
2.5	
2.6	
2.5	
2.5	
2.5	
2.5	
2.5	
2.5	
2.5	
0.1	
2.6	
2.3	
10	

cations	anions
4.166	3.958
4.151	3.951
4.056	3.930
3.630	3.964

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	910904	1545	974
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	920326	1005	974
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	920906		974
USW VH-2	537737.6	4073222	36.806	364821	116.577	1163437	950829	1100	974

Average
Standard Deviation
Maximum
Minimum
Count

Note: '0' designates analyzed for but not detected

Well Depth meters	WT Depth meters	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L	HCO_3 mg/L	CO_3 mg/L
1219	164	Tv	33.0	7.0	-0.55	81	30	69	8.3	15	150	380	
1219	164	Tv	32.5	7.0	-2.0	77	29	71	8.6	20	140	390	
1219	164	Tv			0.39	82	31	72	8.0	15	140	397	
1219	164	Tv		7.4	-2.9	74	29	71	7.6	14	140	400	
			32.8	7.1		79	30	71	8.1	16	143	392	#DIV/0!
			0.3	0.2		3.2	0.83	1.1	0.37	2.3	4.3	7.7	#DIV/0!
			33.0	7.0		82	31	72	8.6	20	150	397	0.00
			32.5	7.0		74	29	69	7.6	14	140	380	0.00
			2	3		4	4	4	4	4	4	4	0

NO_3 mg/L	F mg/L	SiO_2 mg/L	B mg/L	Mn mg/L	Sr mg/L	Li mg/L	U ug/L	TDS calc mg/L	Comment	cations
	1.1	27		0.0130			6.9	569		9.724
	1.1	26		0.0100			6.8	565		9.537
	1.1	27	0	0.0040	0.5700	0.093		572		9.979
	1.2	25				0.087		559		9.362
#DIV/0!	1.1	26	#DIV/0!	0.0090	0.5700	0.090	6.9	566		
#DIV/0!	0.0	0.8	#DIV/0!	0.0037	0.0000	0.003	0.1	4.8		
0.00	1.1	27	0.00	0.0130	0.5700	0.093	6.9	572		
0.00	1.1	25	0.00	0.0040	0.5700	0.087	6.8	559		
0	4	4	0	3	1	2	2	4		

anions
9.832
9.929
9.903
9.929

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	880412	1500	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1100	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950821	1400	1075

Average
Standard Deviation
Maximum
Minimum
Count

Note: '0' designates analyzed for but not detected

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950821		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950820		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950818		1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950910	1200	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950909	1215	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616			1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616			1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950911	1400	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1440	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1440	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616			1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1100	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	880412	1500	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950819	1100	1075
UE-25 WT#12	550162.9	4070647	36.782	364656	116.438	1162616	950821	1400	1075

Average
Standard Deviation
Maximum
Minimum
Count

Well Depth meters	WT Depth meters	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L
399	345	Tpt/Th		7.6	-0.12	15	0.30	66	2.6	7.8	28
399	345	Tpt/Th			5.3	14	0.30	62	2.0	6.9	24
399	345	Tpt/Th			100.0	14	0.30	63	2.0		
			#DIV/0!	7.6		14	0.30	64	2.2	7.4	26
			#DIV/0!	0.0		0.5	0.00	1.7	0.3	0.5	2
			0.0	7.6		15	0.30	66	2.6	7.8	28
			0.0	7.6		14	0.30	62	2.0	6.9	24
			0	1		3	3	3	3	2	2

Well Depth meters	WT Depth meters	Aquifer	^{3}H TU	$\delta^{2}H$ permil	$\delta^{18}O$ permil	$\delta^{13}C$ permil	^{14}C PMC	U ug/L	$^{234}U/^{238}U$	Sr mg/L	$^{87}Sr/^{86}Sr$
399	345	Tpt/Th						2.7	7.2	0.0211	0.71000
399	345	Tpt/Th						2.6	7.2	0.0223	0.70996
399	345	Tpt/Th								0.0224	0.70999
399	345	Tpt/Th								0.0231	0.71003
399	345	Tpt/Th								0.0224	0.70990
399	345	Tpt/Th								0.0223	0.70953
399	345	Tpt/Th								0.0225	0.71000
399	345	Tpt/Th								0.0217	0.70996
399	345	Tpt/Th								0.0216	0.70993
399	345	Tpt/Th						2.5	7.2		
399	345	Tpt/Th						2.5	7.2		
399	345	Tpt/Th						2.6	7.2		
399	345	Tpt/Th						2.6	7.2		
399	345	Tpt/Th		-102.5	-13.75	-8.10	11.4				
399	345	Tpt/Th		-103.0	-13.70	-6.60		2.5		0.0221	
399	345	Tpt/Th		-102.0	-13.63	-6.50		2.7		0.0300	
			#DIV/0!	-102.5	-13.69	-7.07	11.4	2.6	7.2	0.0229	0.70992
			#DIV/0!	0.4	0.05	0.73	0.0	0.1	0.0	0.0023	0.00014
			0.0	-102.0	-13.63	-6.50	11.4	2.7	7.2	0.0300	0.71003
			0.0	-103.0	-13.75	-8.10	11.4	2.5	7.2	0.0211	0.70953
			0	3	3	3	1	8	6	11	9

HCO_3 mg/L	CO_3 mg/L	NO_3 mg/L	F mg/L	SiO_2 mg/L	B mg/L	Mn mg/L	Sr mg/L	Li mg/L	U ug/L	TDS calc mg/L	Comment
167		1.0	3.1	47				0.070		253	
137		1.2	3.1	47		0.0600		0.060		228	
				47		0.0500		0.060		126	
152	#DIV/0!	1.1	3.1	47	#DIV/0!	0.0550	#DIV/0!	0.063	#DIV/0!	202	
15	#DIV/0!	0.1	0.0	0	#DIV/0!	0.0050	#DIV/0!	0.005	#DIV/0!	55	
167	0.0	1.2	3.1	47	0.0	0.0600	0.0000	0.070	0.0	253	
137	0.0	1.0	3.1	47	0.0	0.0500	0.0000	0.060	0.0	126	
2	0	2	2	3	0	2	0	3	0	3	

$\delta^{87}Sr$ permil	Comment
1.1	
1.1	
1.1	
1.2	
1.0	
0.5	
1.1	
1.1	
1.3	
1.0	
0.2	
1.3	
0.5	
9	

cations	anions
3.711	3.719
3.471	3.122
3.515	0.000

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	840509		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950522	1600	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950523	1130	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950531	1700	1132

Average
Standard Deviation
Maximum
Minimum
Count

Note: '0' designates analyzed for but not detected

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950528		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950522	1600	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950523	1130	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950531	1700	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950528	600	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950525		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950526		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	950528	600	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960228		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960313		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960314		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960316		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960315		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960318		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960224		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960225		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960226		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960228		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	960227		1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	970219	1000	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	970219	1000	1132
UE-25 c#3	550919.8	4075886	36.829	364946	116.429	1162544	840509		1132

Average
Standard Deviation
Maximum
Minimum
Count

Well Depth meters	WT Depth meters	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L	HCO_3 mg/L
914	402	Tcb/Tct	40.8	7.7	-2.9	11	0.4	55	1.9	7.2	22	143
914	402	Tcb/Tct	41.4	7.7	2.6	11	0.3	58	1.9	6.4	19	140
914	402	Tcb/Tct	41.4	7.7	1.6	11	0.3	57	1.9	6.5	19	141
914	402	Tcb/Tct	40.3	7.7	-7.6	11	0.3	56	1.9	6.4	19	175
			41.0	7.7		11	0.3	57	1.9	6.6	20	150
			0.5	0.0		0.0	0.0	1.1	0.0	0.33	1.3	15
			41.4	7.7		11	0.4	58	1.9	7.2	22	175
			40.3	7.7		11	0.3	55	1.9	6.4	19	140
			4	4		4	4	4	4	4	4	4

Well Depth meters	WT Depth meters	Aquifer	^{3}H TU	$\delta^{2}H$ permil	$\delta^{18}O$ permil	$\delta^{13}C$ permil	^{14}C PMC	U ug/L	$^{234}U/^{238}U$	Sr mg/L	$^{87}Sr/^{86}Sr$	$\delta^{87}Sr$ permil
914	402	Tcb/Tct								0.0443	0.70988	1.0
914	402	Tcb/Tct		-99.3	-13.43			0.95			0.70988	1.0
914	402	Tcb/Tct		-99.7	-13.38						0.70981	0.9
914	402	Tcb/Tct		-99.8	-13.39				8.1		0.70979	0.8
914	402	Tcb/Tct								0.0440	0.70983	0.9
914	402	Tcb/Tct								0.0453	0.70997	1.1
914	402	Tcb/Tct								0.0447	0.70977	0.8
914	402	Tcb/Tct								0.0446	0.70961	0.6
914	402	Tcb/Tct								0.0462	0.70981	0.9
914	402	Tcb/Tct								0.0456	0.70980	0.8
914	402	Tcb/Tct								0.0466	0.70978	0.8
914	402	Tcb/Tct								0.0466	0.70981	0.9
914	402	Tcb/Tct								0.0467	0.70978	0.8
914	402	Tcb/Tct								0.0463	0.70980	0.8
914	402	Tcb/Tct								0.0456	0.70983	0.9
914	402	Tcb/Tct								0.0474	0.70981	0.9
914	402	Tcb/Tct								0.0474	0.70966	0.7
914	402	Tcb/Tct								0.0646	0.70990	1.0
914	402	Tcb/Tct								0.0465	0.70978	0.8
914	402	Tcb/Tct								0.0468	0.70990	1.0
914	402	Tcb/Tct								0.0481	0.70975	0.8
914	402	Tcb/Tct								0.0491	0.70971	0.7
914	402	Tcb/Tct						1.2	8.1			
914	402	Tcb/Tct						1.2	8.1			
914	402	Tcb/Tct	2.0	-103.0	-13.50	-7.50	16					
			2.0	-100.5	-13.43	-7.50	16	1.1	8.1	0.0472	0.70980	0.9
			0.0	1.5	0.05	0.00	0.0	0.1	0.0	0.0000	0.00008	0.1
			2.0	-99.3	-13.38	-7.50	16	1.2	8.1	0.0646	0.70997	1.1
			2.0	-103.0	-13.50	-7.50	16	1.0	8.1	0.0440	0.70961	0.6
			1	4	4	1	1	3	3	19	22	22

CO_3 mg/L	NO_3 mg/L	F mg/L	SiO_2 mg/L	B mg/L	Mn mg/L	Sr mg/L	Li mg/L	U ug/L	TDS calc mg/L	Comment
	5.8	2.0	53		0.0030	0.040	0.1100		229	
		2.2	60		0.0200	0.060	0.1000		228	
		2.2	58		0.0100	0.060	0.0900		225	
		2.2	57		0.0100	0.070	0.0800	1.1	240	
#DIV/0!	5.8	2.2	57	#DIV/0!	0.0108	0.058	0.0950	1.1	230	
#DIV/0!	0.0	0.1	2.5	#DIV/0!	0.0061	0.011	0.0112	0.0	5.6	
0.00	5.8	2.2	60	0.00	0.0200	0.070	0.1100	1.1	240	
0.00	5.8	2.0	53	0.00	0.0030	0.040	0.0800	1.1	225	
0	1	4	4	0	4	4	4	1	4	

Comment

cations	anions
3.023	3.204
3.145	2.987
3.102	3.006
3.058	3.560

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830927	1740	1131
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830928	1700	1131
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830930	1001	1131
UE-25 c#1	550957.7	4075943	36.830	364947	116.429	1162543	830930	1000	1131

Average
Standard Deviation
Maximum
Minimum
Count

Note: '0' designates analyzed for but not detected

Well Depth meters	WT Depth meters	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L	HCO_3 mg/L	CO_3 mg/L	NO_3 mg/L
914	401	Tcb/Tct	41.2	7.5	-1.1	11	0.35	56	2.2	7.8	23	142		
914	401	Tcb/Tct	41.5	7.6	2.0	13	0.41	57	2.1	7.5	21	142		
914	401	Tcb/Tct	41.7	7.6	-1.2	11	0.34	56	2.0	7.4	23	138		4.7
914	401	Tcb/Tct	41.7	7.6	-0.8	11	0.34	56	2.1	7.2	20	140		5.2
			41.5	7.6		12	0.36	56	2.1	7.5	22	141	#DIV/0!	5.0
			0.2	0.0		0.87	0.03	0.4	0.1	0.2	1.3	1.7	#DIV/0!	0.3
			41.7	7.6		13	0.41	57	2.2	7.8	23	142	0.00	5.2
			41.2	7.5		11	0.34	56	2.0	7.2	20	138	0.00	4.7
			4	4		4	4	4	4	4	4	4	0	2

F mg/L	SiO_2 mg/L	B mg/L	Mn mg/L	Sr mg/L	Li mg/L	U ug/L	TDS calc mg/L	Comment	cations
2.1	56			0.0340	0.170		228		3.070
2.2	57			0.0350	0.140		230		3.216
2.1	56			0.0350	0.120		231		3.064
2.2	56			0.0340	0.120		229		3.067
2.2	56	#DIV/0!	#DIV/0!	0.0345	0.138	#DIV/0!	230		
0.0	0.43	#DIV/0!	#DIV/0!	0.0005	0.020	#DIV/0!	0.9		
2.2	57	0.00	0.0000	0.0350	0.170	0.00	231		
2.1	56	0.00	0.0000	0.0340	0.120	0.00	228		
4	4	0	0	4	4	0	4		

anions
3.137
3.092
3.136
3.114

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960130	1415	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208	1300	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960412	1450	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960423	930	1554
Average									
Standard Deviation									
Maximum									
Minimum									
Count									

Note: '0' designates analyzed for but not detected

Site Name	UTM-x meters	UTM-y meters	Lat DD	Lat DMS	Long DD	Long DMS	Date	Time	Site Elev. meters
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735			
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735			
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735			
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960130		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960412		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960423		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	950208		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	950208		1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960412	1450	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208	1415	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960423	930	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960130	1630	1554
USW G-2	548138.6	4082554	36.889	365322	116.460	1162735	960208	1300	1554
Average									
Standard Deviation									
Maximum									
Minimum									
Count									

Well Depth meters	WT Depth meters	Aquifer	Temp oC	pH	Charge Balance	Ca mg/L	Mg mg/L	Na mg/L	K mg/L	Cl mg/L	SO_4 mg/L
1831	534	Th/Tct	32.2	7.6	10.8	8.6	0.55	47	5.5		
1831	534	Th/Tct	34.4	7.5	0.8	8.1	0.52	47	5.5	6.4	15
1831	534	Th/Tct	34.2	7.5	2.3	8.3	0.50	48	5.6	6.1	15
1831	534	Th/Tct	34.2	7.5	0.5	7.7	0.47	46	5.3	6.5	15
			34	7.5		8.2	0.51	47	5.5	6.3	15
			0.9	0.0		0.3	0.03	0.7	0.1	0.2	0.0
			34.4	7.6		8.6	0.55	48	5.6	6.5	15
			32.2	7.5		7.7	0.47	46	5.3	6.1	15
			4	4		4	4	4	4	3	3

Well Depth meters	WT Depth meters	Aquifer	^{3}H TU	$\delta^{2}H$ permil	$\delta^{18}O$ permil	$\delta^{13}C$ permil	^{14}C PMC	U ug/L	$^{234}U/^{238}U$	Sr mg/L	$^{87}Sr/^{86}Sr$
		Th/Tct								0.0093	0.71015
		Th/Tct								0.0207	0.71111
		Th/Tct								0.0021	0.71130
1831	534	Th/Tct								0.0110	0.71056
1831	534	Th/Tct								0.0103	0.71056
1831	534	Th/Tct								0.0100	0.71065
1831	534	Th/Tct								0.0101	0.71059
1831	534	Th/Tct						1.0	8.2		
1831	534	Th/Tct						1.1	8.1		
1831	534	Th/Tct		-101.0	-13.25	-10.70	20.4		7.6	0.0100	
1831	534	Th/Tct	1.0	-98.2	-13.30	-11.10		1.3	7.5	0.0110	
1831	534	Th/Tct		-98.8	-13.33	-11.80	20.5		7.6	0.0101	
1831	534	Th/Tct							7.5		
1831	534	Th/Tct	1.0	-97.6	-13.31	-11.40				0.0103	
			1.0	-98.9	-13.30	-11.25	20.5	1.1	7.8	0.0104	0.71070
			0.0	1.3	0.03	0.40	0.0	0.1	0.3	0.0040	0.00036
			1.0	-97.6	-13.25	-10.70	20.5	1.3	8.2	0.0207	0.71130
			1.0	-101.0	-13.33	-11.80	20.4	1.0	7.5	0.0021	0.71015
			2	4	4	4	2	3	6	11	7

HCO_3 mg/L	CO_3 mg/L	NO_3 mg/L	F mg/L	SiO_2 mg/L	B mg/L	Mn mg/L	Sr mg/L	Li mg/L	U ug/L	TDS calc mg/L	Comment
130		0.70		51		0.1300	0.0110	0.050	1.6	177	
124		0.64	1.0	51		0.0650	0.0103	0.048	1.3	196	
123		0.70	1.0	51		0.0600	0.0100	0.044	1.1	197	
121			1.0	51		0.0420	0.0101	0.043	1.2	193	
125	#DIV/0!	0.68	1.0	51	#DIV/0!	0.0743	0.0104	0.046	1.3	191	
3.4	#DIV/0!	0.03	0.0	0.0	#DIV/0!	0.0333	0.0004	0.003	0.2	8	
130	0.00	0.70	1.0	51	0.00	0.1300	0.0110	0.050	1.6	197	
121	0.00	0.64	1.0	51	0.00	0.0420	0.0100	0.043	1.1	177	
4	0	3	3	4	0	4	4	4	4	4	

$\delta^{87}Sr$ permil	Comment
1.3	
2.7	
3.0	
1.9	
1.9	
2.0	
2.0	
2.1	
0.50152	
3.0	
1.3	
7	

cations	anions
2.660	2.142
2.632	2.588
2.687	2.564
2.559	2.531