

**SECTION 5**

**TABLE OF CONTENTS**

**GROUND-WATER MONITORING  
FOR HOMESTAKE'S GRANTS PROJECT**

	<u>Page Number</u>
<b>5.0 UPPER CHINLE AQUIFER MONITORING .....</b>	<b>5.1-1</b>
5.1 UPPER CHINLE WELL COMPLETION.....	5.1-1
5.2 UPPER CHINLE WATER LEVELS .....	5.2-1
5.2.1 WATER LEVELS - UPPER CHINLE .....	5.2-1
5.3 UPPER CHINLE WATER QUALITY.....	5.3-1
5.3.1 SULFATE - UPPER CHINLE .....	5.3-1
5.3.2 TOTAL DISSOLVED SOLIDS - UPPER CHINLE.....	5.3-2
5.3.3 URANIUM - UPPER CHINLE .....	5.3-2
5.3.4 SELENIUM - UPPER CHINLE .....	5.3-3
5.3.5 MOLYBDENUM - UPPER CHINLE .....	5.3-4
5.3.6 NITRATE - UPPER CHINLE .....	5.3-4
5.3.7 RADIUM-226 AND RADIUM-228 - UPPER CHINLE .....	5.3-4
5.3.8 VANADIUM - UPPER CHINLE .....	5.3-5
5.3.9 THORIUM-230 - UPPER CHINLE.....	5.3-5

**FIGURES**

5.1-1A CHINLE AQUIFER WELL LOCATIONS (WEST AREA) .....	5.1-3
5.1-1B CHINLE AQUIFER WELL LOCATIONS.....	5.1-4
5.1-2 LIMITS OF UPPER CHINLE AQUIFER AND WELL LOCATIONS.....	5.1-5
5.1-3 TYPICAL GEOLOGIC CROSS SECTION .....	5.1-6
5.2-1 WATER-LEVEL ELEVATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, FT-MSL .....	5.2-3
5.2-2 LOCATION OF UPPER CHINLE WELLS WITH WATER-LEVEL PLOTS .....	5.2-4
5.2-3 WATER-LEVEL ELEVATION FOR WELLS CW3, CW4R, CW5, CE2, 494 AND CW25 .....	5.2-5
5.2-4 WATER-LEVEL ELEVATION FOR WELLS CW13, CW40, 934 AND CW18 .....	5.2-6
5.3-1 SULFATE CONCENTRATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, mg/l.....	5.3-6
5.3-2 LOCATION OF UPPER CHINLE WELLS WITH WATER-QUALITY PLOTS .....	5.3-7
5.3-3 SULFATE CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494 .....	5.3-8

## SECTION 5

### TABLE OF CONTENTS

#### GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

##### FIGURES (continued)

	<u>Page Number</u>
5.3-4 SULFATE CONCENTRATIONS FOR WELLS CW18, CW40, 929, 934 AND 944.....	5.3-9
5.3-5 TDS CONCENTRATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, mg/l.....	5.3-10
5.3-6 URANIUM CONCENTRATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, mg/l.....	5.3-11
5.3-7 URANIUM CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494 .....	5.3-12
5.3-8 URANIUM CONCENTRATIONS FOR WELLS CW18, CW40, 929, 934 AND 944.....	5.3-13
5.3-9 SELENIUM CONCENTRATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, mg/l.....	5.3-14
5.3-10 SELENIUM CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494 .....	5.3-15
5.3-11 SELENIUM CONCENTRATIONS FOR WELLS CW18, CW40, 929, 934 AND 944.....	5.3-16
5.3-12 MOLYBDENUM CONCENTRATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, mg/l.....	5.3-17
5.3-13 MOLYBDENUM CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494 .....	5.3-18
5.3-14 MOLYBDENUM CONCENTRATIONS FOR WELLS CW18, 929, 934 AND 944 .....	5.3-19

## **SECTION 5**

### **TABLE OF CONTENTS**

#### **GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT**

##### **TABLES**

5.1-1	BASIC WELL DATA FOR THE CHINLE HOMESTAKE WELLS.....	5.1-7
5.1-2	BASIC WELL DATA FOR THE CHINLE BROADVIEW AND FELICE ACRES WELLS.....	5.1-9
5.1-3	BASIC WELL DATA FOR THE CHINLE MURRAY ACRES AND PLEASANT VALLEY WELLS.....	5.1-11
5.1-4	BASIC WELL DATA FOR THE CHINLE REGIONAL WELLS .....	5.1-13

## **5.0 UPPER CHINLE AQUIFER MONITORING**

### **5.1 UPPER CHINLE WELL COMPLETION**

Chinle aquifer well locations are presented on Figures 5.1-1A and 5.1-1B. The Upper and Middle Chinle aquifers do not exist in the west area. Table 5.1-1 presents basic information for the Chinle wells located on the Homestake property. This table presents well coordinates, well depth, casing diameter, water level, measuring point in feet above land surface and elevation, and depth and elevation to the top of the Chinle aquifers. A "U" follows the elevation of the top of the Upper Chinle aquifer, and an "M" and an "L" have the same meanings for the Middle and Lower Chinle aquifers, respectively. Some of the wells also are used to define the depth to the base of the alluvium, and an "A" is presented following the elevation number to denote that these values are for the base of the alluvium. The casing perforation interval and aquifer unit are also presented in this table.

Table 5.1-2 presents basic well data for Chinle wells in Broadview and Felice Acres. Table 5.1-3 presents similar data for Murray Acres and Pleasant Valley Estates Chinle wells. Wells that are not located within the immediate Grants Project property or these four subdivision boundaries are shown on Table 5.1-4 as the regional Chinle wells (see Figure 5.1-1B for inner regional boundary). No additional Upper Chinle wells were drilled in 2001.

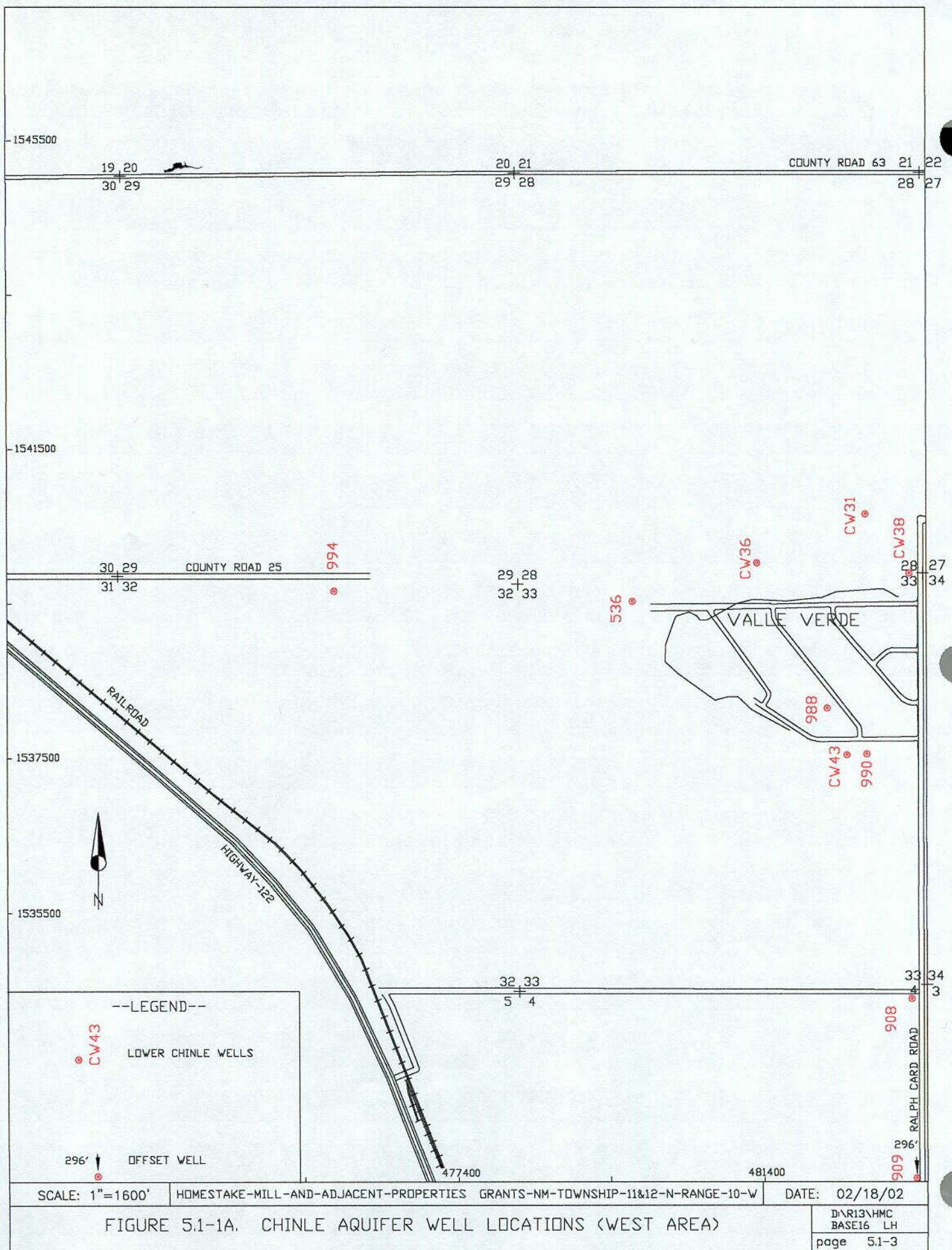
The background water quality is the alluvial aquifer upgradient water quality because the alluvium recharges the Chinle aquifers in this area. Therefore, the background data listed in the upward left portions of the water-quality figures is the 2001 background for the alluvial aquifer.

Each of the Upper Chinle wells is plotted on Figure 5.1-2, and the areal extent of the Upper Chinle aquifer at the Grants Project is also shown. Upper Chinle wells CW5, CW13 and CW25 are shown in cyan to note that these are fresh-water injection wells. Upper Chinle wells CE2, CW3 and 934 were pumped as a source for flushing of the tailings in 2001 and is shown in orange. This figure also shows the location of the West and East Faults. Two different patterns have been used to show the limits of the Upper Chinle sandstone where Chinle shale exists above the sandstone (green and



blue, west and east of the East Fault, respectively). Figure 5.1-3 presents a typical geologic cross section to show the relative position of the alluvial and Chinle aquifers (see Figure 5.1-2 for location).

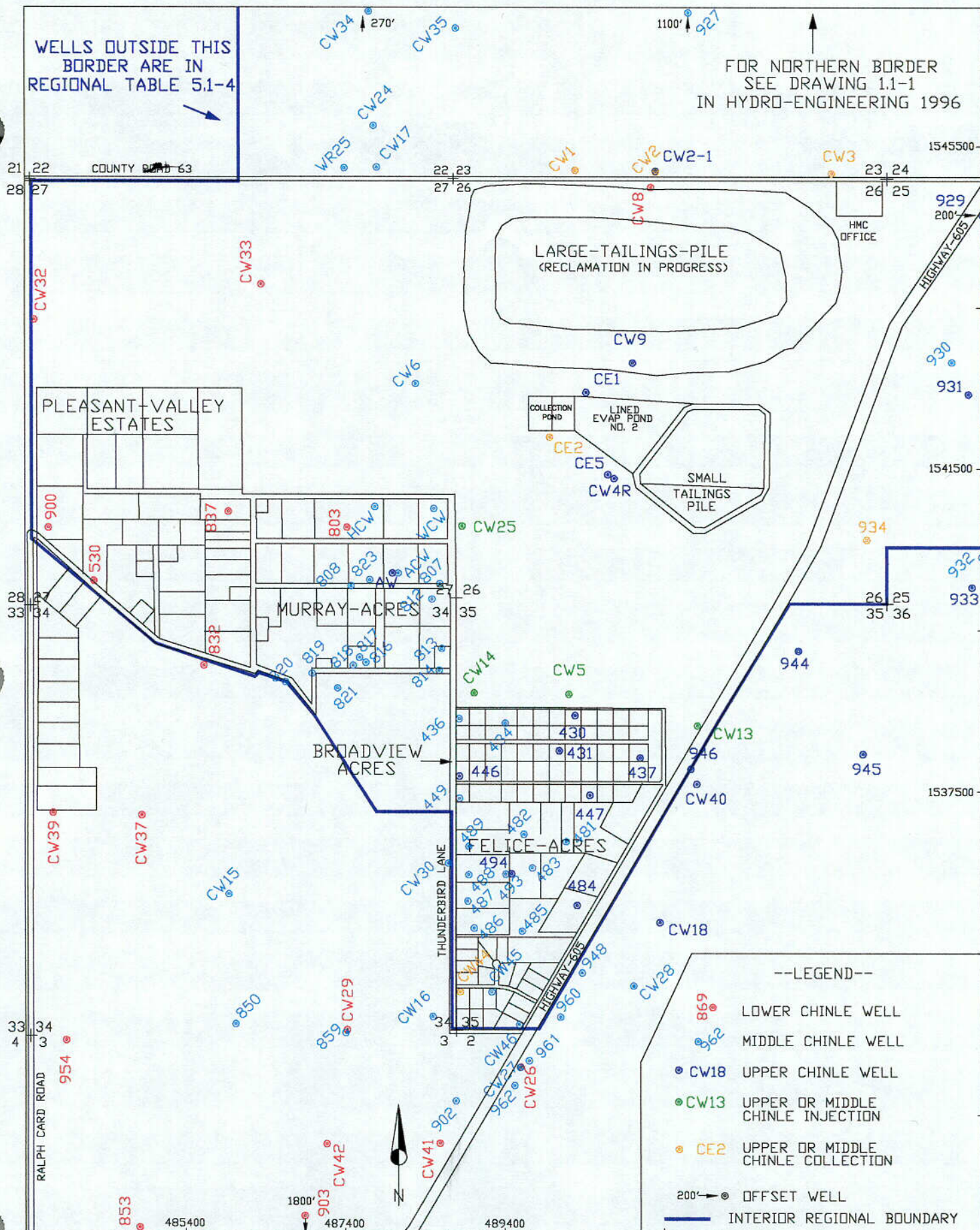
The subcrop of the Upper Chinle sandstone where the alluvium is saturated or unsaturated above the Upper Chinle sandstone is also shown on Figure 5.1-2 with red patterns. The alluvial and Upper Chinle aquifers are in direct contact where the red cross-hatched pattern is shown. The Upper Chinle sandstone is in contact with dry alluvium in the red dotted area. The Upper Chinle aquifer does not exist to the west and south of the subcrop area. The Upper Chinle sandstone, therefore, does not exist west of the West Fault.





WELLS OUTSIDE THIS  
BORDER ARE IN  
REGIONAL TABLE 5.1-4

FOR NORTHERN BORDER  
SEE DRAWING 1.1-1  
IN HYDRO-ENGINEERING 1996



SCALE: 1"=1600'

HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W

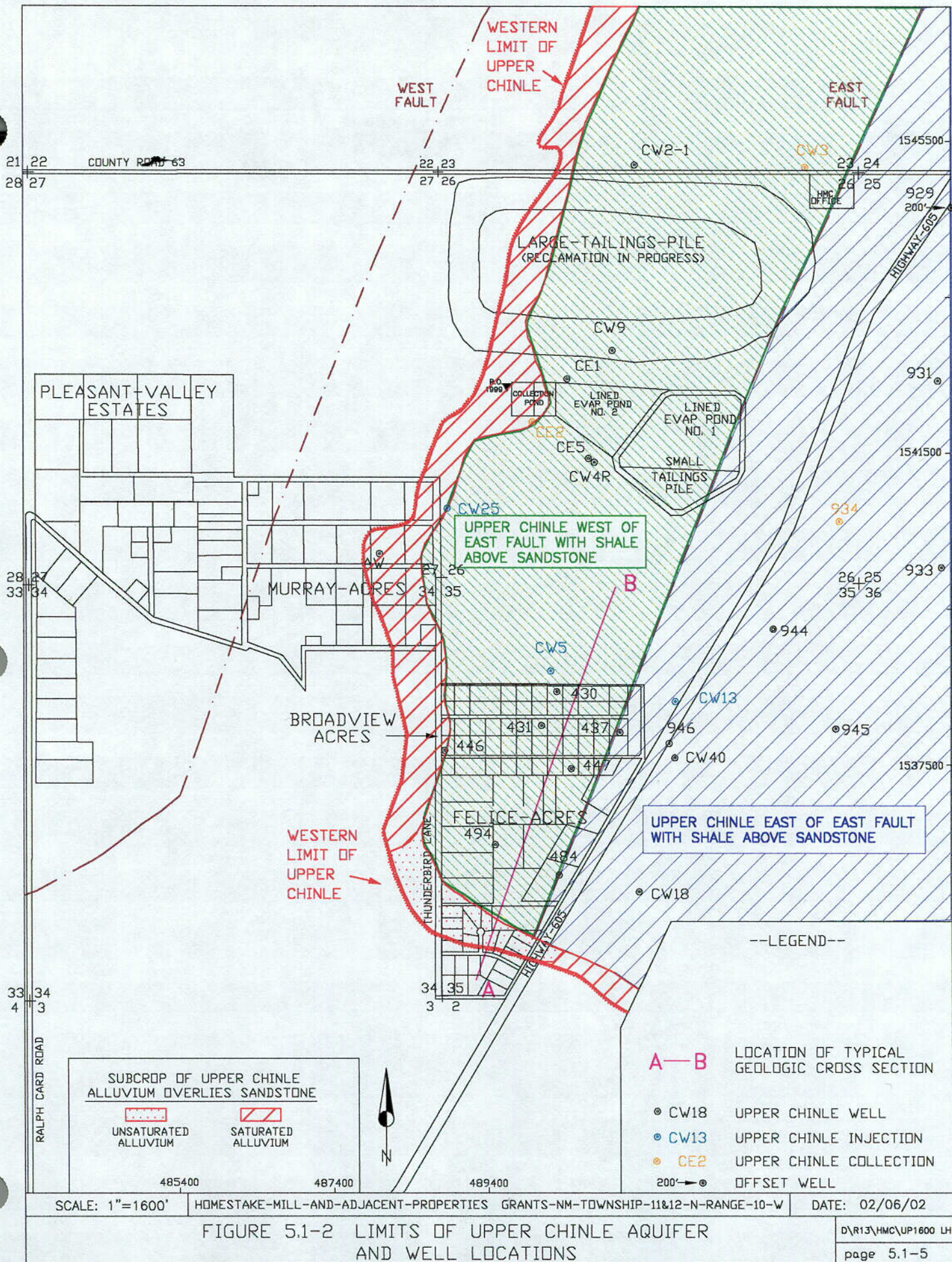
DATE: 02/18/02

FIGURE 5.1-1B. CHINLE AQUIFER WELL LOCATIONS

D:\R13\HMC  
BASE16 LH  
page 5.1-4

C02





C03



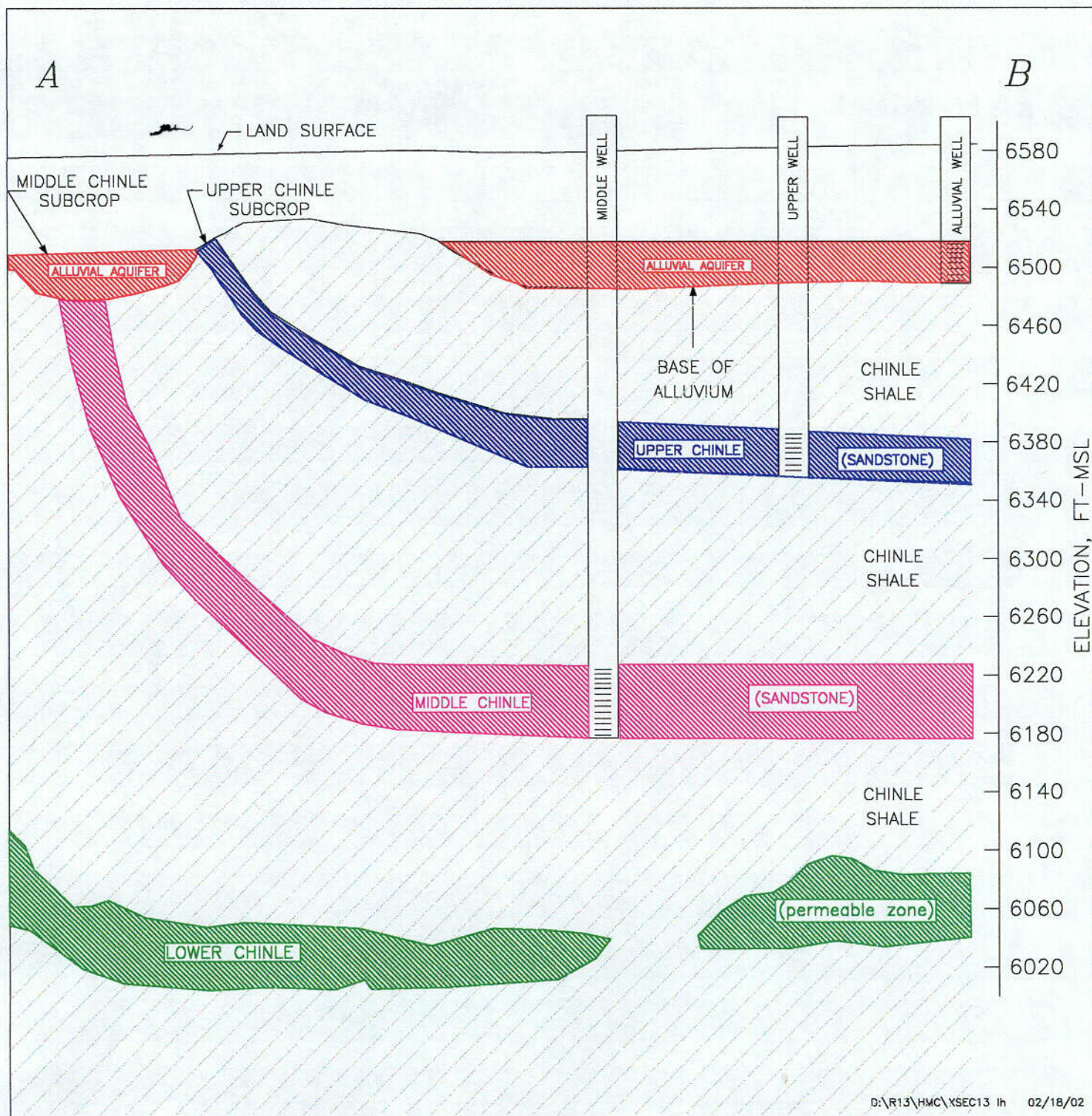


FIGURE 5.1-3. TYPICAL GEOLOGIC CROSS SECTION

**TABLE 5.1-1 BASIC WELL DATA FOR THE CHINLE HOMESTAKE WELLS**

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
0930	1542848	494997	410.0	6.0	12/12/01	113.13	6485.41	0.0	6598.54	30	6569	A -	---
										335	6264	M 330-400	Middle
0931	1542461	495207	366.7	6.0	12/12/01	94.48	6516.08	0.9	6610.56	339	6271	U -	Upper
0934	1540641	493941	293.0	7.0	12/12/01	115.40	6470.19	2.0	6585.59	30	6554	A -	---
										282	6302	U 330-400	Upper
CE1	1541923	489979	137.0	5.0	12/12/01	51.47	6518.72	4.4	6570.19	75	6491	A -	---
										106	6460	U 98-138	Upper
CE2	1542475	490434	119.7	5.0	12/17/01	63.59	6512.76	1.8	6576.35	74	6501	U 78-118	Upper
										74	6501	A -	---
CE5	1541453	490695	140.0	5.0	12/12/01	41.61	6526.94	1.6	6568.55	63	6504	A -	---
										103	6464	U 100-140	Upper
CW1	1545235	490295	325.0	5.0	12/17/01	160.33	6424.89	0.7	6585.22	105	6480	A -	---
										272	6313	M 212-323	Middle
CW2	1545212	491302	355.0	5.0	5/30/01	156.86	6428.62	1.7	6585.48	85	6499	A -	---
										136	6448	U -	---
										305	6279	M 306-353	Middle
CW2-1	1545212	491302	168.0	5.0	12/17/01	63.91	6521.57	1.7	6585.48	85	6499	A -	---
										136	6448	U 243-253	Upper
CW3	1545200	493496	235.0	5.0	12/17/01	188.64	6398.54	0.7	6587.18	70	6516	A -	---
										209	6377	U 210-235	Upper
										348	6238	M -	---
* CW4	1541682	490874	145.0	5.0	9/7/94	39.06	6531.89	0.8	6570.95	70	6500	A -	---
										112	6458	U 110-145	Upper
CW4R	1541416	490787	138.9	6.0	12/12/01	41.80	6526.93	1.3	6568.73	61	6506	A -	---
										104	6463	U 102-142	Upper
CW5	1538729	490221	170.0	5.0	12/17/01	21.30	6548.04	1.6	6569.34	65	6503	A -	---
										137	6431	U 135-170	Upper
CW6	1542588	488301	282.0	4.0	12/12/01	117.21	6458.43	1.0	6575.64	236	6339	M 246-276	Middle
CW7	1545285	488773	---	---	10/17/95	60.80	6522.79	0.0	6583.59	---	---	C 120-130	Chinle
CW8	1545009	491238	285.0	6.0	12/5/00	38.90	6552.93	0.0	6591.83	---	---	C 276-286	Chinle
										85	6507	A -	---
CW9	1542840	491015	180.0	5.0	12/12/01	66.00	6525.83	0.0	6591.83	---	---	U 130-180	Upper
										80	6512	A -	---
* CW10	1542823	491803	185.0	5.0	11/13/95	50.03	6537.86	0.0	6587.89	75	6513	A -	---
										167	6421	U 155-185	Upper
CW13	1538349	491827	267.7	6.0	12/17/01	15.00	6561.70	2.7	6576.70	230	6344	U 225-265	Upper
										378	6196	M -	---
CW14	1538786	488884	360.9	6.0	12/17/01	53.30	6512.79	2.9	6566.09	56	6507	A -	---
										66	6497	U -	---
										310	6253	M 278-358	Middle

**TABLE 5.1-1 BASIC WELL DATA FOR THE CHINLE HOMESTAKE WELLS**  
(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL		MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)	AQUIFER
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)					
CW17	1545279	487771	108.0	5.0	6/7/01	60.80	6528.52	3.1	6589.32	73	6513 A -	---
										85	6501 M 83-103	Middle
CW24	1545773	487760	118.0	5.0	10/3/00	57.79	6530.88	3.0	6588.67	61	6525 A -	---
										65	6521 M 78-118	Middle
CW25	1540802	488866	102.0	5.0	12/17/01	18.00	6549.20	3.0	6567.20	53	6511 A -	---
										53	6511 U 62-102	Upper
CW32	1543413	483523	300.0	6.0	12/12/01	116.11	6451.17	1.7	6567.28	70	6496 A -	---
										157	6409 L 158-188	Lower
										157	6409 L 218-303	---
CW33	1543814	486347	347.0	6.0	12/12/01	106.27	6468.62	1.8	6574.89	83	6490 A -	---
										272	6301 L 267-287	Lower
										272	6301 L 307-347	---
CW34	1547827	487707	65.7	6.0	8/27/96	65.65	6528.75	3.2	6594.40	20	6571 A -	---
										40	6551 M 33-63	Middle
CW35	1547001	488794	120.0	5.0	6/7/01	59.44	6531.73	1.9	6591.17	63	6526 A -	---
										90	6499 M 93-118	Middle
WR25	1545267	487430	113.3	5.0	10/3/00	61.10	6525.36	2.8	6586.46	50	6534 A -	---
										71	6513 M 71-111	Middle

NOTE: A = Alluvial Aquifer, Base  
U = Upper Chinle Aquifer, Top  
M = Middle Chinle Aquifer, Top  
L = Lower Chinle Aquifer, Top  
\* = Abandoned

E = Estimated Depth



**TABLE 5.1-2 BASIC WELL DATA FOR THE CHINLE BROADVIEW AND  
FELICE ACRES WELLS**

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL		MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)	AQUIFER	
					DATE	DEPTH (FT-MP)							ELEV. (FT-MSL)
Broadview													
0430	1538469	490300	145.0	---	---	---	---	0.0	6568.00	---	---	A -	Alluvium
										114	6454	U -	Upper
0431	1538045	490090	130.0	6.0	4/12/94	35.00	6533.00	0.0	6568.00	60	6508	A 125-130	Alluvium
										118	6450	U 125-130	Upper
0434	1538370	489420	280.0	6.0	---	---	---	0.0	6563.68	75	6489	A -	---
										265	6299	M -	Middle
0436	1538430	488850	295.0	5.0	10/29/96	71.82	6490.91	0.0	6562.73	90	6473	A -	---
										280	6283	M 280-295	Middle
0437	1537940	491100	340.0	5.0	10/29/96	63.23	6508.77	1.8	6572.00	90	6480	A -	---
										180	6390	U -	---
										280	6290	M 240-300	Middle
0446	1537720	488850	110.0	6.0	9/8/83	41.28	6518.72	0.0	6560.00	60	6500	U 60-95	Upper
										60	6500	A 60-95	Alluvium
0447	1537490	490480	142.0	6.0	4/11/85	41.18	6526.82	0.0	6568.00	---	---	A 120-142	Alluvium
										80	6488	U 120-142	Upper
0449	1537440	488830	267.0	6.0	12/5/94	63.42	6496.58	0.0	6560.00	---	---	M -	Middle
Felice Acres													
0481	1538350	490180	320.0	4.0	---	---	---	0.0	6568.00	110	6458	A 270-310	Alluvium
										270	6298	M 270-310	Middle
0482	1536985	489604	260.0	5.0	4/11/96	35.85	6526.81	0.0	6562.66	80	6483	A 220-260	Alluvium
										210	6353	M 220-260	Middle
0483	1536586	489753	280.0	---	7/24/96	36.93	6525.73	0.0	6562.66	---	---	M -	Middle
										---	---	A -	Alluvium
0484	1536448	490356	320.0	5.0	12/26/96	39.43	6524.55	0.0	6563.98	38	6526	A -	---
										129	6435	U -	---
										280	6284	M 220-300	Middle
0485	1535800	489630	260.0	6.0	7/18/96	70.90	6494.10	0.0	6565.00	35	6530	A -	---
										70	6495	U -	---
										223	6342	M 220-260	Middle
0486	1535800	489024	179.2	4.0	10/15/96	70.36	6488.04	0.0	6558.40	---	---	M 200-260	Middle
										21	6537	U -	---
										21	6537	A -	---
0487	1536175	488950	260.0	---	7/24/96	49.20	6511.80	0.0	6561.00	---	---	M -	Middle
0488	1536500	488950	---	---	8/7/96	78.10	6483.90	0.0	6562.00	---	---	M -	Middle
0489	1536850	488950	---	---	---	---	---	0.0	6562.00	---	---	M -	Middle
0493	1536510	489520	---	5.0	12/12/01	99.60	6460.68	0.9	6560.28	40	6519	A -	---
										65	6494	U -	---
										236	6323	M 270-300	Middle



**TABLE 5.1-2 BASIC WELL DATA FOR THE CHINLE BROADVIEW AND  
FELICE ACRES WELLS (cont'd.)**

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)	AQUIFER
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
0494	1536510	489590	---	5.0	12/12/01	35.09	6525.05	0.6	6560.14	40	6520	A -	---
										65	6495	U 65-85	Upper
CW44	1535048	488891	208.0	6.0	12/12/01	60.07	6500.67	2.5	6560.74	94	6464	A -	Alluvium
										130	6428	M 69-208	Middle
CW45	1535036	489494	193.0	5.0	12/12/01	56.72	6504.59	0.6	6561.31	90	6471	A -	---
										166	6395	M 163-193	Middle
CW46	1534642	489595	187.3	5.0	12/12/01	67.78	6494.48	1.5	6562.26	88	6473	A -	---
										112	6449	M 125-185	Middle

NOTE: A = Alluvial Aquifer, Base  
U = Upper Chinle Aquifer, Top  
M = Middle Chinle Aquifer, Top  
L = Lower Chinle Aquifer, Top  
\* = Abandoned

E = Estimated Depth

**TABLE 5.1-3 BASIC WELL DATA FOR THE CHINLE MURRAY ACRES AND  
PLEASANT VALLEY WELLS**

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)	AQUIFER
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
Murray													
0803	1540800	487430	---	6.0	9/19/83	84.86	6476.14	0.0	6561.00	---	---	C 85-180	Chinle
										85	6476	A 85-180	Alluvium
0807	1540100	488605	287.0	6.0	---	---	---	0.0	6565.00	63	6502	A -	---
										275	6290	M 275-285	Middle
0808	1540080	487490	290.0	5.0	---	---	---	1.6	6561.00	85	6474	A -	---
										255	6304	M 260-290	Middle
0812	1539910	488505	300.0	6.0	---	---	---	0.6	6566.00	68	6497	A -	---
										268	6297	M 264-284	Middle
0813	1539300	488620	280.0	6.0	---	---	---	0.0	6565.00	63	6502	A -	---
										230	6335	M 235-255	Middle
0814	1539030	488590	---	---	---	---	---	0.0	6565.00	---	---	M -	Middle
0816	1539110	487705	255.0	6.0	---	---	---	0.0	6557.00	35	6522	A -	---
										240	6317	M 240-250	Middle
0817	1539190	487590	---	---	7/22/95	70.34	6486.66	0.0	6557.00	---	---	M -	Middle
0818	1539090	487510	243.0	4.0	---	---	---	0.0	6557.00	62	6495	A -	---
										230	6327	M 223-243	Middle
0819	1539000	487000	222.0	6.0	---	---	---	0.0	6557.00	62	6495	A -	---
										210	6347	M 210-220	Middle
0820	1538890	486660	230.0	---	5/22/96	81.45	6476.55	0.0	6558.00	---	---	M 125-230	Middle
0821	1538810	487320	260.0	7.0	11/1/94	35.88	6524.12	0.0	6560.00	---	---	M -	Middle
0823	1540150	487720	265.0	6.0	---	---	---	0.0	6561.00	---	---	M 257-267	Middle
										40	6521	A -	---
ACW	1540235	488070	325.0	6.0	8/16/96	77.85	6485.95	1.2	6563.80	40	6523	A -	---
										57	6506	U -	---
										264	6299	M 265-325	Middle
AW	1540235	488015	156.0	6.0	1/5/98	15.00	6548.43	0.1	6563.43	63	6500	A -	Alluvium
										100	6463	U 66-155	Upper
HCW	1541060	487785	295.0	6.0	7/20/00	75.61	6486.39	1.0	6562.00	82	6479	A -	---
										264	6297	M 264-295	Middle
WCW	1541045	488520	307.0	6.0	12/18/01	114.70	6452.67	0.8	6567.37	83	6484	A -	---
										254	6313	M 257-307	Middle
Pleasant Valley													
0530	1540229	484358	490.0	5.0	10/30/98	95.78	6463.41	1.5	6559.19	265	6293	L -	Lower
0832	1539320	485670	280.0	4.0	---	---	---	0.0	6557.00	85	6472	A -	---
										240	6317	L 238-278	Lower
0837	1540995	485950	200.0	5.0	9/7/83	59.87	6507.13	0.0	6567.00	80	6487	A -	---
										160	6407	L 160-200	Lower
* 0842	1541650	483980	250.0	---	---	---	---	0.0	6558.00	---	---	L -	Lower

**TABLE 5.1-3 BASIC WELL DATA FOR THE CHINLE MURRAY ACRES AND  
PLEASANT VALLEY WELLS (cont'd.)**

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)	AQUIFER
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
0900	1540800	483700	172.1	---	7/24/95	91.41	6468.59	1.5	6560.00	---	---	L	Lower

NOTE: A = Alluvial Aquifer, Base  
U = Upper Chinle Aquifer, Top  
M = Middle Chinle Aquifer, Top  
L = Lower Chinle Aquifer, Top  
\* = Abandoned

E = Estimated Depth

**TABLE 5.1-4 BASIC WELL DATA FOR THE CHINLE REGIONAL WELLS**

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL		MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)	AQUIFER			
					DATE	DEPTH (FT-MP)							ELEV. (FT-MSL)		
0536	1539560	479701	160.0	5.0	9/12/00	144.70	---	-2.0	---	---	---	L -	Lower		
0536R	1539560	479721	280.0	4.0	---	---	---	---	---	---	---	L -	Lower		
0653	1533283	486570	206.0	6.0	9/17/01	171.44	6373.53	1.3	6544.97	97 135	6447 6409	A L	69-206 -	Alluvium Lower	
0850	1534652	486044	54.0	5.0	12/12/01	55.80	6493.35	3.2	6549.15	37 37	6509 6509	M A	29-54 -	Middle ---	
0853	1532124	484824	95.0	5.0	12/12/01	72.83	6468.55	1.7	6541.38	60 60	6480 6480	A L	- 55-95	---	Lower
0859	1534549	487426	83.0	5.0	12/12/01	75.38	6477.38	2.7	6552.76	52	6498	M	50-83	Middle	
0901	1531900	492900	270.0	5.0	11/4/81	46.88	6552.12	0.0	6599.00	40 190	6559 6409	A L	- 240-260	---	Lower
0902	1533700	488800	150.0	6.0	1/28/95	52.10	6507.90	0.0	6560.00	72 72	6488 6488	A M	- 78-102	---	Middle
0903	1530250	486900	281.0	5.0	---	---	---	0.0	6559.00	220	6339	L	120-260	Lower	
0904	1531100	487150	200.0	4.0	---	---	---	0.0	6560.00	---	---	L	170-200	Lower	
0908	1534430	483325	282.8	5.0	11/3/98	81.16	6463.21	1.5	6544.37	107 232	6436 6311	A L	- -	---	Lower
0909	1531900	483400	140.0	4.0	11/19/82	77.45	6461.45	0.0	6538.90	112 112	6427 6427	L A	80-135 80-135	Lower	Alluvium
0927	1548300	491700	---	---	12/17/01	147.94	6447.06	1.0	6595.00	---	---	C	-	Chinle	
0929	1544684	495585	320.0	5.0	12/12/01	66.73	6525.84	2.0	6592.57	---	---	U	290-320	Upper	
0932	1540434	495401	501.0	6.0	4/19/01	86.73	6515.38	0.0	6602.11	354 492	6248 6110	U M	- 450-490	---	Middle
0933	1540050	499730	---	5.0	12/17/97	52.78	6547.73	0.5	6600.51	---	---	U	-	Upper	
0937	1542200	481250	182.0	5.0	---	---	---	0.0	6578.00	70 160	6508 6418	A L	- 95-182	---	Lower
0944	1539280	493091	300.0	5.0	12/12/01	89.59	6499.02	1.6	6588.61	64 252	6523 6335	A U	- 220-280	---	Upper
0945	1537986	493900	300.0	---	3/21/85	92.41	6498.08	0.0	6590.49	---	---	U	-	Upper	
0946	1537804	491754	260.0	5.0	10/17/96	37.45	6541.59	0.0	6579.04	220	6359	U	230-260	Upper	
0948	1535190	490400	255.0	5.0	---	---	---	0.0	6568.10	200	6368	M	200-255	Middle	
0949	1540350	483600	551.0	---	---	---	---	0.0	6562.30	112 155 460 460	6450 6407 6102 6102	A L S S	- 260-290 505-551 400-493	---	Lower San Andres San Andres
0954	1534390	484260	307.0	5.0	12/27/94	77.22	6467.78	0.0	6545.00	225	6320	L	285-307	Lower	
0960	1534730	490110	305.0	6.0	4/5/95	67.46	6497.54	0.0	6565.00	280	6285	M	285-305	Middle	
0961	1534190	489720	240.0	5.0	4/5/95	67.40	6497.60	6.9	6565.00	200	6358	M	200-240	Middle	

**TABLE 5.1-4 BASIC WELL DATA FOR THE CHINLE REGIONAL WELLS**  
(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
0962	1533880	489530	238.0	6.0	---	---	---	0.0	6560.00	225	6335	M 220-238	Middle
0963	1532700	488900	---	4.0	---	---	---	0.0	6557.00	---	---	L -	Lower
0964	1531500	488000	200.0	6.0	---	---	---	0.0	6560.00	170	6390	L 170-200	Lower
0965	1531550	489100	200.0	4.0	---	---	---	0.0	6575.00	---	---	L 130-200	Lower
0966	1531300	489000	---	---	---	---	---	0.0	6575.00	---	---	L -	Lower
0967	1530500	487600	---	---	---	---	---	0.0	6570.00	---	---	L -	Lower
0968	1529700	488400	---	---	---	---	---	0.0	6630.00	---	---	L -	Lower
0969	1529400	488450	---	---	---	---	---	0.0	6640.00	---	---	L -	Lower
0970	1529100	488500	---	5.0	---	---	---	0.0	6660.00	---	---	L -	Lower
0988	1538140	482200	155.0	5.0	7/18/96	59.86	6589.14	1.3	6649.00	18	6630	A -	---
										152	6496	L 152-155	Lower
0990	1537600	482750	---	---	---	---	---	0.5	6550.00	---	---	L -	Lower
0994	1539700	476240	144.0	6.0	12/23/01	89.25	6465.75	0.0	6555.00	---	---	L 95-110	Lower
										---	---	A 95-110	Alluvium
CW15	1536259	485961	134.6	5.0	12/12/01	69.02	6482.30	2.6	6551.32	50	6499	A -	---
										91	6458	M 73-133	Middle
										311	6238	L -	---
CW16	1534747	488507	---	5.0	12/26/96	68.02	6490.52	0.0	6558.54	82	6477	M 112-152	Middle
										82	6477	A -	---
CW18	1535924	491378	230.7	5.0	12/12/01	37.08	6535.57	1.5	6572.65	90	6481	A -	---
										190	6381	U 177-232	Upper
										340	6231	M -	---
CW26	1534116	489593	300.0	5.0	12/12/01	87.75	6473.68	0.5	6561.43	50	6511	M -	---
										50	6511	A -	---
										231	6330	L 245-285	Lower
CW27	1534109	489600	110.0	5.0	12/12/01	70.06	6492.82	1.9	6562.88	50	6511	M -	Middle
										50	6511	A -	---
CW28	1535112	491008	370.0	5.0	12/12/01	83.76	6487.92	1.9	6571.68	90	6480	A -	---
										110	6460	U -	---
										294	6276	M 280-360	Middle
CW29	1534551	487435	290.0	5.0	12/12/01	78.91	6473.31	1.7	6552.22	52	6499	M -	---
										52	6499	A -	---
										228	6323	L 230-270	Lower
CW30	1536642	488704	251.5	5.0	12/12/01	89.68	6468.63	2.0	6558.31	35	6521	A -	---
										220	6336	M 219-249	Middle
CW31	1540689	482738	311.0	6.0	12/12/01	83.23	6477.03	2.0	6560.26	111	6447	A -	---
										254	6304	L 291-311	---
										254	6304	L 136-156	Lower
										254	6304	L 231-271	---
CW36	1540053	481329	180.0	5.0	12/12/01	74.58	6476.51	2.8	6551.09	96	6452	A -	---

**TABLE 5.1-4 BASIC WELL DATA FOR THE CHINLE REGIONAL WELLS**  
(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)	AQUIFER
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
CW36	1540053	481329	180.0	5.0	12/12/01	74.58	6476.51	2.8	6551.09	152	6396	L 155-177	Lower
CW37	1537240	484853	150.1	5.0	12/12/01	60.55	6490.62	1.3	6551.17	55	6495	A -	---
										100	6450	L 100-150	Lower
CW38	1540103	483429	174.8	5.0	11/14/97	55.18	6500.42	2.1	6555.60	108	6446	A -	---
										130	6424	L 133-173	Lower
CW39	1537260	483754	126.3	5.0	12/12/01	62.80	6487.91	3.4	6550.71	40	6507	A -	---
										87	6460	L 90-123	Lower
CW40	1537624	491819	264.0	5.0	12/12/01	41.04	6537.90	2.6	6578.94	75	6501	A -	---
										220	6356	U 224-264	Upper
CW41	1533174	488584	206.0	6.0	12/12/01	82.00	6473.41	1.5	6555.41	59	6495	A -	---
										138	6416	L 146-206	Lower
CW42	1533169	487177	205.0	6.0	12/12/01	73.56	6475.22	0.0	6548.78	98	6451	A -	---
										124	6425	L 125-205	Lower
CW43	1537587	482493	104.1	5.0	12/12/01	66.31	6482.48	2.0	6548.79	57	6490	A -	---
										57	6490	L 81-101	Lower

NOTE: A = Alluvial Aquifer, Base  
U = Upper Chinle Aquifer, Top  
M = Middle Chinle Aquifer, Top  
L = Lower Chinle Aquifer, Top  
\* = Abandoned

E = Estimated Depth

## **5.2 UPPER CHINLE WATER LEVELS**

### **5.2.1 WATER LEVELS - UPPER CHINLE**

Water levels in Homestake's Upper, Middle and Lower Chinle aquifer wells are presented in Appendix A. Appendix A contains a table with Homestake, subdivision, and regional Chinle wells. Figure 5.2-1 presents water-level elevation contours of the Upper Chinle aquifer for the Fall of 2001. The green arrows on Figure 5.2-1 show the direction of ground-water flow, which is greatly influenced by the fresh-water injection into the Upper Chinle at wells CW5, CW13 and CW25 and collection from wells CE2, CW3 and 934. Well CW13, an injection well on the east side of the East Fault, is in the high permeability zone of the Upper Chinle aquifer that parallels the East Fault. This high permeability zone exists at least out to 1000 feet east of the East Fault at well CW18. This injection combined with the pumping from 934 has created a head along the east side of the East Fault toward the subcrop area of greater than 6550 ft-msl. The permeability decreases to the east of the East Fault and, therefore, an easterly gradient occurs in the Upper Chinle away from the East Fault south of injection well CW13. A depression adjacent to the East Fault has developed from the 934 pumping causing flow to this area from the north, south and east. The green arrows show the direction of ground-water flow in this area.

The injection into Upper Chinle well CW5 causes ground-water flow to the north and south of this area. The flow that moves to the south discharges to the alluvial aquifer in the subcrop area of the Upper Chinle. Flow in the Upper Chinle also moves north of Broadview Acres to collection well CE2. Injection into Upper Chinle well CW25 was started in 2000, which causes flow from this well back to collection well CE2. The natural flow in the Upper Chinle aquifer west of the East Fault is from the north. The collection in CW3 intercepts this flow and also pulls some Upper Chinle water from the south.

The time plots for water level for the Chinle aquifers present the last six years to better show recent changes. Figure 5.2-2 presents the location of the Upper Chinle wells that are used to monitor water-level changes with time. The color of the well name and symbol is the same on Figure 5.2-2 as on the water-level plots. Figure 5.2-3

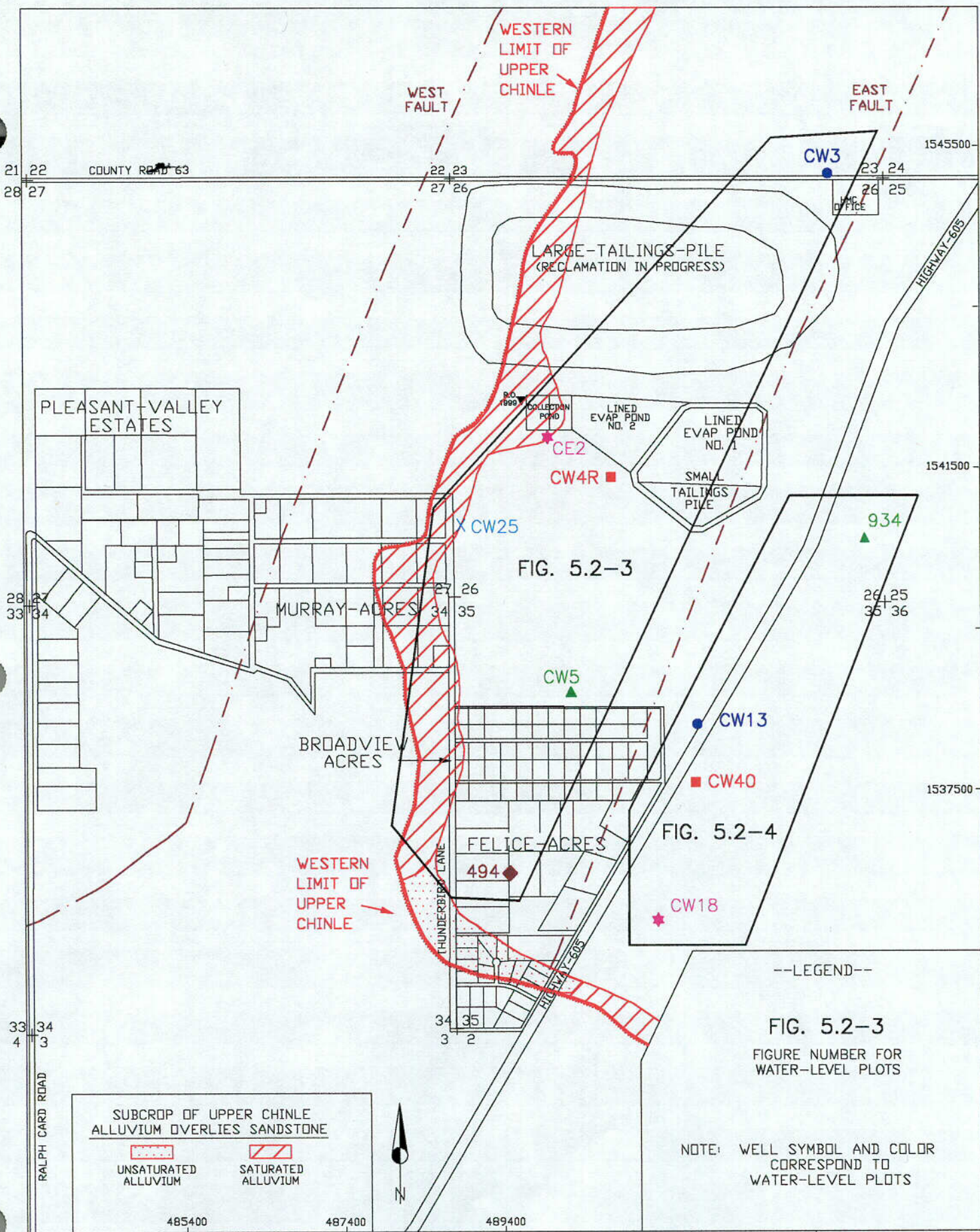
presents the water-level elevations plotted versus time for Upper Chinle wells CW3, CW4R, CW5, CE2, 494 and CW25. Water levels in the Upper Chinle wells CW5 and CW25 declined during 2001. The changes in water levels from collection well CE2 are due to variations in pumping in this well. Water levels in wells CW4R and 494 gradually declined with little affect from the CW3 pumping on these water levels.

Figure 5.2-4 presents the water-level elevation changes for the Upper Chinle wells east of the East Fault. The large water-level decline in 934 in 2001 was due to the start of pumping from this well. The water-level elevation in wells CW18 and CW40 in the Upper Chinle declined due to the 934 pumping. Their heads are still high enough to prevent the recharge of the Upper Chinle on the east side of the East Fault from the alluvial aquifer.



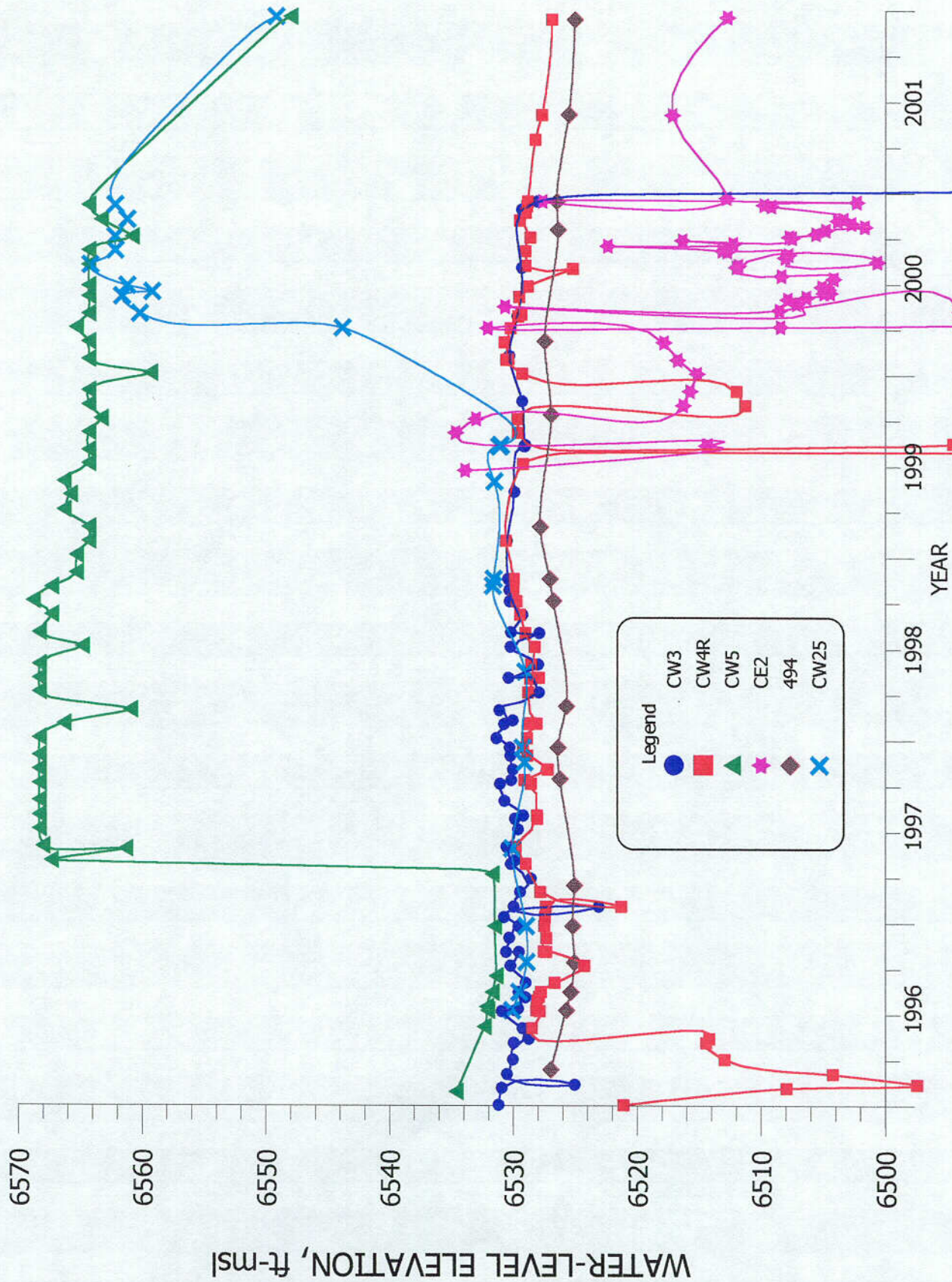






C06



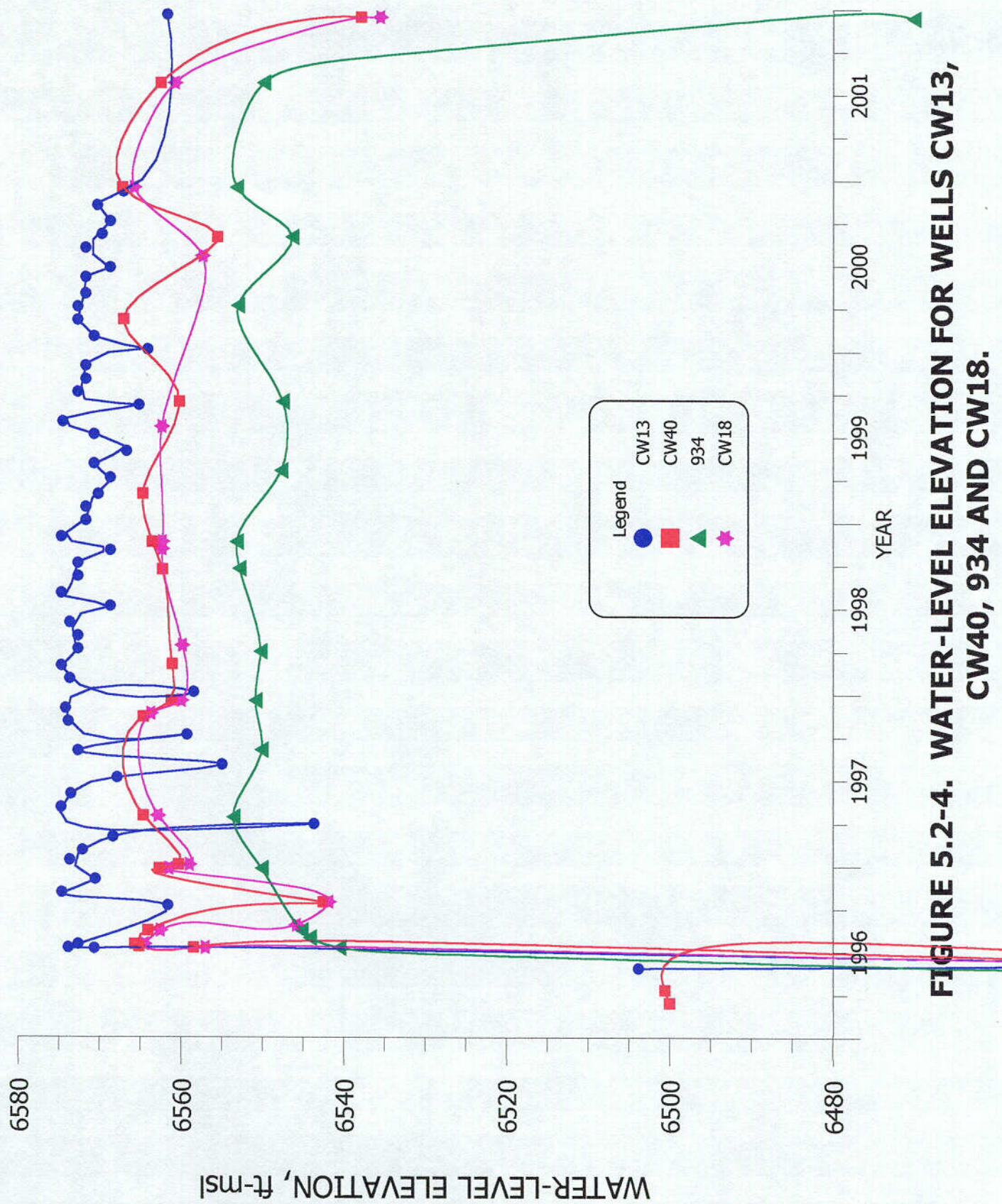


5.2-5

C06.1

**FIGURE 5.2-3. WATER-LEVEL ELEVATION FOR WELLS CW3, CW4R, CW5, CE2, 494 AND CW25.**





**FIGURE 5.2-4. WATER-LEVEL ELEVATION FOR WELLS CW13, CW40, 934 AND CW18.**

### **5.3 UPPER CHINLE WATER QUALITY**

The water quality data for 2001 for the Chinle aquifers is presented in Tables B.5-1 and B.5-2 of Appendix B. The basic well data presented in Tables 5.1-1 through 5.1-4 and Figure 5.1-2 show which of the Chinle wells are completed in the Upper Chinle.

The water quality in the Upper Chinle aquifer exceeds background conditions in only a few locations. Sulfate concentrations have been adequately restored in the Upper Chinle aquifer. Selenium concentrations are less than the NRC and State site standards in all Upper Chinle wells in 2001 except for the subcrop area near the large tailings at wells CE2 and CE5. Uranium concentrations exceed background in five wells that are slowly being restored due to the leaching of this constituent during restoration. No molybdenum concentrations in the Upper Chinle aquifer exceed the significant concentration.

#### **5.3.1 SULFATE - UPPER CHINLE**

Figure 5.3-1 presents the sulfate concentrations for the Upper Chinle aquifer during the Fall of 2001. The Upper Chinle concentrations varied from 565 to 959 mg/l. No values exceeded the range in background concentrations in the Upper Chinle in 2001. Background data is presented for sulfate in 2001 in a box in the upper left corner of Figure 5.3-1. Therefore, sulfate in this aquifer has been adequately restored. Background data is considered to be upgradient alluvial wells because the alluvial aquifer recharges the Upper Chinle in this area.

The location of wells used in the water-quality plots versus time are presented in Figure 5.3-2. The color and symbol of the individual wells are the same as on the various water quality time plots. Sulfate time plot figure numbers are also shown on Figure 5.3-2 for each group. The same color and symbol scheme is used for other constituents also. Figure 5.3-2 shows that Upper Chinle wells CW3, CW4R, CE2, 446 and 494 are grouped together on the water quality time plots.

Figure 5.3-3 presents the sulfate concentrations versus time for the above listed Upper Chinle wells. The sulfate concentrations in each of these wells are below

background, showing restoration of all Upper Chinle wells west of the East Fault (see Figure 5.3-3). Sulfate concentrations in well CE2 near the subcrop area south of the large tailings have declined to a concentration similar to those in the remainder of the Upper Chinle values.

Sulfate concentrations plotted versus time for Upper Chinle wells CW40, CW18, 929, 934 and 944 are presented on Figure 5.3-4 (see Figure 5.3-2 for location of these wells). This plot shows a gradual decline in sulfate concentrations in Upper Chinle wells for the last two years.

### **5.3.2 TOTAL DISSOLVED SOLIDS - UPPER CHINLE**

Figure 5.3-5 presents the total dissolved solids (TDS) concentrations for the Upper Chinle aquifer for the Fall of 2001. All concentrations are less than 2000 mg/l, with the exception of an area of the Upper Chinle east of State Highway 605 and a small area near the large tailings. The TDS concentration naturally increased to the east of the East Fault due to the slower movement of ground water in this less transmissive portion of the aquifer. No pattern is shown on Figure 5.3-5 because all of the Upper Chinle TDS concentrations are less than 3060 mg/l, which is the important level of this constituent. No concentration time plots are presented for this constituent because sulfate time concentration plots adequately define the variation of major constituents with time. TDS concentrations in the Upper Chinle aquifer do not require restoration.

### **5.3.3 URANIUM - UPPER CHINLE**

Uranium concentration in the Upper Chinle aquifer is an important parameter for the Upper Chinle. Figure 5.3-6 presents the uranium concentrations in the Upper Chinle aquifer for the Fall of 2001. Only four of the uranium concentrations in the Upper Chinle exceed the 0.43 mg/l concentration. The highest value east of the East Fault for 2001 was observed in well CW18 with a value of 0.05 mg/l. Only five values exceed the 2001 upper limit of uranium background concentrations of 0.21 mg/l (see Figure 3.2-1 or upper left box in Figure 5.3-6). These concentrations should gradually

be decreased to below background concentrations with the CE2 collection and the CW5 and CW25 injection.

Uranium concentrations plotted versus time for Upper Chinle wells CW3, CW4R, CE2, 446 and 494 are presented in Figure 5.3-7 (see Figure 5.3-2 for location of these wells). This plot shows that the uranium concentrations in Upper Chinle well CW4R were fairly steady in 2001. Uranium concentrations in well 494 were steady the last two years. The uranium concentrations in Upper Chinle collection well CE2 was fairly steady in 2001. All of the other uranium concentrations on this plot are very low.

The uranium concentrations in all of the Upper Chinle wells east of the Highway are very low. Figure 5.3-8 shows the uranium concentration for Upper Chinle wells CW18, CW40, 929, 934 and 944. The low uranium concentration in well CW18 is gradually declining with time. Concentrations in all of these wells are below the average background concentration and, therefore, do not require any restoration relative to uranium.

#### **5.3.4 SELENIUM - UPPER CHINLE**

Selenium concentrations for the Upper Chinle aquifer are presented in Figure 5.3-9 for the Fall of 2001. This figure shows that all of the selenium concentrations are less than 0.27 mg/l. The 2001 selenium concentration in well CE2 was 0.15 mg/l. The 0.27 mg/l value is based on the upper background level observed in the alluvial aquifer upgradient of the tailings.

Figure 5.3-10 presents the selenium concentration versus time for wells CW3, CW4R, CE2, 446 and 494. The selenium concentrations in the Upper Chinle aquifer in well CW4R increased in 1999 and has been fairly steady since the increase. The selenium concentration in collection well CE2 gradually declined in 2001. The selenium concentrations for all of the remaining wells on this plot are low.

Figure 5.3-11 presents the selenium concentrations versus time for Upper Chinle wells CW18, CW40, 929, 934 and 944. This plot shows that the selenium concentrations in 2001 for wells CW40 and CW18 have remained low after their restoration in 1997. These decreases in concentration are due to the fresh-water

injection in Upper Chinle well CW13 east of the East Fault. CW13 injection has also decreased the selenium concentration in well 944 to a low level.

#### **5.3.5 MOLYBDENUM - UPPER CHINLE**

Figure 5.3-12 presents the molybdenum concentrations in the Upper Chinle aquifer during 2001. The molybdenum concentrations near the large tailings are above 0.73 mg/l. Concentrations are above 0.1 mg/l extending outward toward the small tailings and the northeast corner of Murray Acres. A small amount of additional restoration is needed in this area, which should be accomplished with the collection from well CE2.

Figure 5.3-13 presents the molybdenum-time concentration plots for Upper Chinle wells between the two faults. Concentrations in wells CW4R and 494 in 2001 were similar to their 1999 concentrations. Well CE2 is planned to be part of the collection system for several years. Concentrations in well CE2 show an overall decline over the last three years.

Figure 5.3-14 shows molybdenum concentrations for wells CW18, 929, 934 and 944. This figure shows small molybdenum concentrations in each of these wells in 2001. The CW13 injection restored the concentrations in the area of well 944.

#### **5.3.6 NITRATE - UPPER CHINLE**

Nitrate monitoring for the Upper Chinle aquifer has been reduced due to all concentrations being lower than the State site standard of 12.4 mg/l. Nitrate concentrations are not expected to be significant in the future in the Upper Chinle aquifer due to the very limited extent of elevated concentrations in the alluvial aquifer.

#### **5.3.7 RADIUM-226 AND RADIUM-228 - UPPER CHINLE**

All radium concentrations have been low in past years in the Upper Chinle aquifer. Radium is not an important parameter relative to the Upper Chinle aquifer and should be removed as an NRC site standard.



### **5.3.8 VANADIUM - UPPER CHINLE**

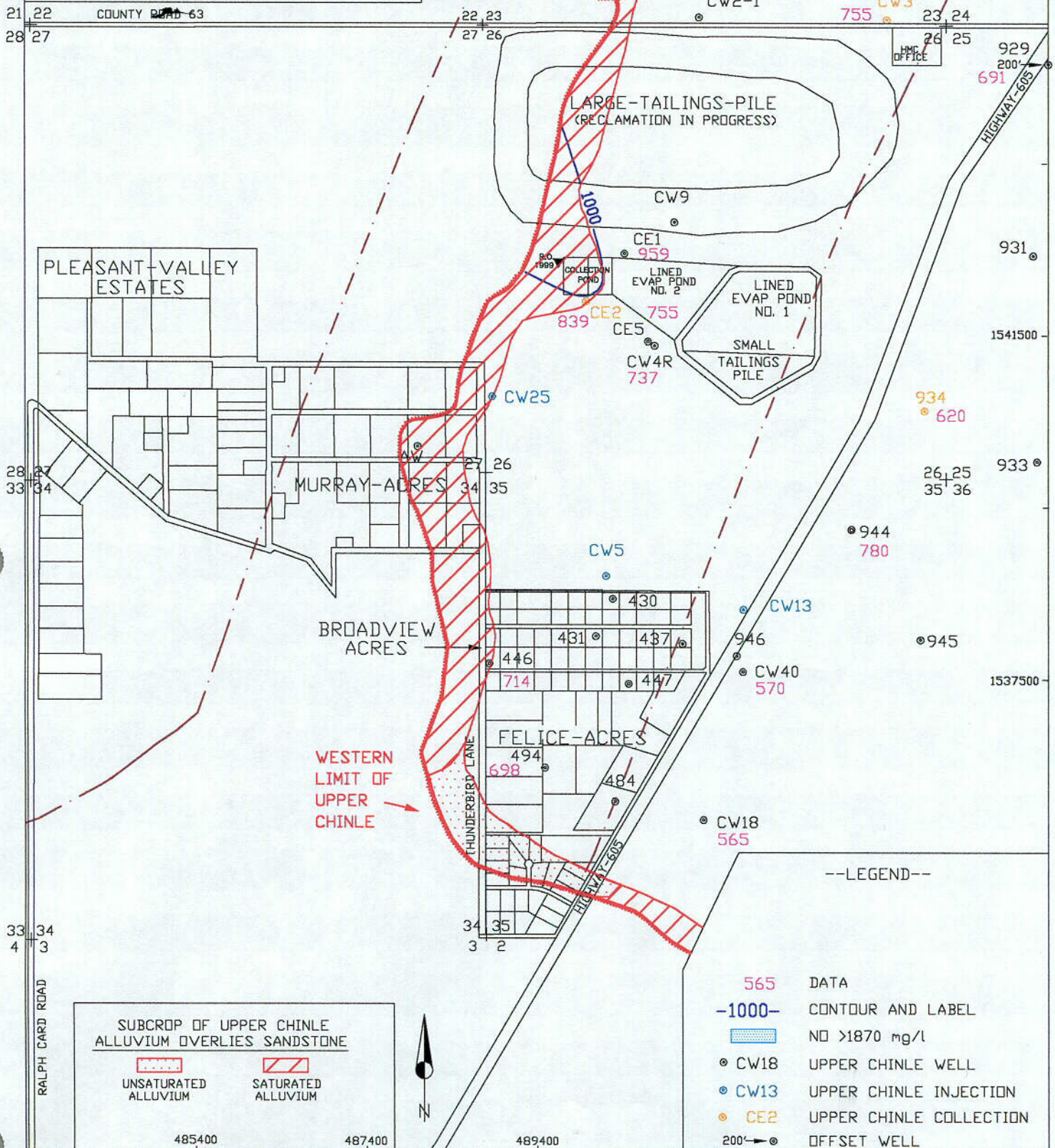
Vanadium concentrations have always been low in the Upper Chinle aquifer. Significant concentrations in the Upper Chinle aquifer would not be expected because this constituent has been slightly elevated in the alluvial aquifer only near the tailings. Vanadium concentrations in the Upper Chinle aquifer have never supported the use of this constituent as a site standard.

### **5.3.9 THORIUM-230 - UPPER CHINLE**

Thorium-230 concentrations have never been significant in the Upper Chinle aquifer and, therefore, should be dropped from the Upper Chinle monitoring list.

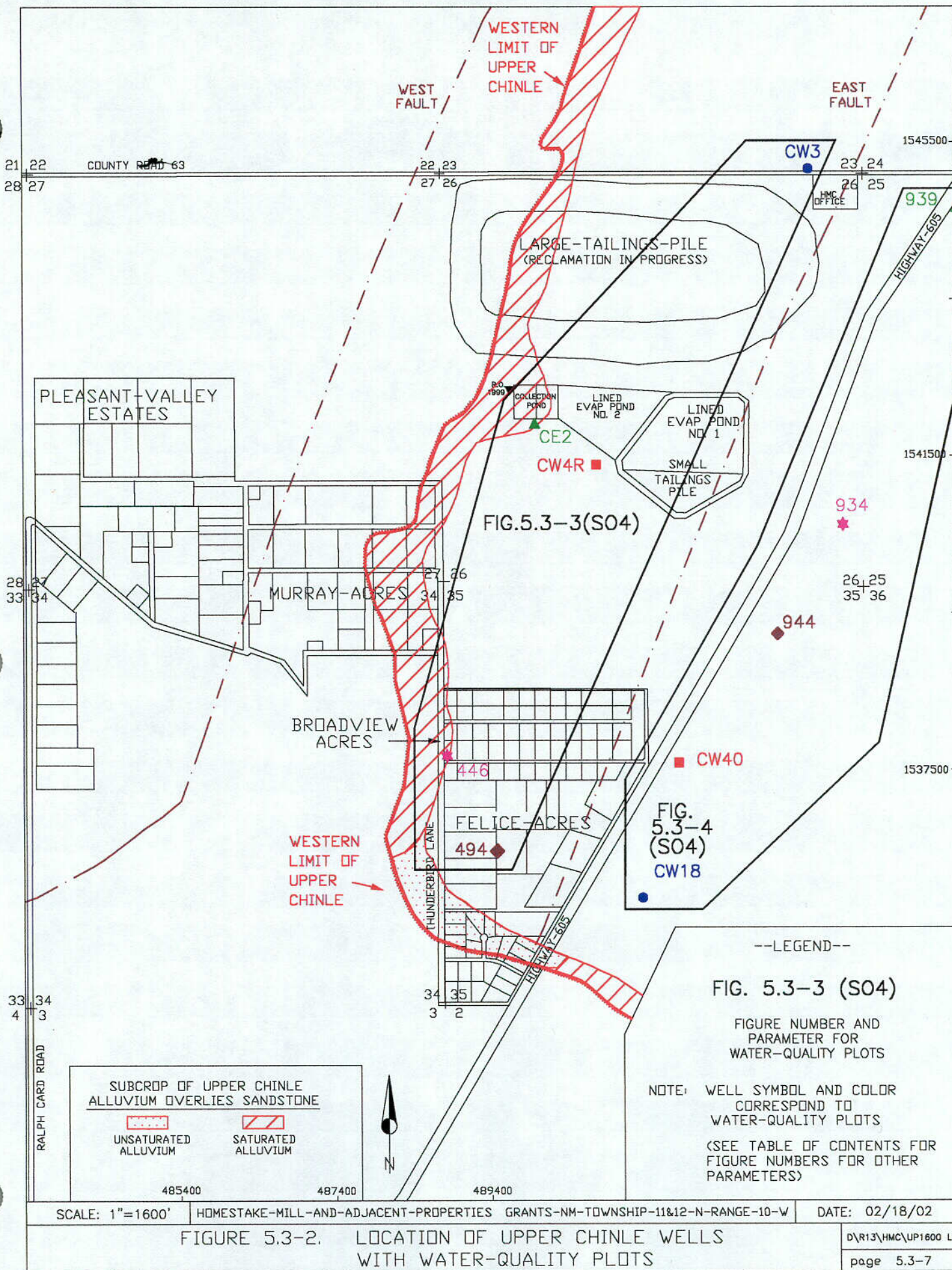
# SULFATE BACKGROUND

2001 (46 - 1380 mg/l)  
SIGNIFICANT CONC. = 1870 mg/l  
STATE SITE STANDARD = 976 mg/l



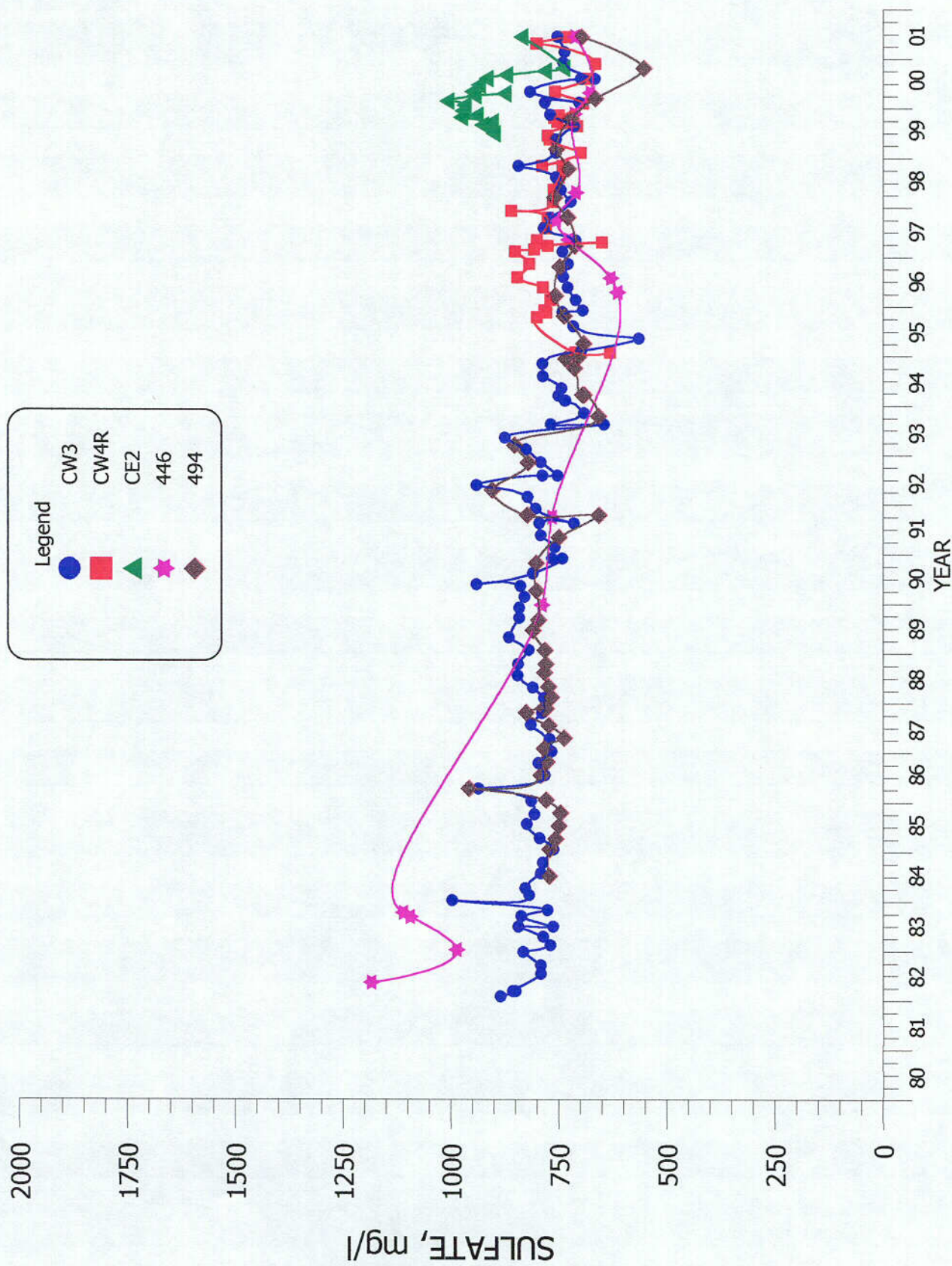
C07





c08



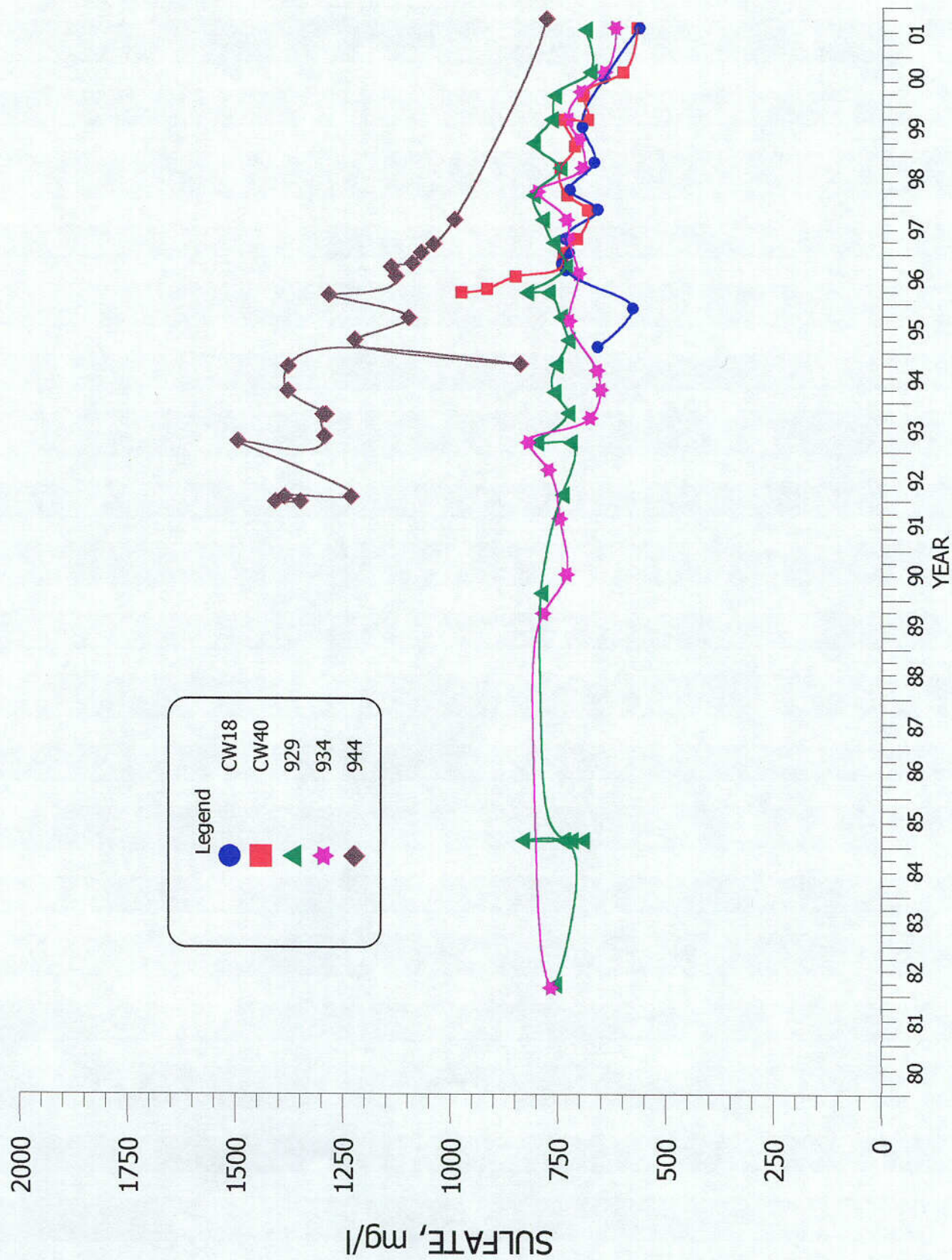


**FIGURE 5.3-3. SULFATE CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494.**

5.3-8

C08.1





**FIGURE 5.3-4. SULFATE CONCENTRATIONS FOR WELLS CW18, CW40, 929, 934 AND 944.**

C08.2

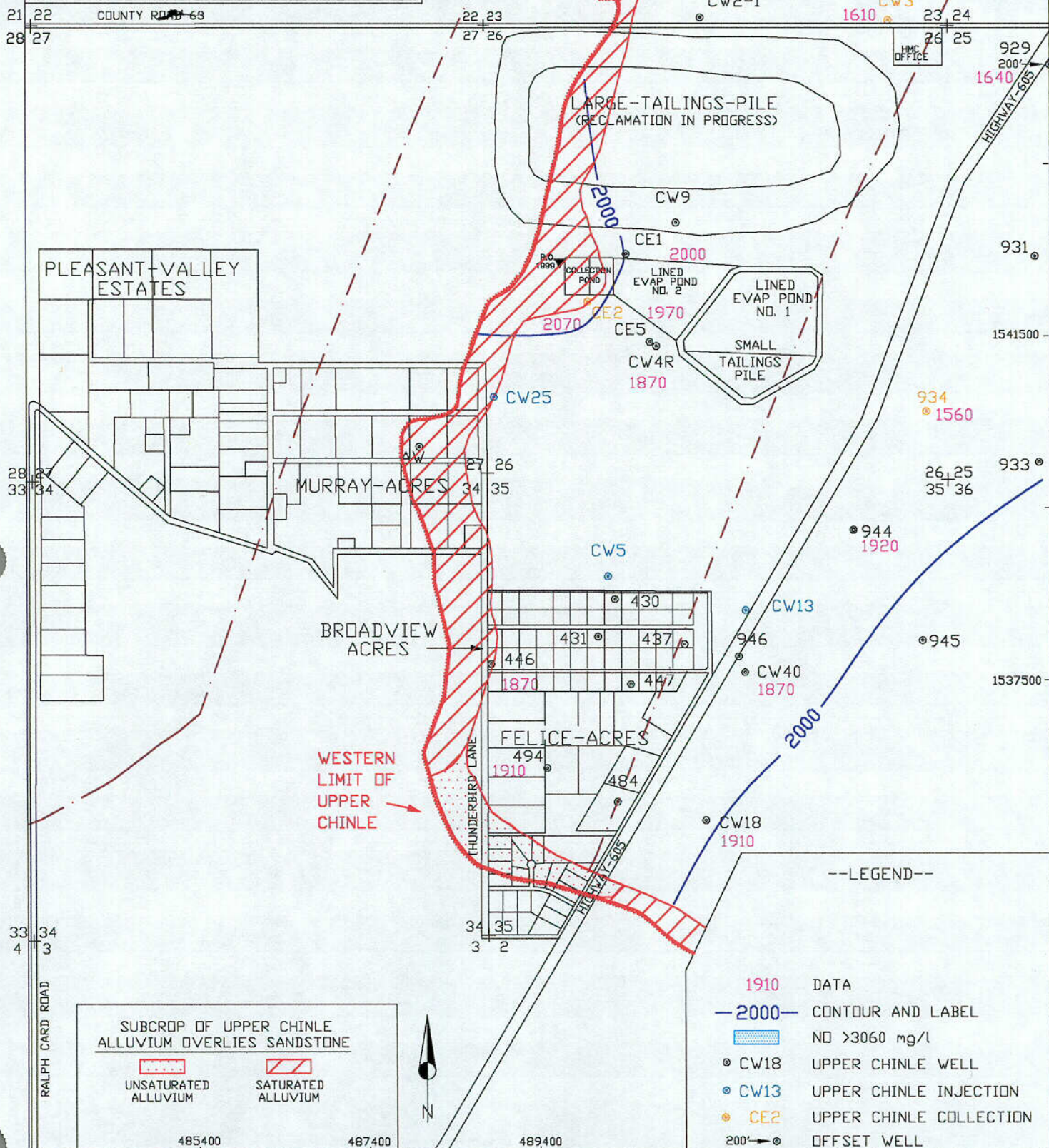


# TDS BACKGROUND

2001 (399 - 2690 mg/l)

SIGNIFICANT CONC. = 3060 mg/l

STATE SITE STANDARD = 1770 mg/l



SCALE: 1"=1600'

HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W

DATE: 02/18/02

FIGURE 5.3-5

TDS CONCENTRATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, mg/l

D:\R13\HMC\UP1600 LH

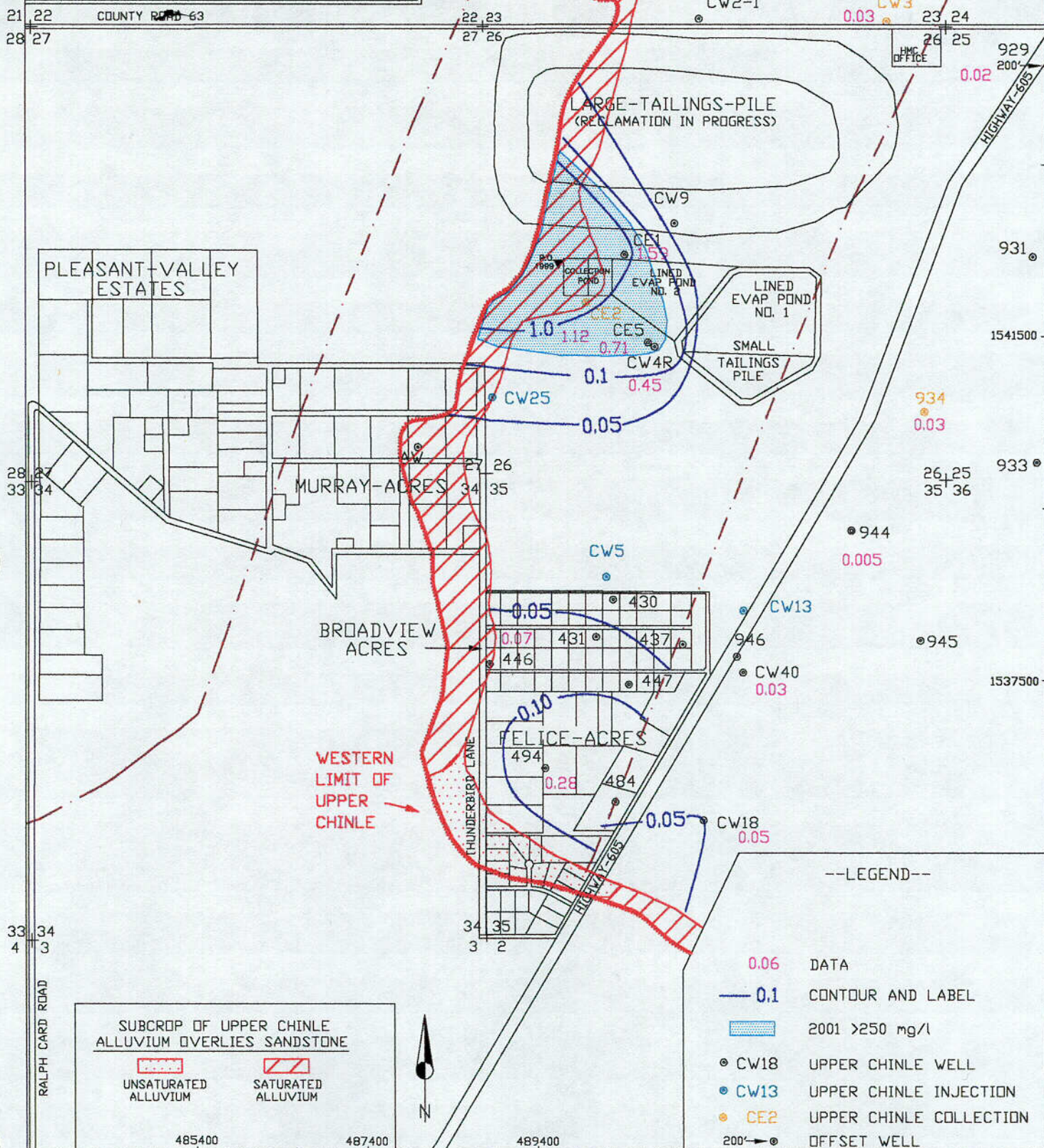
page 5.3-10

C09



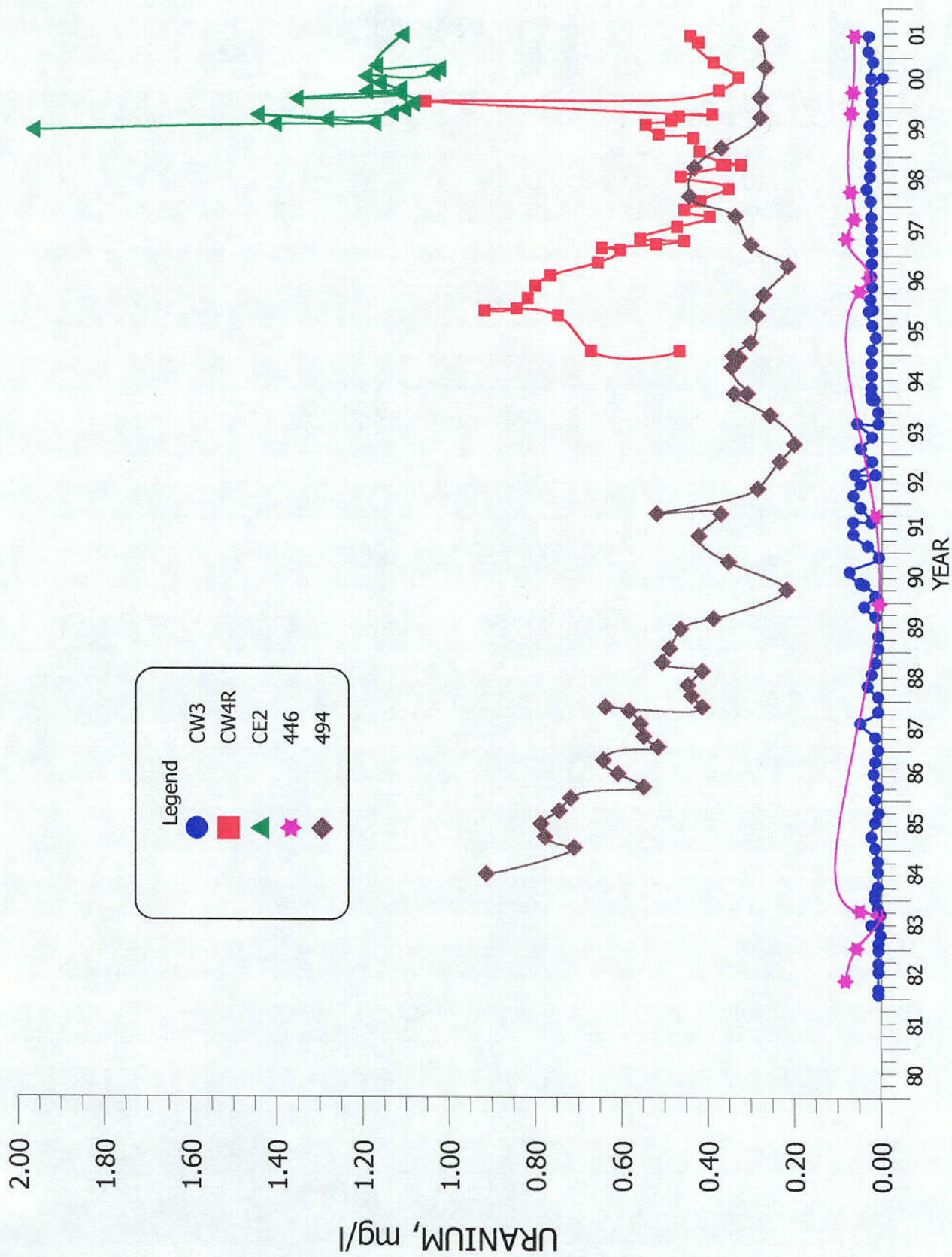
# URANIUM BACKGROUND

2001 ( <0.001 - 0.21 mg/l )  
 SIGNIFICANT CONC. = 0.43 mg/l  
 NRC SITE STANDARD = 0.04 mg/l  
 STATE SITE STANDARD = 5.0 mg/l



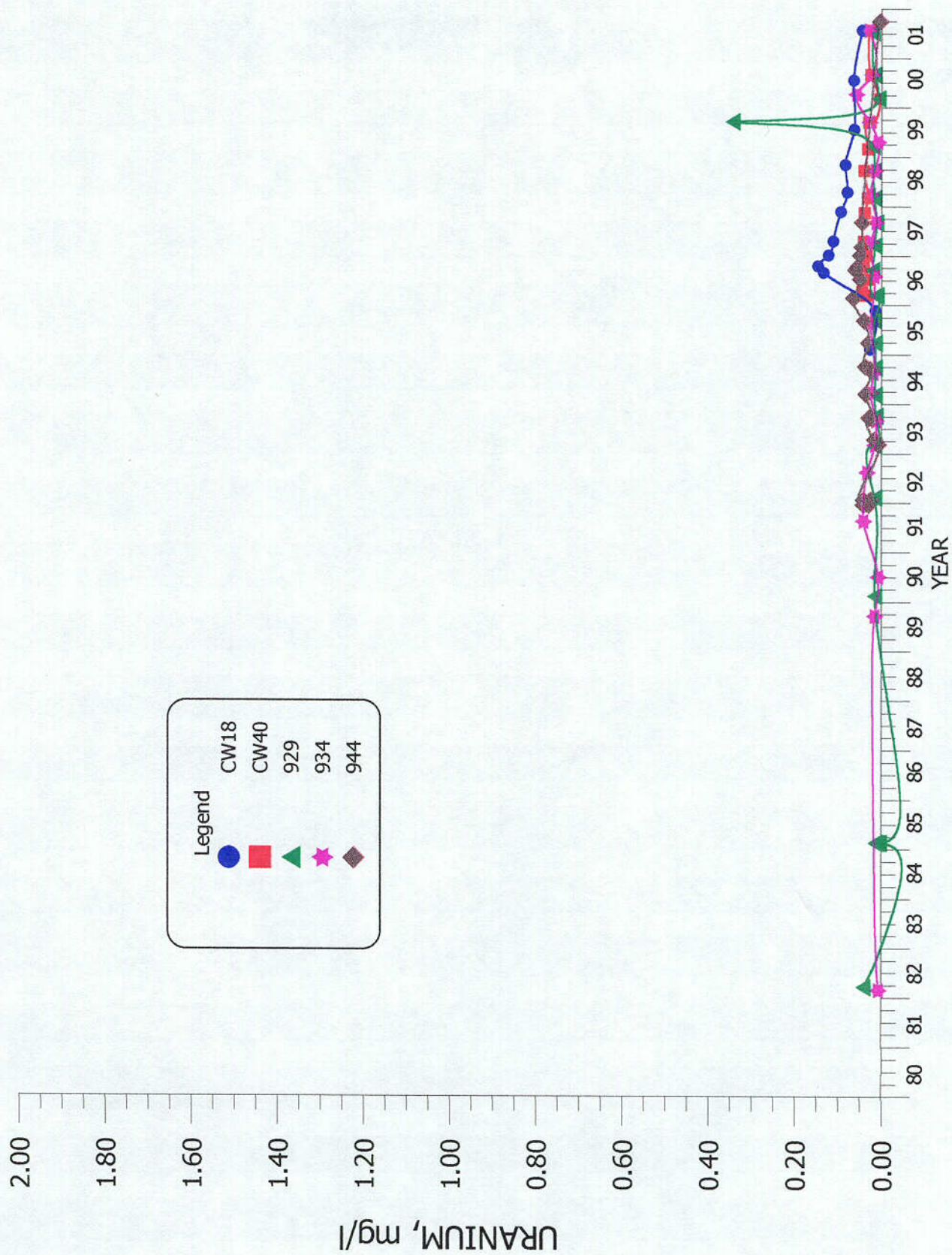
C10





**FIGURE 5.3-7. URANIUM CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494.**





**FIGURE 5.3-8. URANIUM CONCENTRATIONS FOR WELLS CW18, CW40, 929, 934 AND 944.**



# SELENIUM BACKGROUND

2001 ( <0.005-0.59)

SIGNIFICANT CONC. = 0.27 mg/l

NRC SITE STANDARD = 0.10 mg/l

STATE SITE STANDARD = 0.12 mg/l

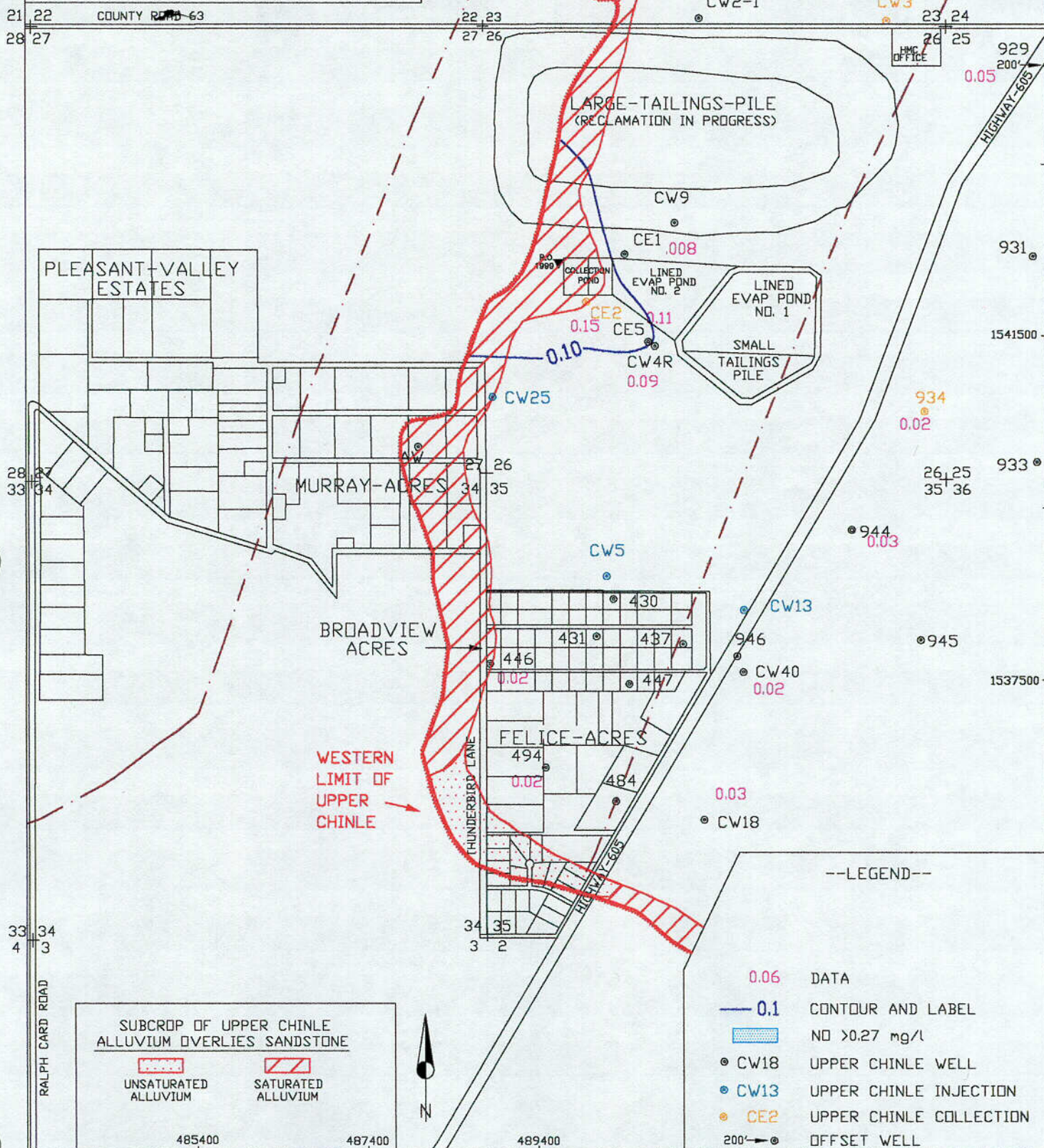
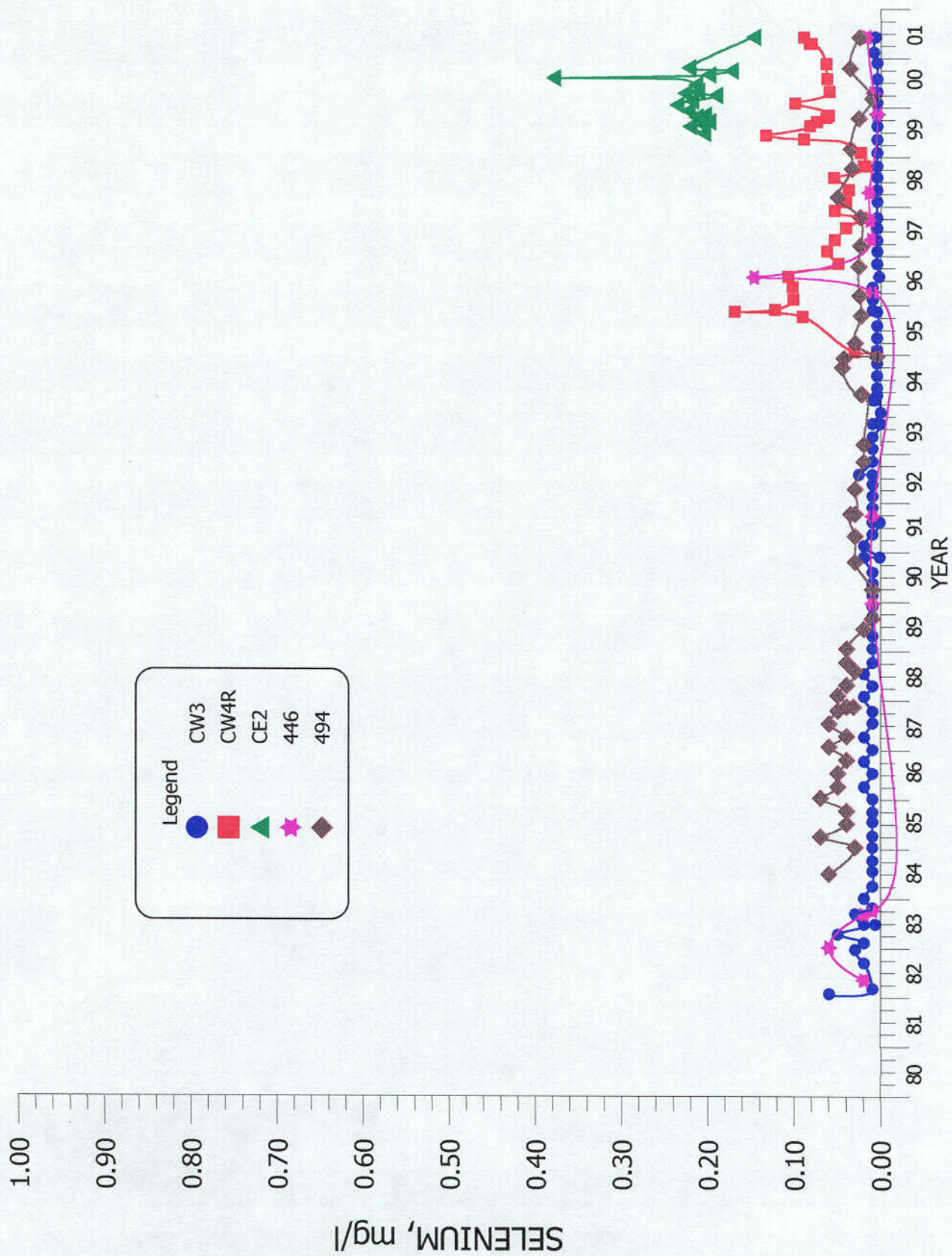


FIGURE 5.3-9. SELENIUM CONCENTRATIONS FOR THE UPPER CHINLE AQUIFER, FALL 2001, mg/l

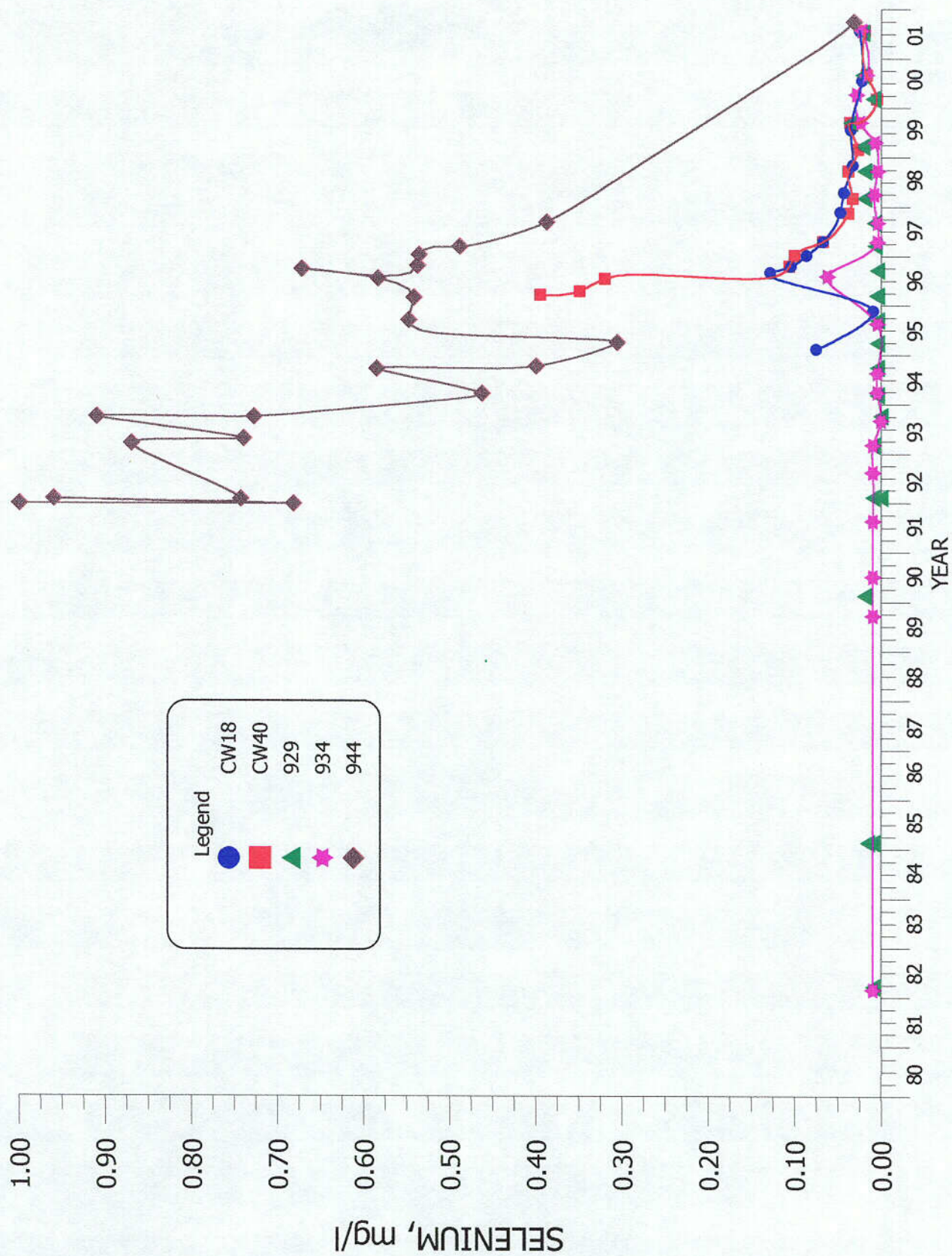
C11





**FIGURE 5.3-10. SELENIUM CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494.**



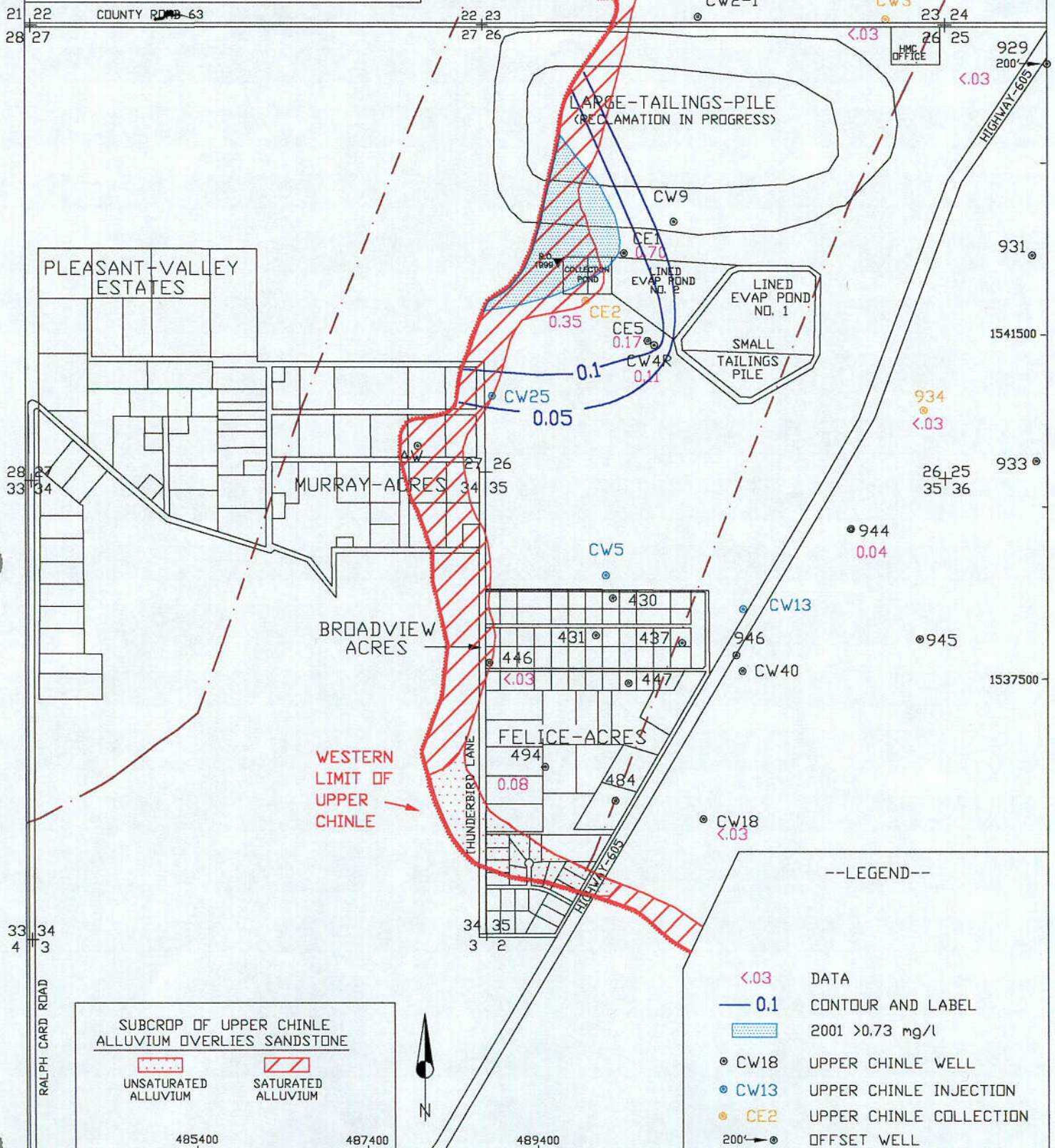


**FIGURE 5.3-11. SELENIUM CONCENTRATIONS FOR WELLS CW18, CW40, 929, 934 AND 944.**

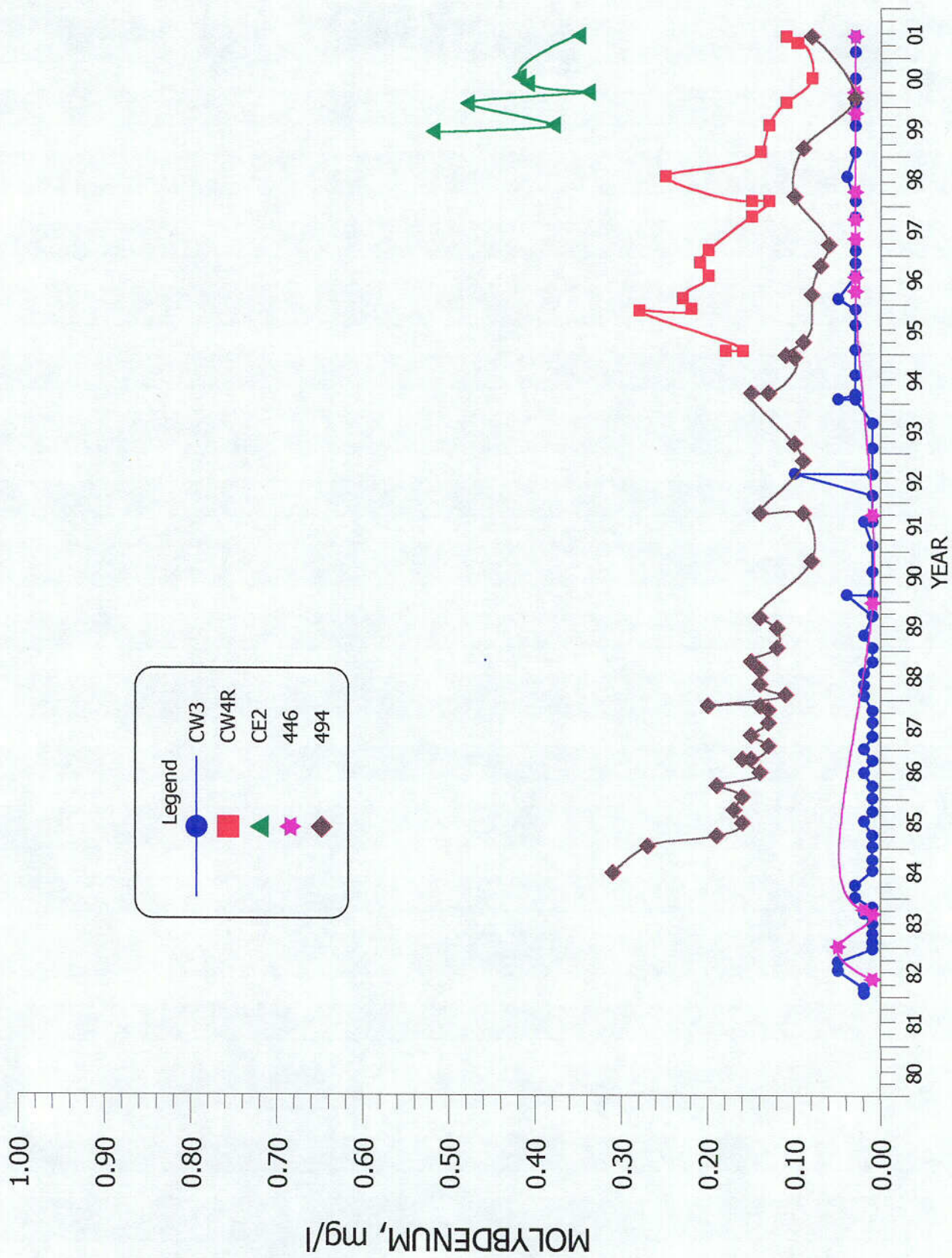


# MOLYBDENUM BACKGROUND

2001 ( $<0.03 - <0.03 \text{ mg/l}$ )  
 SIGNIFICANT CONC. =  $0.73 \text{ mg/l}$   
 NRC SITE STANDARD =  $0.03 \text{ mg/l}$   
 STATE SITE STANDARD =  $1.0 \text{ mg/l}$

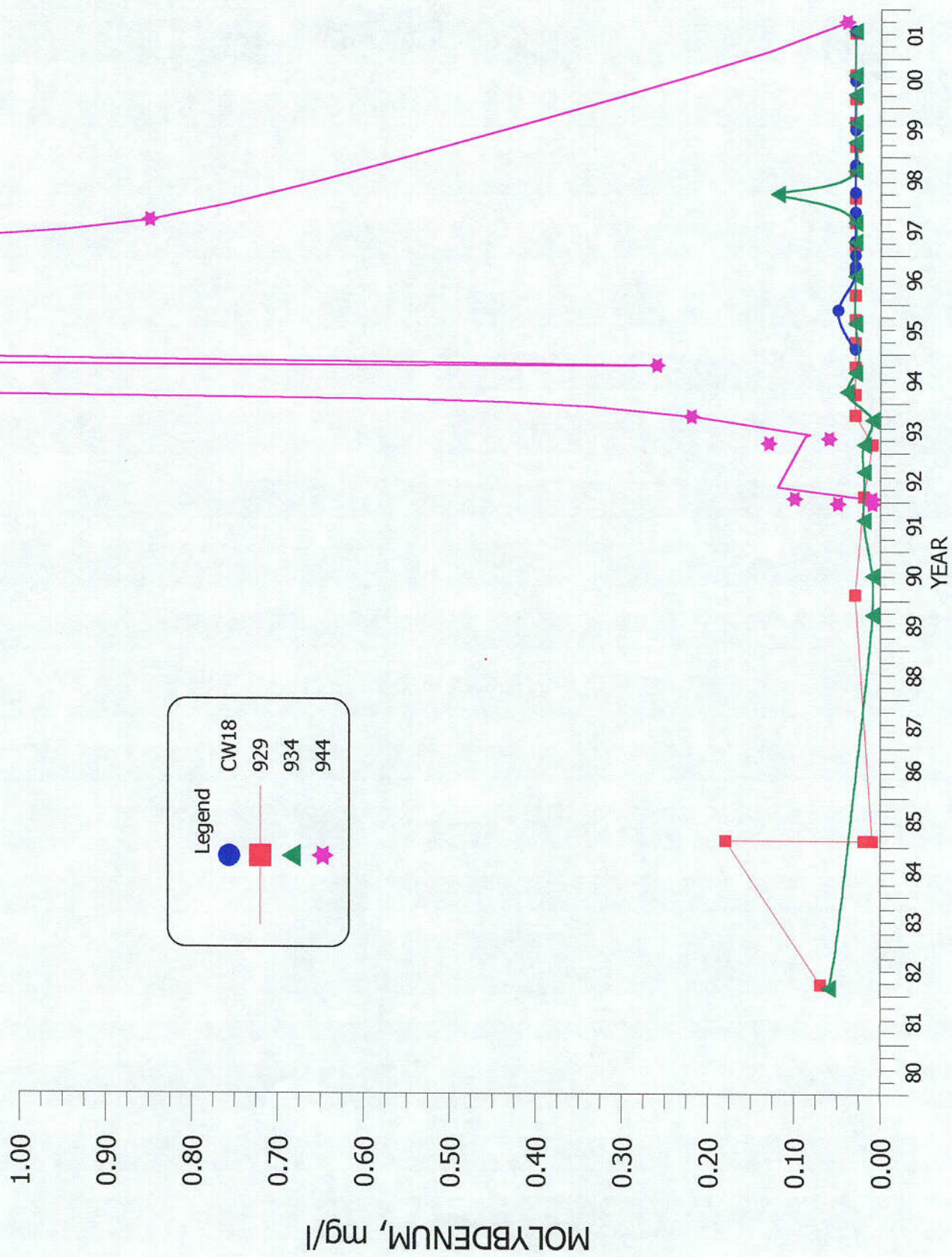






**FIGURE 5.3-13. MOLYBDENUM CONCENTRATIONS FOR WELLS CW3, CW4R, CE2, 446 AND 494.**





**FIGURE 5.3-14. MOLYBDENUM CONCENTRATIONS FOR WELLS CW18, 929, 934 AND 944.**

## SECTION 6

### TABLE OF CONTENTS

#### GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

	<u>Page Number</u>
<b>6.0 MIDDLE CHINLE AQUIFER MONITORING.....</b>	<b>6.1-1</b>
6.1 MIDDLE CHINLE WELL COMPLETION AND LOCATION .....	6.1-1
6.2 MIDDLE CHINLE WATER LEVELS .....	6.2-1
6.3 MIDDLE CHINLE WATER QUALITY .....	6.3-1
6.3.1 SULFATE - MIDDLE CHINLE .....	6.3-1
6.3.2 TOTAL DISSOLVED SOLIDS - MIDDLE CHINLE.....	6.3-2
6.3.3 URANIUM - MIDDLE CHINLE .....	6.3-2
6.3.4 SELENIUM - MIDDLE CHINLE .....	6.3-3
6.3.5 MOLYBDENUM - MIDDLE CHINLE .....	6.3-4
6.3.6 NITRATE - MIDDLE CHINLE .....	6.3-5
6.3.7 RADIUM-226 AND RADIUM-228 - MIDDLE CHINLE.....	6.3-5
6.3.8 VANADIUM - MIDDLE CHINLE .....	6.3-5
6.3.9 THORIUM-230 - MIDDLE CHINLE.....	6.3-5

#### FIGURES

6.1-1	LIMITS OF MIDDLE CHINLE AQUIFER AND WELL LOCATIONS.....	6.1-2
6.2-1	WATER-LEVEL ELEVATIONS FOR THE MIDDLE CHINLE AQUIFER, FALL 2001, FT-MSL .....	6.2-3
6.2-2	LOCATION OF MIDDLE CHINLE WELLS WITH WATER-LEVEL PLOTS.....	6.2-4
6.2-3	WATER-LEVEL ELEVATION FOR WELLS CW15, CW28, CW45 AND 493 .....	6.2-5
6.2-4	WATER-LEVEL ELEVATION FOR WELLS CW2, CW17, CW35 AND WCW .....	6.2-6
6.3-1	SULFATE CONCENTRATIONS FOR THE MIDDLE CHINLE AQUIFER, FALL 2001, mg/l.....	6.3-6
6.3-2	LOCATION OF MIDDLE CHINLE WELLS WITH WATER-QUALITY PLOTS.....	6.3-7
6.3-3	SULFATE CONCENTRATIONS FOR WELLS CW15, CW28, CW44, CW45 AND 493.....	6.3-8
6.3-4	SULFATE CONCENTRATIONS FOR WELLS CW2, CW17, CW35 AND 434 .....	6.3-9



## SECTION 6

### TABLE OF CONTENTS

#### GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

##### FIGURES (continued)

	<u>Page Number</u>
6.3-5 TDS CONCENTRATIONS FOR THE MIDDLE CHINLE AQUIFER, FALL 2001, mg/l.....	6.3-10
6.3-6 URANIUM CONCENTRATIONS FOR THE MIDDLE CHINLE AQUIFER, FALL 2001, mg/l.....	6.3-11
6.3-7 URANIUM CONCENTRATIONS FOR WELLS CW15, CW28, CW44, CW45 AND 493.....	6.3-12
6.3-8 URANIUM CONCENTRATIONS FOR WELLS CW2, CW17, CW35 AND 434 .....	6.3-13
6.3-9 SELENIUM CONCENTRATIONS FOR THE MIDDLE CHINLE AQUIFER, FALL 2001, mg/l.....	6.3-14
6.3-10 SELENIUM CONCENTRATIONS FOR WELLS CW15, CW28, CW44, CW45 AND 493.....	6.3-15
6.3-11 SELENIUM CONCENTRATIONS FOR WELLS CW2, CW17, CW35 AND 434 .....	6.3-16
6.3-12 MOLYBDENUM CONCENTRATIONS FOR THE MIDDLE CHINLE AQUIFER, FALL 2001, mg/l.....	6.3-17
6.3-13 MOLYBDENUM CONCENTRATIONS FOR WELLS CW2, 434, AND 493 .....	6.3-18

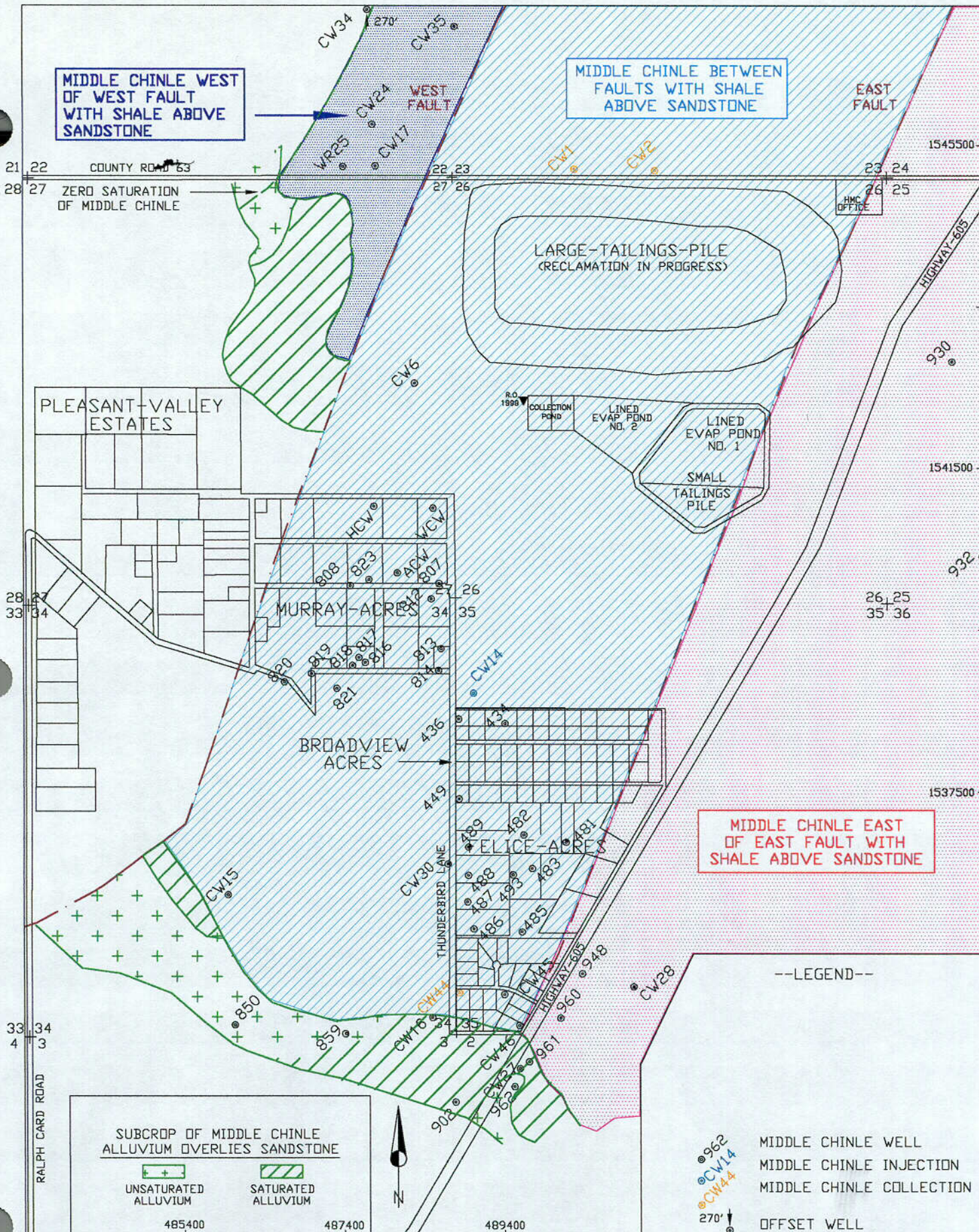
## **6.0 MIDDLE CHINLE AQUIFER MONITORING**

### **6.1 MIDDLE CHINLE WELL COMPLETION AND LOCATION**

Basic well data tables for the Middle Chinle wells are presented in the Upper Chinle Section 5.1. Tables 5.1-1 through 5.1-4 present the Chinle basic well data. Figure 6.1-1 shows the locations of the Middle Chinle wells and areas where the Middle Chinle aquifer exists at the Grants Project. The light blue area is where the Middle Chinle aquifer exists between the West and East Faults and has Chinle shale between the top of the Middle Chinle sandstone and the base of the alluvium. The green areas show where the alluvium overlies the Middle Chinle sandstone and produces direct contact between these two units. The area where the alluvium is saturated over the Middle Chinle sandstone is very important with respect to transfer of water between these two aquifers and is shown with the green cross hatch. The area where the Middle Chinle subcrops against alluvium that is not saturated is shown by the green plus (+) pattern. Wells CW1 and CW2 were used in 2001 as a source of water for the tailings flushing.

The Middle Chinle aquifer also exists east of the East Fault in the red pattern area with a subcrop zone on the south side of this area. A limited area (dark blue) of Middle Chinle aquifer exists west of the West Fault. All three of these areas in the Middle Chinle aquifers act as separate ground-water systems with the exception of some contact between the two areas where the East Fault ceases to the south.





C13



## **6.2 MIDDLE CHINLE WATER LEVELS**

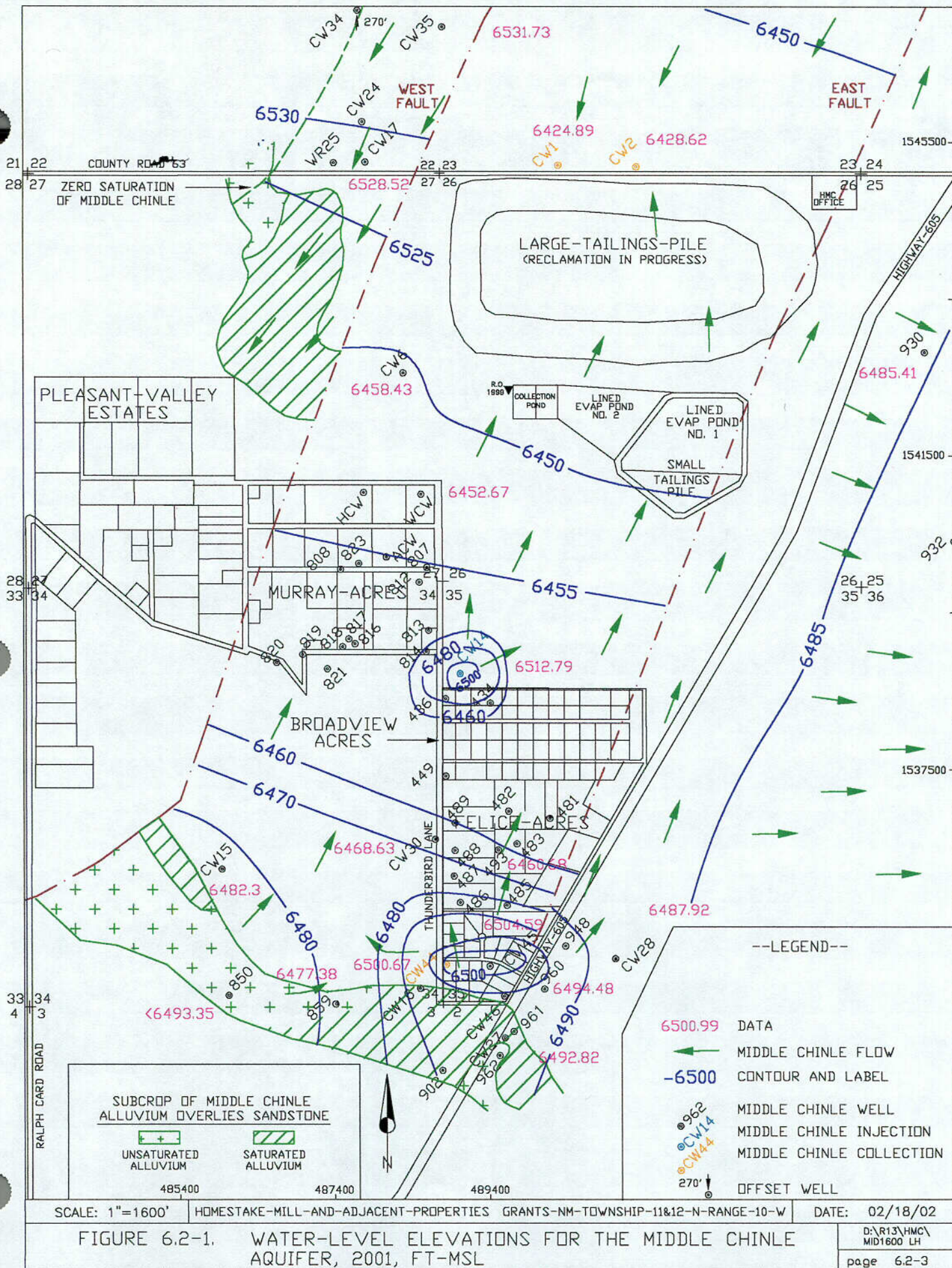
Water levels in Homestake's Upper, Middle and Lower Chinle wells are presented in Appendix A. Fall of 2001 water-level elevations for the Middle Chinle aquifer are presented on Figure 6.2-1. The gradient in the Middle Chinle aquifer is steeper in its subcrop area in the southern portion of Felice Acres near wells CW44, CW45 and CW46. This increase in gradient is due to an influx of water in the area to the Middle Chinle aquifer from the alluvial aquifer. The green arrows show the direction of ground-water flow in the Middle Chinle aquifer. Flow on the east side of the East Fault is mainly to the north near the East Fault, but due to a decrease in the transmissivity in the aquifer to the east, flow moves easterly away from the East Fault.

Ground-water flow west of the West Fault is to the southwest, discharging into the alluvial aquifer. This prevents the alluvial aquifer from affecting the water quality of the Middle Chinle aquifer on the west side of the West Fault. This Middle Chinle water flows from upgradient of the site into the area west of the large tailings. The remainder of the Middle Chinle aquifer is recharged by the alluvial aquifer south of Felice Acres.

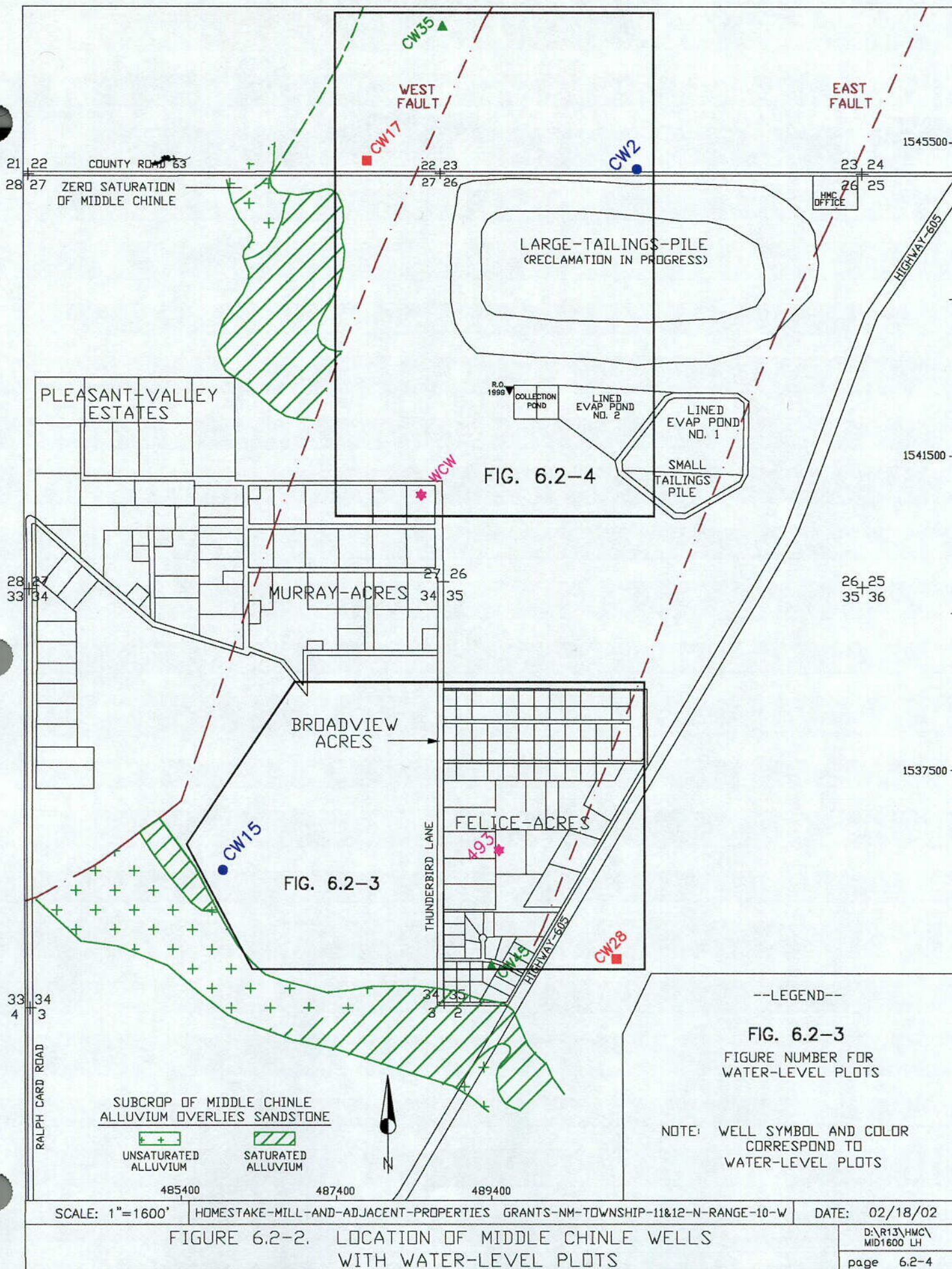
A mound of water around well CW14 has been created by the injection of fresh water into this well. This causes the ground-water flow to be to the north and south of well CW14. Collection from wells CW1 and CW2 intercepts the flow from the south in the Middle Chinle aquifer between the two faults. This pumping also pulls water flow from the north to these wells. The head in the Middle Chinle aquifer on each side of the two faults is significantly different than the head between the two faults, which shows that the ground water is not readily connected on each side of these faults.

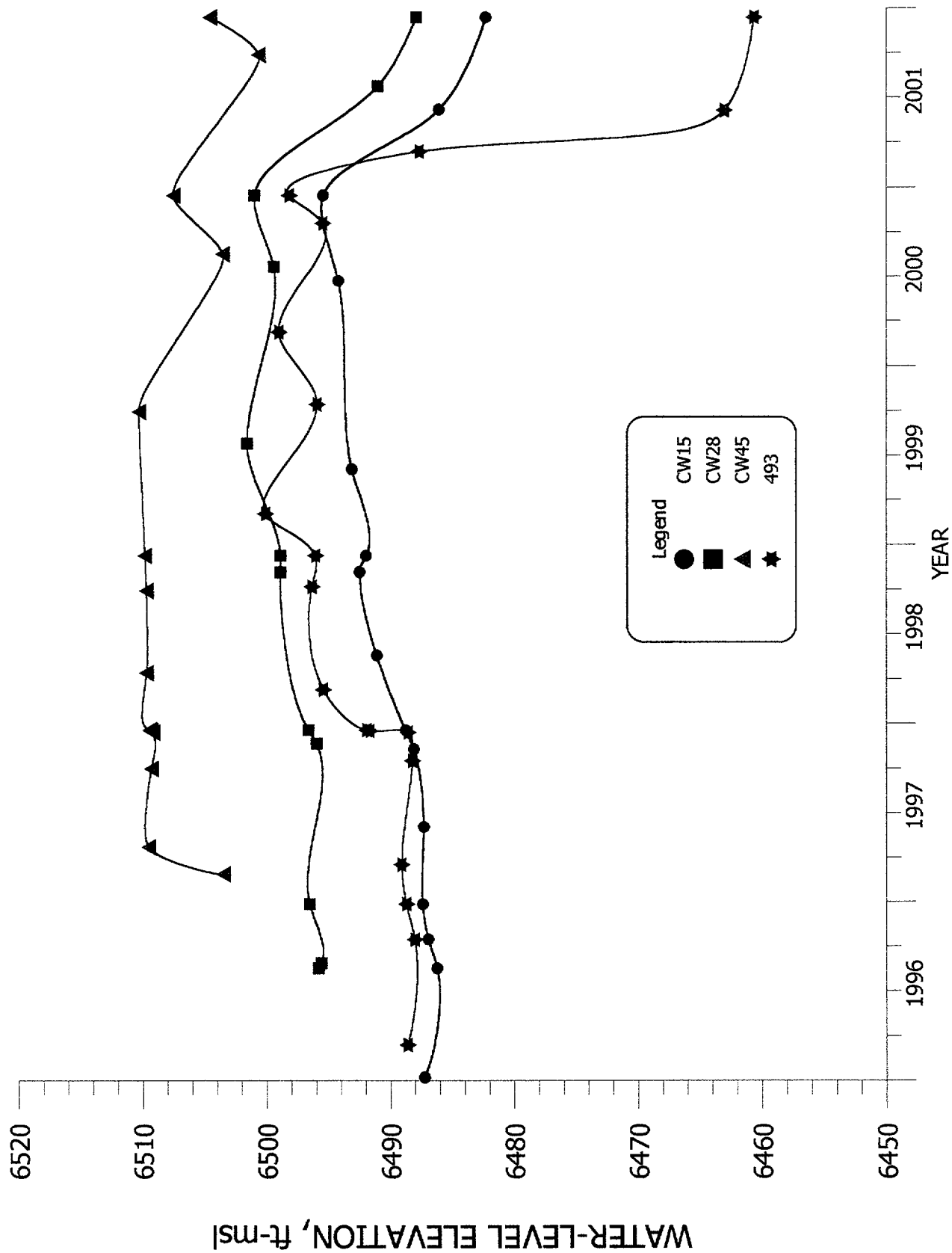
Figure 6.2-2 shows the location of the Middle Chinle wells that are used to present the water-level changes with time. This figure is color and symbol coded with the water-level elevation time plot. Figure 6.2-3 presents the water-level elevation changes versus time in Middle Chinle wells CW15, CW28, CW45 and 493. Water levels are higher in Middle Chinle well CW45 than to the north in well 493. The pumping of well CW44 in 2001 caused the water levels in wells CW28, CW45 and 493 to decline. Some of the 493 and CW15 decline could be due to the CW1 and CW2 pumping.

The water level plots for the Middle Chinle wells west of the West Fault and CW2 and WCW are presented in Figure 6.2-4. This plot shows that the water levels have generally been gradually increasing in the Middle Chinle aquifer west of the West Fault. Water levels declined in pumping well CW2 and well WCW in 2001 due to this pumping. As expected, water levels west of the West Fault in wells CW17 and CW35 did not respond to the CW1 and CW2 pumping.



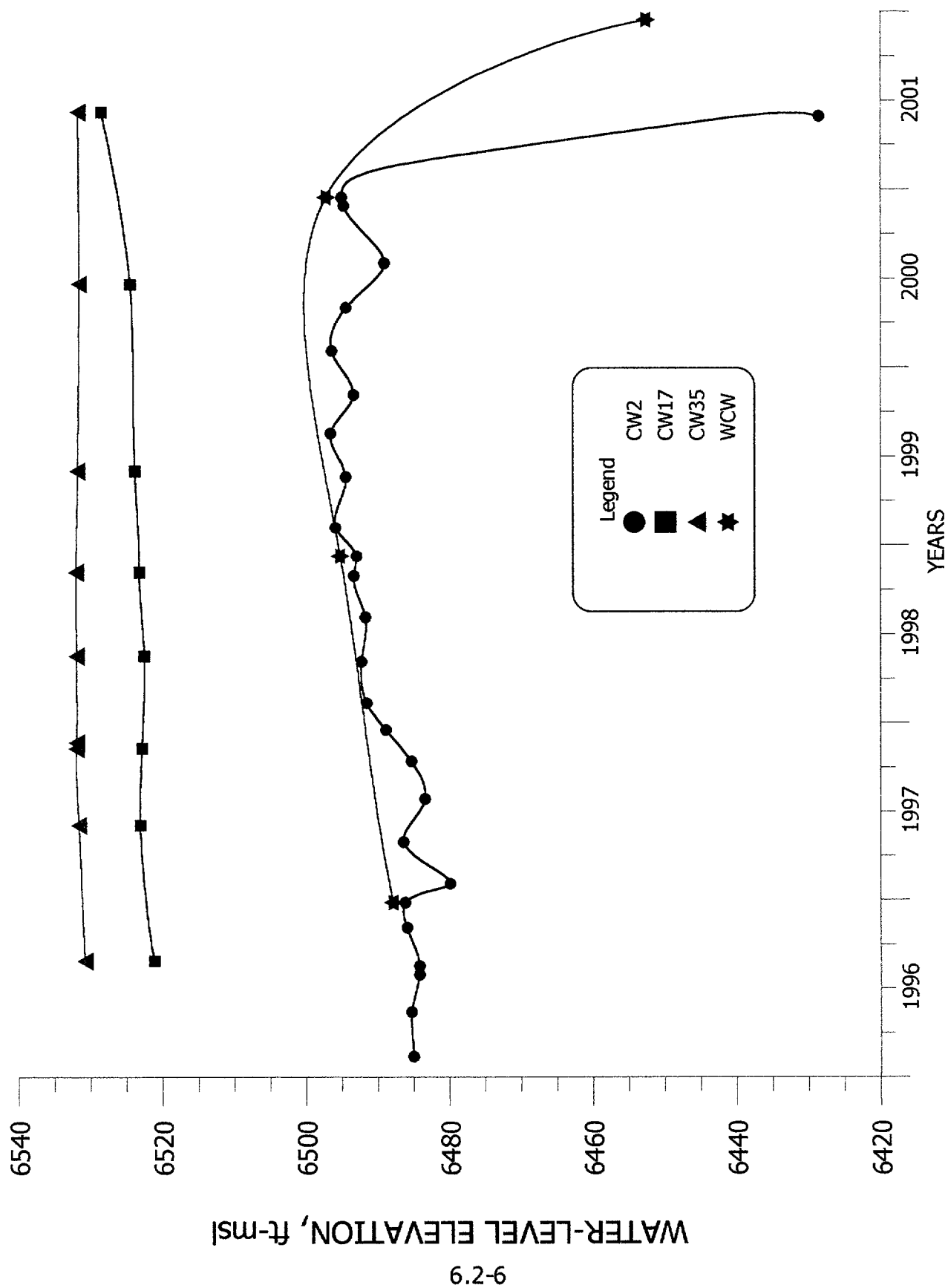






**FIGURE 6.2-3. WATER-LEVEL ELEVATION FOR WELLS CW15, CW28, CW45 AND 493.**





**FIGURE 6.2-4. WATER-LEVEL ELEVATION FOR WELLS CW2, CW17, CW35 AND WCW.**

### **6.3 MIDDLE CHINLE WATER QUALITY**

The water-quality data for the Middle Chinle aquifer is presented along with all of the other Chinle aquifer wells in Tables B.5-1 and B.5-2 of Appendix B. The Chinle aquifer water-quality results for subdivision wells are also presented in these tables. The basic well data for the Middle Chinle aquifer wells is presented in Tables 5.1-1 through 5.1-4 in the Upper Chinle aquifer monitoring section.

The area of water-quality concern in the Middle Chinle aquifer exists in the western portion of Broadview Acres and Felice Acres. All sulfate concentrations are within the range of background concentrations. Uranium concentrations are above background only in western Felice Acres and just to the west and south of Felice Acres. Selenium concentrations also exceed the background values in western Felice Acres. No significant molybdenum concentrations exist in the Middle Chinle aquifer.

#### **6.3.1 SULFATE - MIDDLE CHINLE**

Figure 6.3-1 presents the sulfate concentrations for the Middle Chinle aquifer for the Fall of 2001. This figure shows that the Middle Chinle sulfate concentrations range from 390 mg/l to a high of 1640 mg/l at well CW17. Sulfate background and site standard concentrations are given in a box in the upper left corner of Figure 6.3-1. All sulfate concentrations in the Middle Chinle aquifer are within the upper background level. Sulfate concentrations in well CW17, which is located west of the West Fault, are natural. The sulfates are naturally occurring because the ground-water flow in the Middle Chinle aquifer west of the West Fault is from the north to the southwest. All sulfate concentrations in the Middle Chinle wells are within the natural background range and, therefore, do not indicate any need for restoration based on this parameter.

Figure 6.3-2 shows the locations of the Middle Chinle wells with time concentration plots for the 2001 report. The sulfate figure number is shown in the group area to define the figure number for each group of wells. Two groups of wells for the Middle Chinle aquifer are presented. The colors and symbols on Figure 6.3-2 are the same as those used in the concentration time plots.



Figure 6.3-3 presents the sulfate concentrations for Middle Chinle wells CW15, CW28, CW44, CW45 and 493. Concentrations in Chinle well CW28 have been fairly steady but lower than the other wells. A decline in sulfate concentrations was also observed in 2001 in wells CW44 and CW45.

Figure 6.3-4 presents the sulfate concentration plot for the Middle Chinle wells CW17 and CW35 west of the West Fault and wells CW2 and 434. This plot shows that sulfate concentrations have been fairly steady in wells CW17 and CW35. These sulfate concentrations are natural because ground water flows from the north to the southwest in the Middle Chinle in this area. The sulfate concentration in Middle Chinle well CW2 was variable in 2001, similar to its historical range. Sulfate concentrations were fairly steady in well 434 in 2001.

### **6.3.2 TOTAL DISSOLVED SOLIDS - MIDDLE CHINLE**

Total dissolved solids (TDS) and sulfate are used to define changes in major constituents at this site. Figure 6.3-5 presents the TDS concentrations for the Middle Chinle aquifer for the Fall of 2001 and shows that a few values are close to 2000 mg/l near the alluvial subcrop area on the southwest side of Felice Acres.

Background data for 2001 varied from 399 to 2690 mg/l for TDS. All of the TDS values within the Middle Chinle aquifer are less than the upper limit of background of 3060 mg/l. No restoration of TDS is needed in the Middle Chinle aquifer.

### **6.3.3 URANIUM - MIDDLE CHINLE**

Uranium concentration is an important parameter in the Middle Chinle aquifer due to elevated concentrations that exist in the southern and western portions of Felice Acres from recharge to the Middle Chinle aquifer in this area. The saturated alluvial aquifer in this area flows across a subcrop of the Middle Chinle aquifer just south of Felice Acres and alluvial ground water has entered the Middle Chinle aquifer in this area. Figure 6.3-6 presents the uranium concentrations for the Fall of 2001 for the Middle Chinle aquifer. An area of concentrations of greater than 0.43 mg/l exists in the

western portion of Felice Acres. Uranium concentrations in the Middle Chinle aquifer, west of the West Fault, naturally exceed 0.1 mg/l. Flow in the Middle Chinle aquifer west of the West Fault moves from the CW35 area to the subcrop area to the south. All other areas of the Middle Chinle aquifer contain small levels of uranium.

Figure 6.3-7 presents the uranium concentration plots versus time for Middle Chinle wells CW15, CW28, CW44, CW45 and 493 (see Figure 6.3-2 for well locations). Uranium concentrations in this plot for 2001 have been less than 0.1 mg/l, except for those from well CW44 and CW45, which shows an overall decline. This plot shows that Middle Chinle wells CW44 and CW45 contain significant amounts of uranium, which should gradually decline over the next several years. Additional monitoring of these wells with time will define this decline.

The uranium concentration plots for the Middle Chinle wells west of the West Fault and two wells between the faults are presented in Figure 6.3-8. This plot shows that the uranium concentrations in wells CW17 and CW35 were fairly steady in 2001. Uranium concentrations have stayed low in well CW2. The uranium concentration from well 434 in 2001 slightly declined.

### **6.3.5 SELENIUM - MIDDLE CHINLE**

One well (CW27) in the Middle Chinle south of Felice Acres contained water with selenium concentrations exceeding 0.27 mg/l in 2001 (see Figure 6.3-9). The blue pattern is used to delineate the areas where selenium concentrations are thought to be greater than 0.27 mg/l. The selenium concentration of 0.27 mg/l is the significant concentration for this site. These concentrations are a result of recharge to the Middle Chinle aquifer from the alluvium in the subcrop area just south of Felice Acres. Flow in the Middle Chinle aquifer is toward the north causing concentrations from the subcrop area to move to the north. Background selenium concentrations for the Fall of 2001 vary from less than 0.005 to 0.59 mg/l (see note in upper left side of Figure 6.3-9). All of the Middle Chinle aquifer concentrations are within this range.

Selenium concentrations of roughly 0.1 mg/l exist west of the West Fault. These concentrations have to be natural levels in the Middle Chinle aquifer because the



flow is from the north in this area. All other concentrations in the Middle Chinle aquifer beyond these two areas are low values.

Selenium concentrations for Middle Chinle wells CW15, CW28, CW44, CW45 and 493 are presented in Figure 6.3-10 for variations with time. This plot shows that the selenium concentrations have varied significantly in well 493 but increased in 2001 after a decrease in 2000. The connection between the alluvial aquifer and the Middle Chinle aquifer south of Felice Acres is the cause for the higher concentrations in well 493. The fresh-water injection into Middle Chinle well CW14 and use of Middle Chinle well CW44 for irrigation should cause this decrease. A decline in selenium concentrations has been observed in well CW45 for the last four years while concentrations have been fairly steady in well CW44.

Selenium concentrations in well CW2, further to the north, have remained low over the last several years. Figure 6.3-11 presents the selenium concentrations for Middle Chinle wells west of the West Fault and wells CW2 and 434. This plot shows similar 2001 selenium concentrations for wells 434, CW17 and CW35 to those observed in 2000.

### **6.3.5 MOLYBDENUM - MIDDLE CHINLE**

The molybdenum concentrations in the Middle Chinle aquifer during the Fall of 2001 are presented in Figure 6.3-12. None of the molybdenum concentrations for the Fall of 2001 exceed the detection limit, except for the molybdenum concentration of 0.05 mg/l in well 493. Molybdenum concentrations for this well are generally less than detection. No significance should be given this value unless additional analysis with time show a trend is developing.

Figure 6.3-13 presents the molybdenum concentrations for Middle Chinle wells CW2, 434 and 493. This plot shows that the concentration in each of these wells has been low for 2001 values (see Figure 6.3-2 for location of these wells).

#### **6.3.6 NITRATE - MIDDLE CHINLE**

Nitrate concentrations have always been low in the Middle Chinle aquifer and therefore are not routinely monitored.

#### **6.3.7 RADIUM-226 AND RADIUM-228 - MIDDLE CHINLE**

Radium concentrations for the Middle Chinle aquifer have always been low, showing that these two parameters are not important relative to the restoration of the Middle Chinle aquifer. Radium should be removed as an NRC site standard.

#### **6.3.8 VANADIUM - MIDDLE CHINLE**

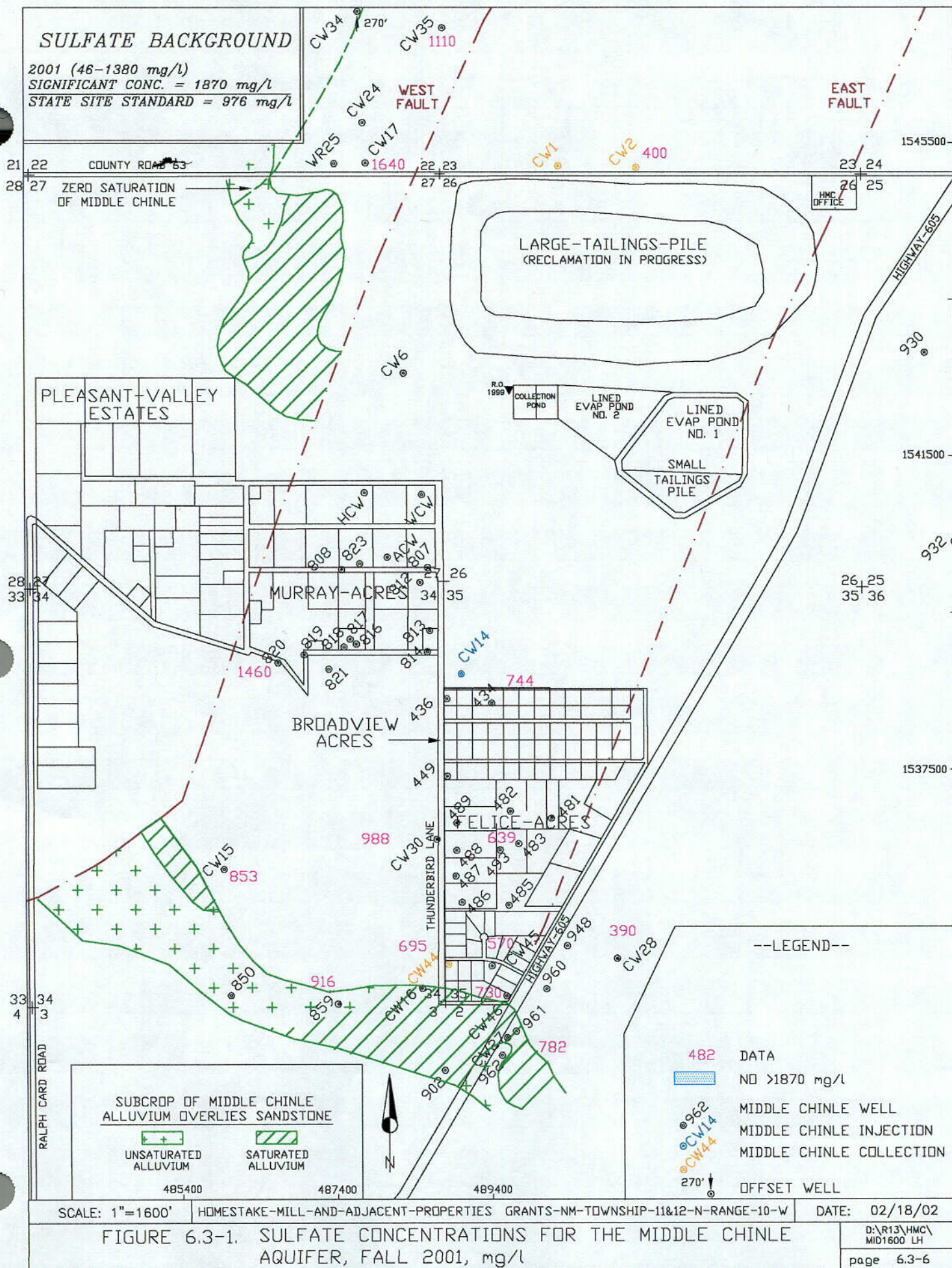
Vanadium concentrations for the Middle Chinle aquifer have always been low. Previous monitoring of vanadium in the Middle Chinle aquifer shows that vanadium is not a significant parameter for this aquifer. Monitoring of vanadium should be dropped because only a few low values previously existed in the alluvial aquifer near the tailings.

#### **6.3.9 THORIUM-230 - MIDDLE CHINLE**

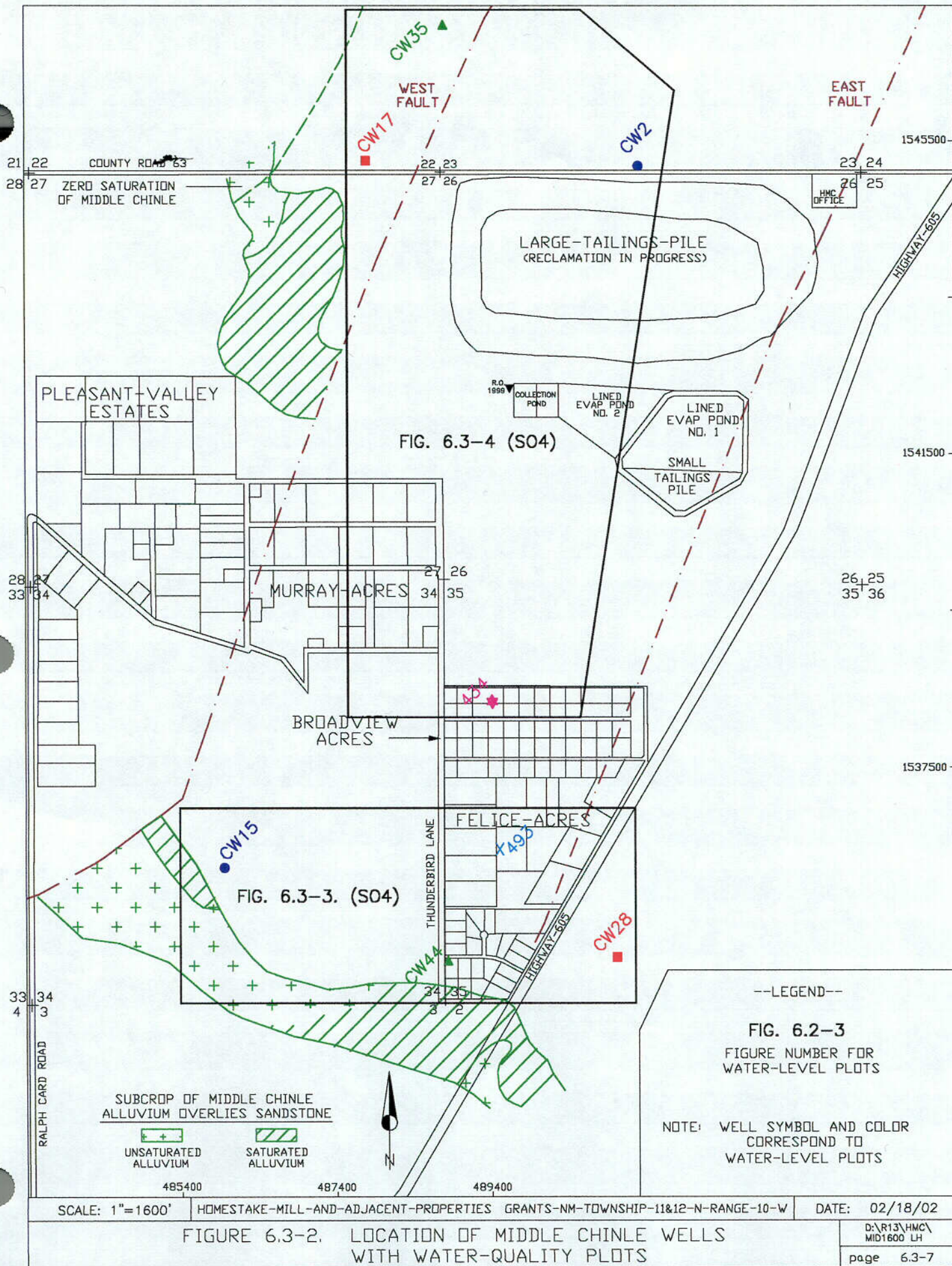
Thorium-230 concentrations are not significant in the alluvial aquifer. Therefore, the Middle Chinle aquifer does not have the potential for containing significant thorium concentrations from the tailings seepage. Thorium-230 is, therefore, not a significant parameter in the Middle Chinle aquifer and should be dropped from future monitoring in the Middle Chinle aquifer.



2001 (46-1380 mg/l)  
SIGNIFICANT CONC. = 1870 mg/l  
STATE SITE STANDARD = 976 mg/l

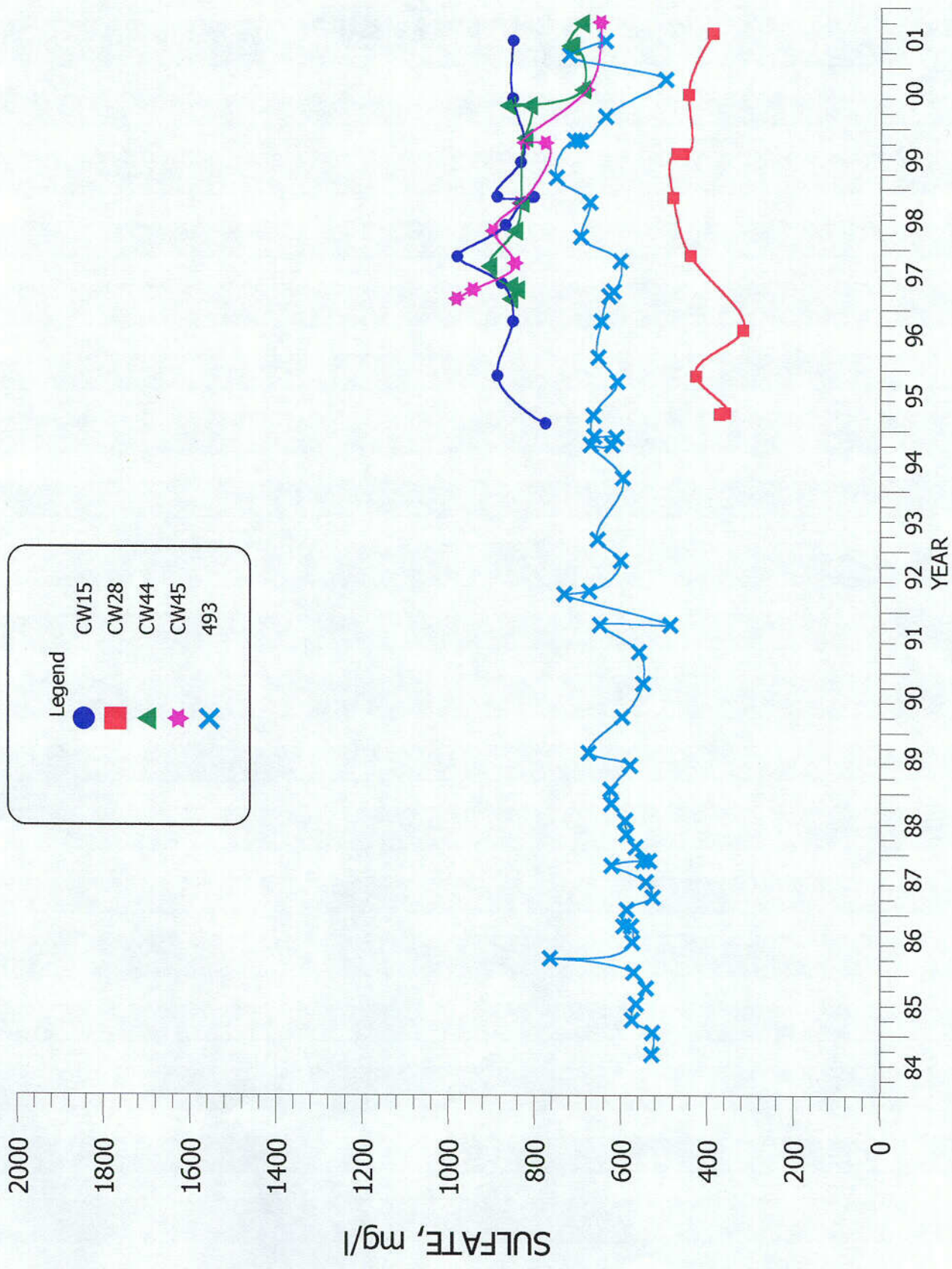






C17

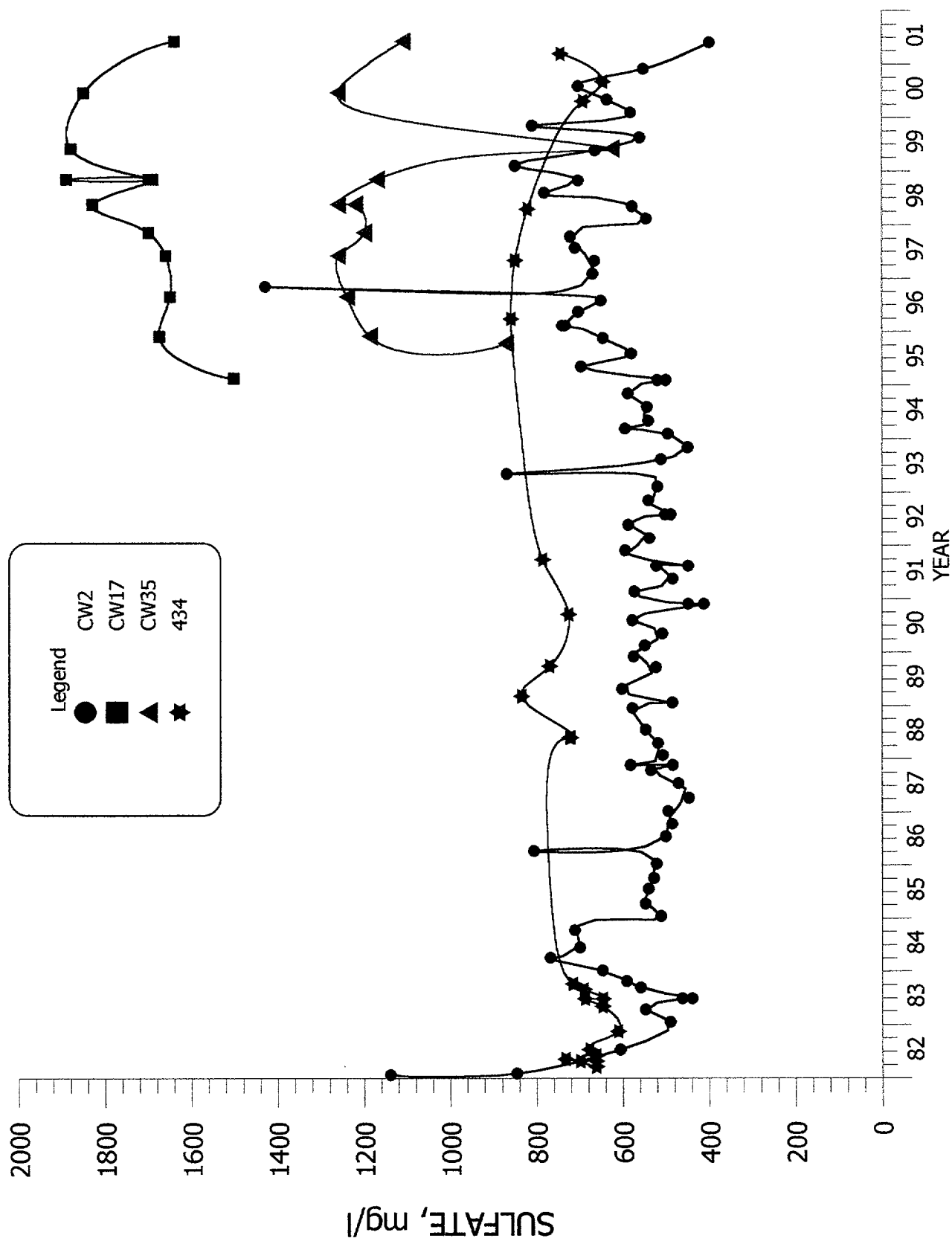




**FIGURE 6.3-3. SULFATE CONCENTRATIONS FOR WELLS CW15, CW28, CW44, CW45 AND 493.**

6.3-8

17.1

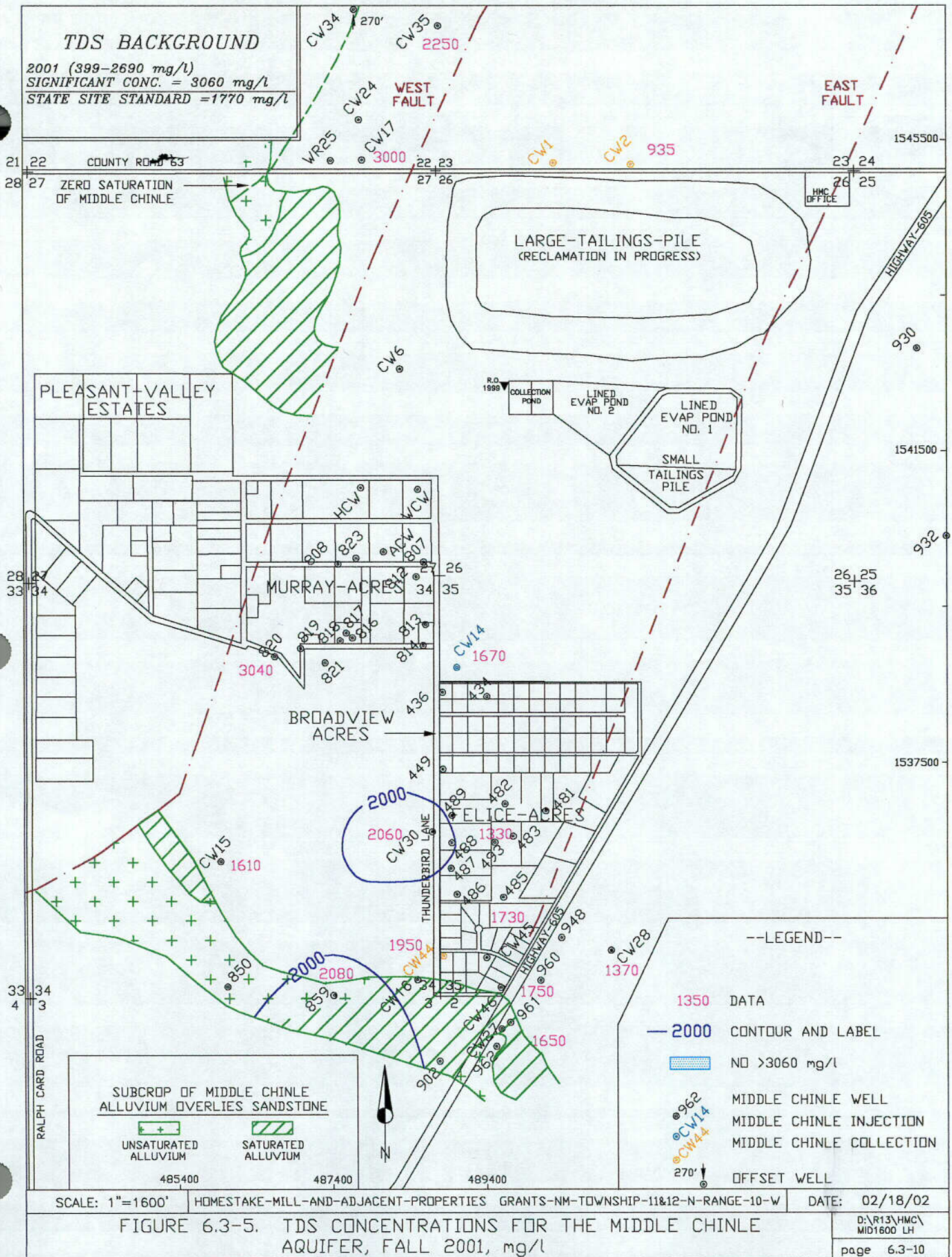


**FIGURE 6.3-4. SULFATE CONCENTRATIONS FOR WELLS CW2, CW17, CW35 AND 434.**



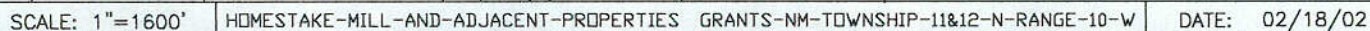
# TDS BACKGROUND

2001 (399-2690 mg/l)  
SIGNIFICANT CONC. = 3060 mg/l  
STATE SITE STANDARD = 1770 mg/l





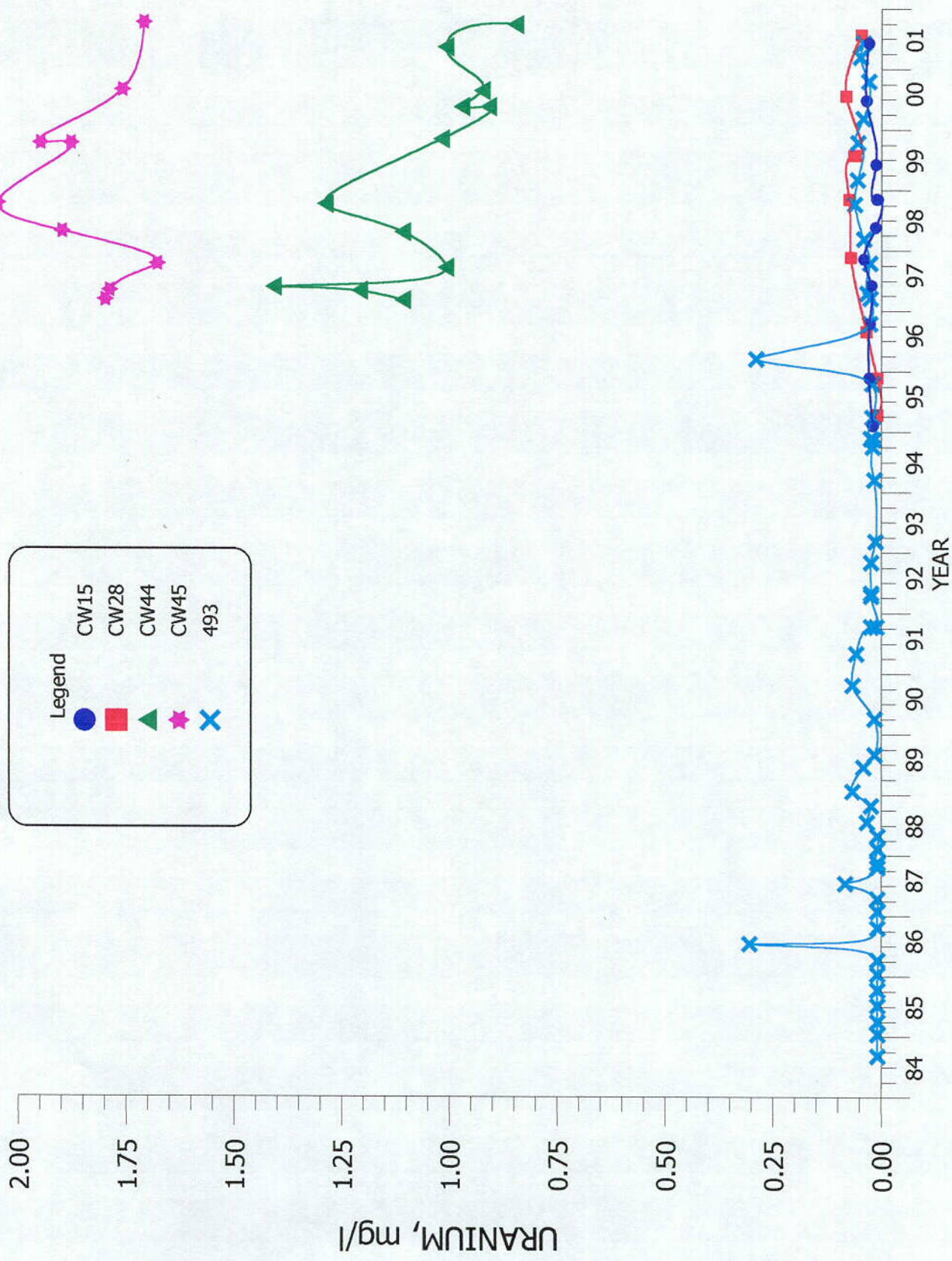
2001 (0.001-0.19 mg/l)  
SIGNIFICANT CONC. = 0.43 mg/l  
NRC SITE STANDARD = 0.04 mg/l  
STATE SITE STANDARD = 5 mg/l



D:\R13\HMC\  
MID1600 LH

page 6.3-11

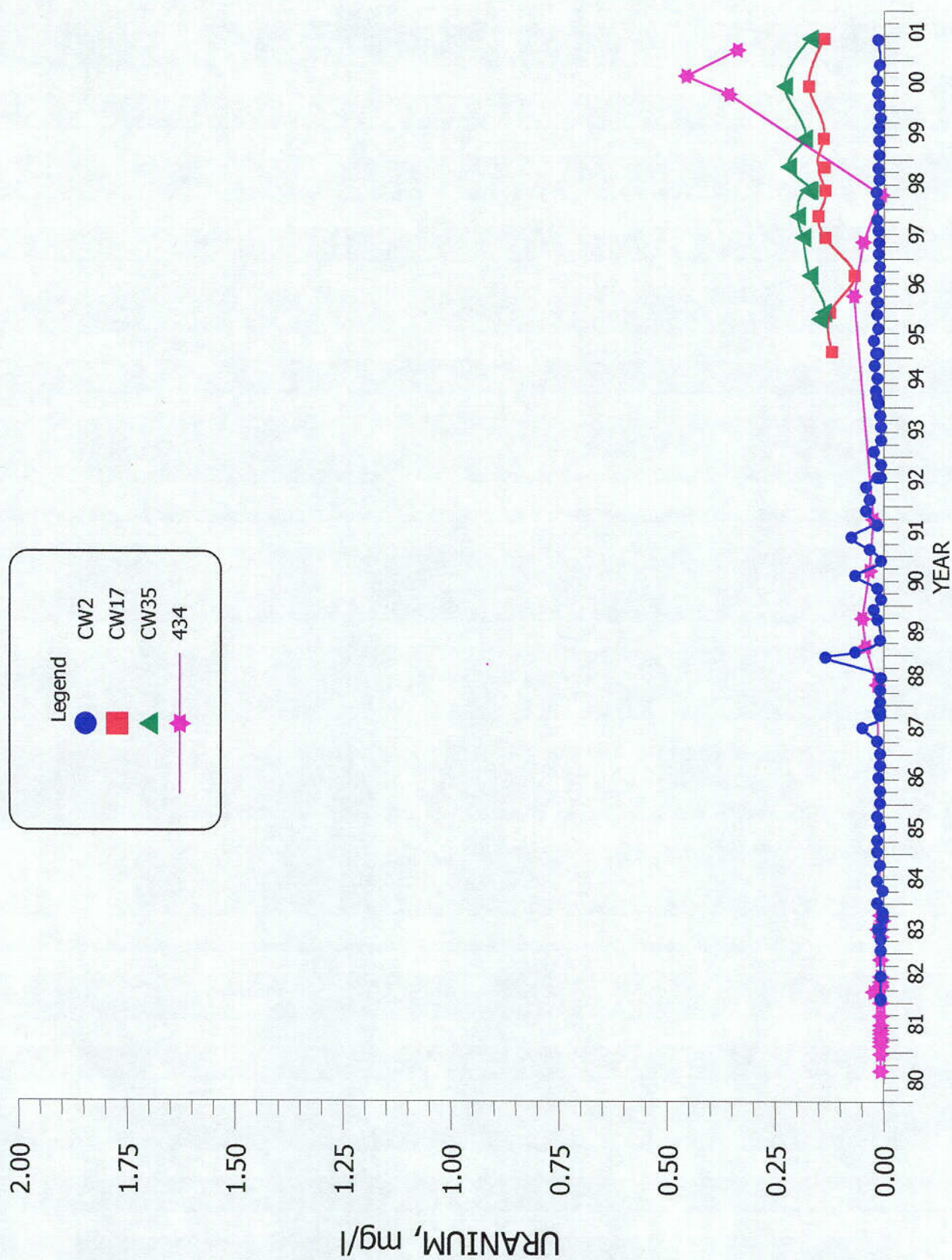




**FIGURE 6.3-7. URANIUM CONCENTRATIONS FOR WELLS CW15, CW28, CW44, CW45 AND 493.**

C19.1

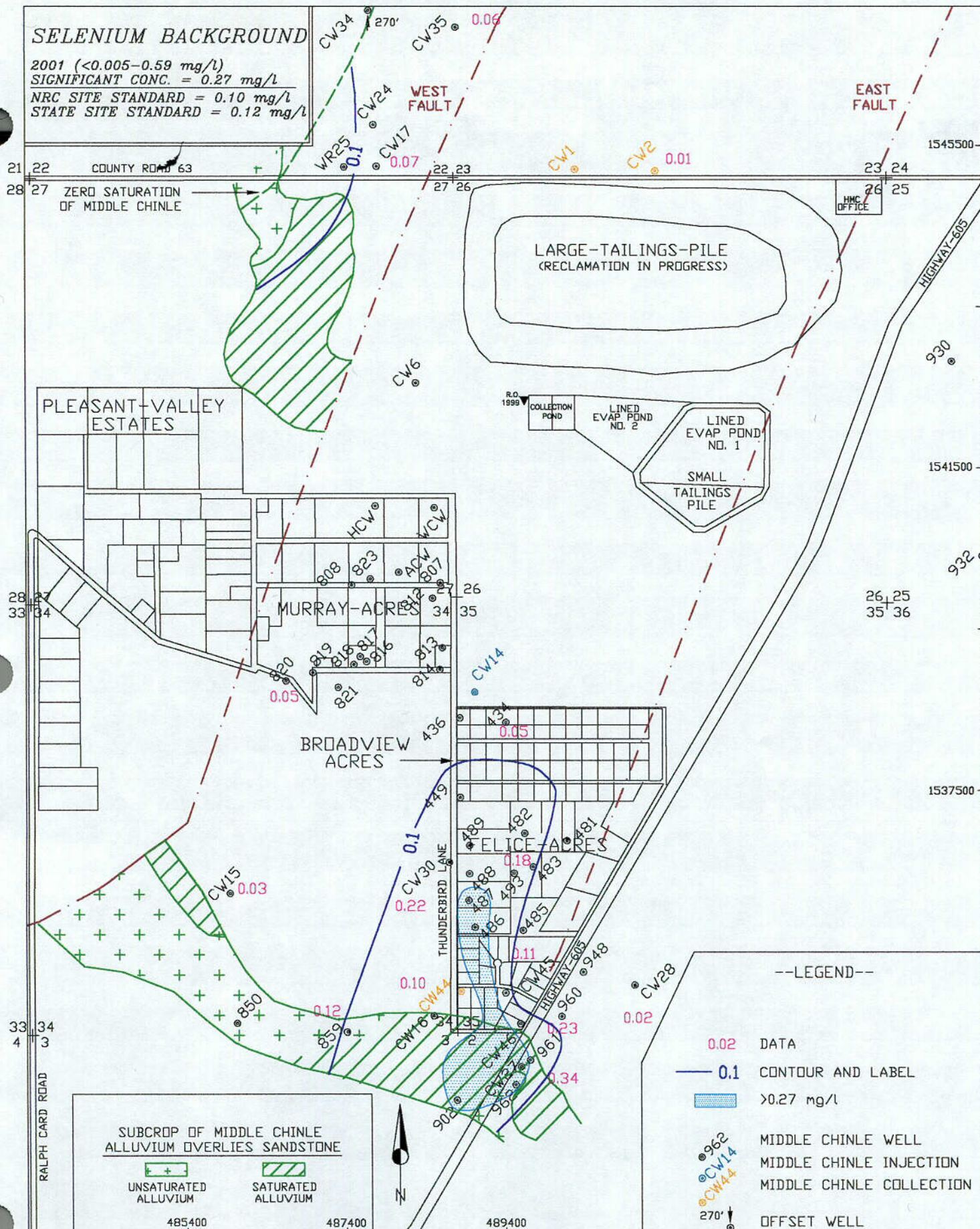




**FIGURE 6.3-8. URANIUM CONCENTRATIONS FOR WELLS CW2, CW17, CW35 AND 434.**



2001 ( $<0.005-0.59$  mg/l)  
SIGNIFICANT CONC. = 0.27 mg/l  
NRC SITE STANDARD = 0.10 mg/l  
STATE SITE STANDARD = 0.12 mg/l

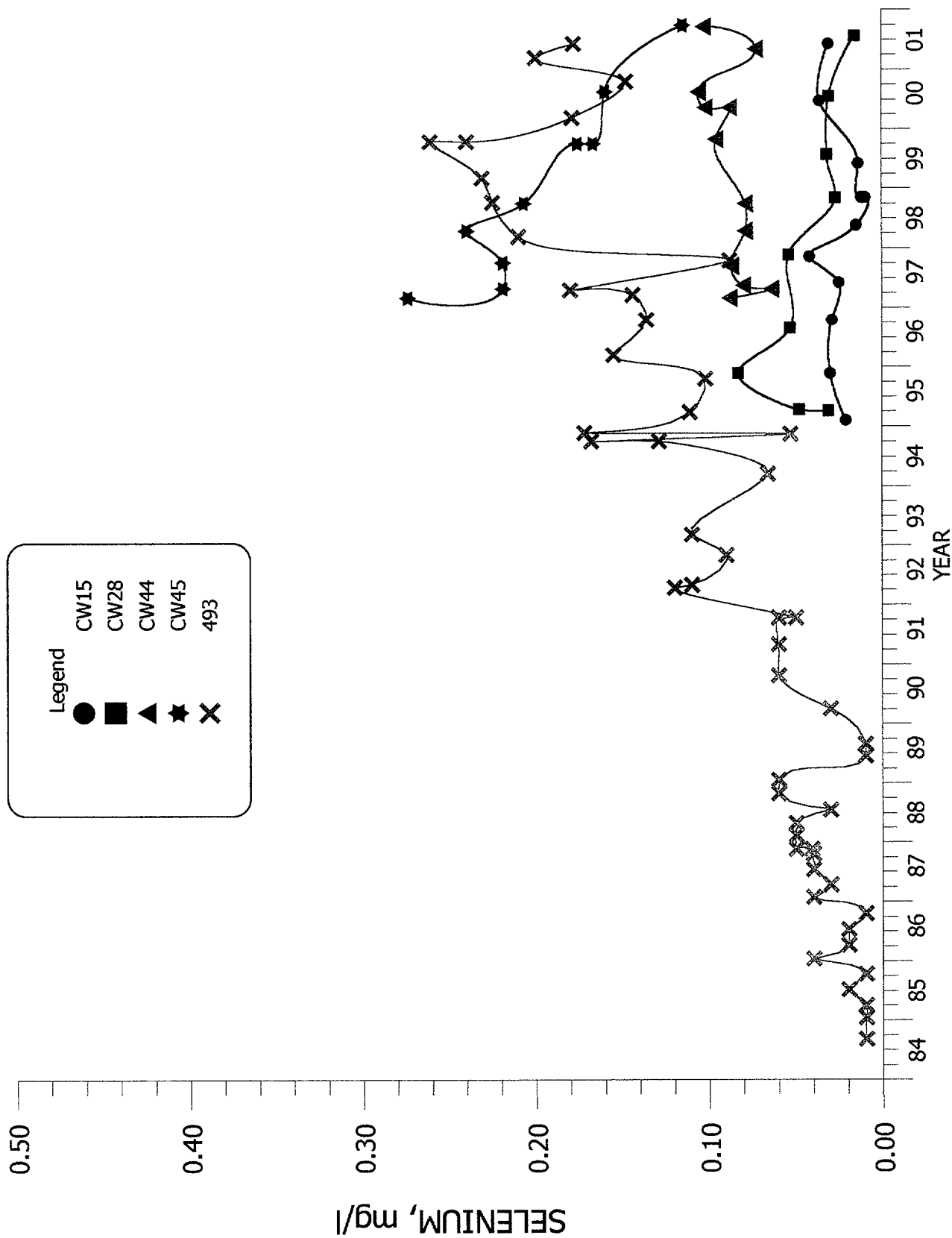


SCALE: 1"=1600'	HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W	DATE: 02/18/02
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FIGURE 6.3-9. SELENIUM CONCENTRATIONS FOR THE MIDDLE CHINLE AQUIFER, FALL 2001, mg/l

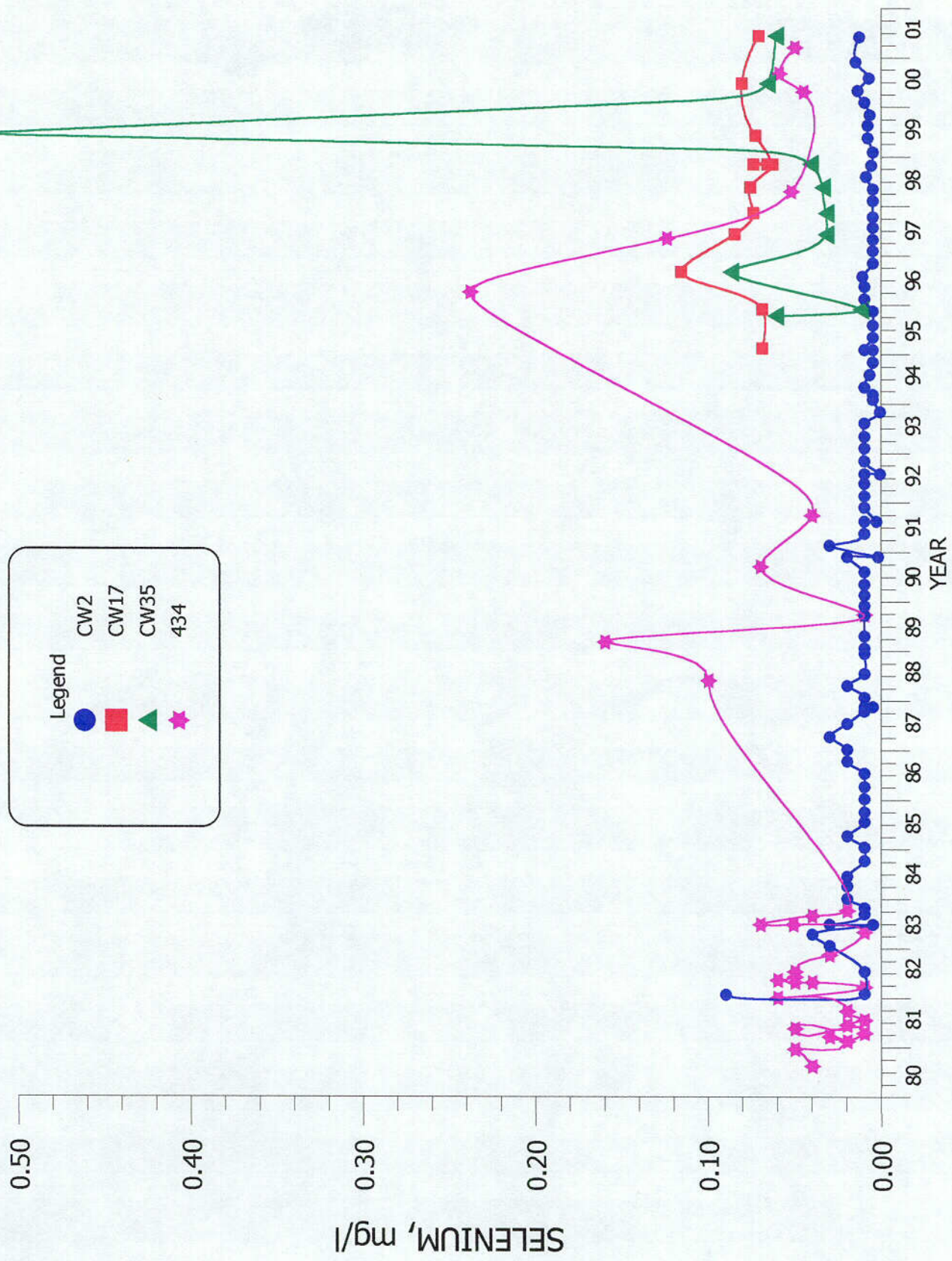
D:\R13\HMC\  
MID1600 LH  
page 6.3-14

C20



**FIGURE 6.3-10. SELENIUM CONCENTRATIONS FOR WELLS CW15, CW28, CW44, CW45 AND 493.**





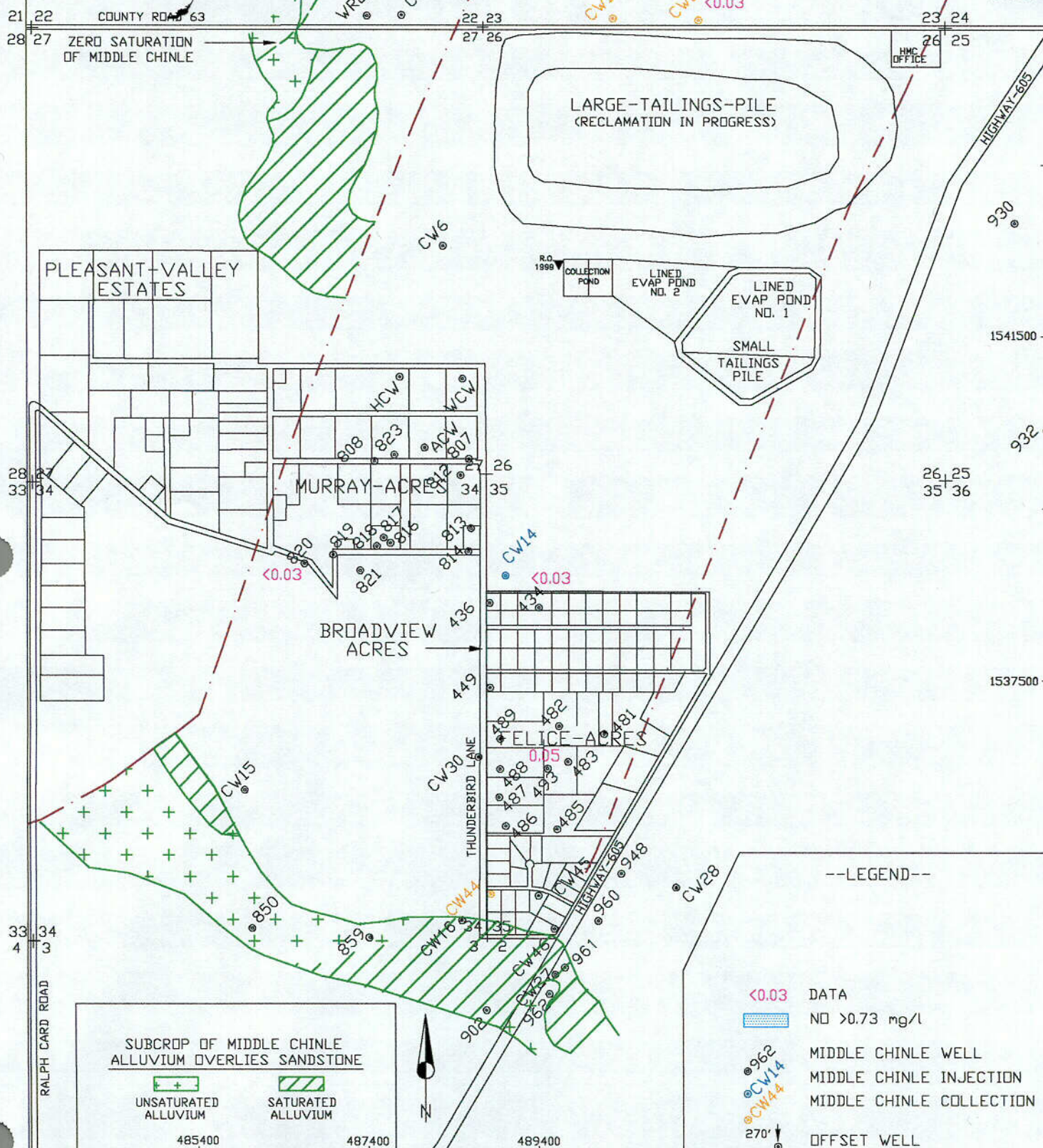
**FIGURE 6.3-11. SELENIUM CONCENTRATIONS FOR WELLS CW2, CW17, CW35 AND 434.**

C 20.1



# MOLYBDENUM BACKGROUND

2001 ( $<0.03$ – $<0.03$  mg/l)  
 SIGNIFICANT CONC. =  $0.73$  mg/l  
 NRC SITE STANDARD =  $0.03$  mg/l  
 STATE SITE STANDARD =  $1.0$  mg/l



SUBCROP OF MIDDLE CHINLE ALLUVIUM overlies SANDSTONE

UNSATURATED ALLUVIUM      SATURATED ALLUVIUM

--LEGEND--

$<0.03$  DATA

$>0.73$  mg/l

MIDDLE CHINLE WELL

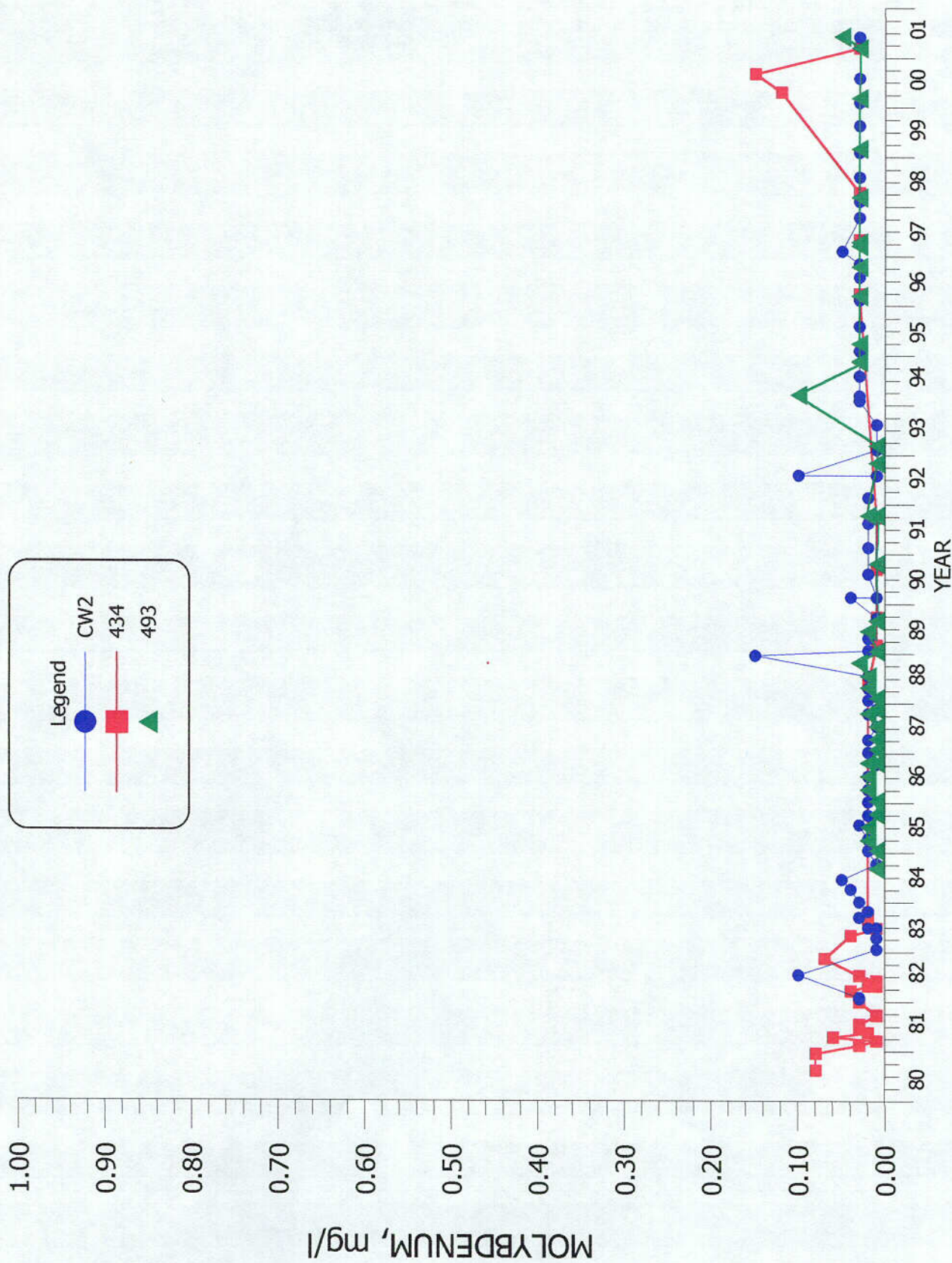
MIDDLE CHINLE INJECTION

MIDDLE CHINLE COLLECTION

OFFSET WELL

C21





**FIGURE 6.3-13. MOLYBDENUM CONCENTRATIONS FOR WELLS CW2, 434 AND 493.**

C 21.1

**SECTION 7**  
**TABLE OF CONTENTS**  
**GROUND-WATER MONITORING**  
**FOR HOMESTAKE'S GRANTS PROJECT**

	<u>Page Number</u>
<b>7.0 LOWER CHINLE AQUIFER MONITORING .....</b>	<b>7.0-1</b>
<b>FIGURES</b>	
7.0-1A LOCATION OF LOWER CHINLE WELLS AND WATER-LEVEL ELEVATION (WEST AREA), FALL 2001, FT-MSL .....	7.0-3
7.0-1B LOCATION OF LOWER CHINLE WELLS AND WATER-LEVEL ELEVATION, FALL 2001, FT-MSL.....	7.0-4
7.0-2A WATER QUALITY FOR THE LOWER CHINLE AQUIFER (WEST AREA), FALL 2001, mg/l.....	7.0-5
7.0-2B WATER QUALITY FOR THE LOWER CHINLE AQUIFER, FALL 2001, mg/l.....	7.0-6



## **7.0 LOWER CHINLE AQUIFER MONITORING**

The Lower Chinle aquifer is a permeable zone in the Chinle shale below the Middle Chinle sandstone and above the San Andres aquifer. This aquifer becomes important west and southwest of the Homestake areas where this unit exists at shallower depths. The permeable zone in the Lower Chinle aquifer can vary greatly because the transmitting ability of this aquifer depends on secondary permeability being developed. Tables 5.1-1 through 5.1-4 present the Lower Chinle basic well data along with the other Chinle aquifer wells.

Water-level elevations for the Lower Chinle wells are presented with the remainder of the Chinle wells in Appendix A. Figures 7.0-1A and 7.0-1B present the location of the Lower Chinle wells and the Fall of 2001 water-level elevations. The West and East Faults are shown on Figures 7.0-1A and 7.0-1B. Flow west of the West Fault in the Lower Chinle is mainly to the northeast. Flow between the two faults is to the northwest, indicating that the Lower Chinle water moves across the West Fault. The approximate subcrop areas for the Lower Chinle aquifer are also shown on these two figures. Lower Chinle water levels in 2001 were generally three feet lower in Section 3 due to the irrigation supply pumped from this area.

The Lower Chinle water quality is presented on Figures 7.0-2A and 7.0-2B. These figures present the sulfate, uranium, selenium and TDS concentrations for each of the wells during the Fall of 2001. All molybdenum concentrations in all Lower Chinle wells are less than 0.03 mg/l. The sulfate concentrations are shown in the upper left quadrant by each well in blue. Sulfate concentrations varied from a low of 450 mg/l to a high of 2080 mg/l. A similar range in sulfate concentrations existed in the upgradient water quality in the alluvial aquifer. TDS concentrations varied from 1050 to 4180 mg/l. The TDS concentrations in the Lower Chinle increase substantially downgradient of the subcrop area west of the West Fault. These higher TDS concentrations are thought to be natural and a function of long travel times of the ground water in this shale.

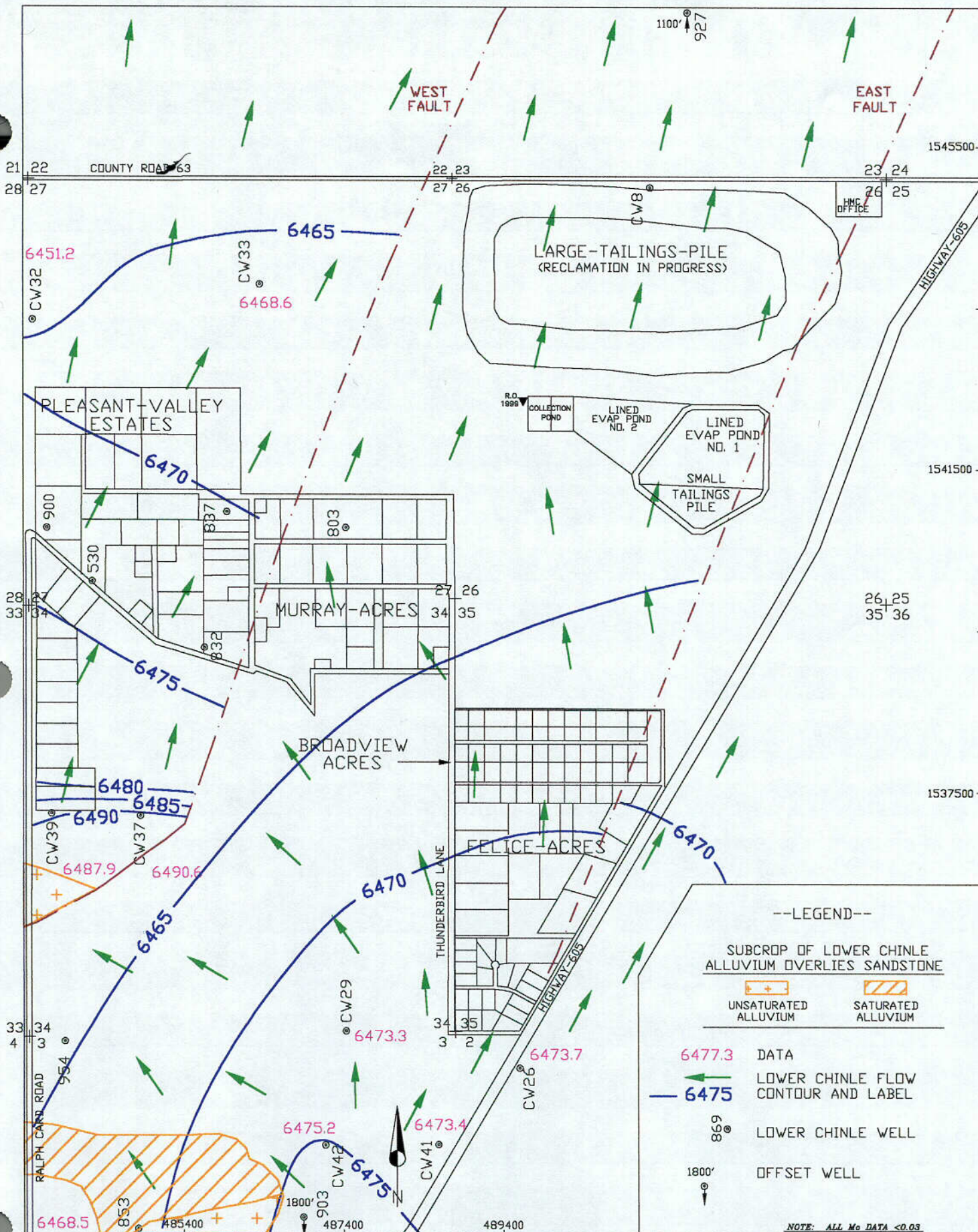
Uranium concentrations are generally low in all of the Lower Chinle wells. A small area around Lower Chinle well CW42, which is located in Section 3, contained an elevated uranium concentration in the Fall of 2001. This concentration is due to the

connection with the alluvial aquifer to the west of this well in the subcrop area and should be reduced as the alluvial aquifer concentrations are reduced in this area from the use of water in the irrigation. Uranium concentrations in well CW42 declined from 1.27 to 1.18 mg/l during the last year. Selenium concentrations in most of the Lower Chinle wells are also low. All selenium concentrations in the Lower Chinle wells are below the upper limit of background.









C23











**SECTION 8**  
**TABLE OF CONTENTS**  
**GROUND-WATER MONITORING**  
**FOR HOMESTAKE'S GRANTS PROJECT**

	<u>Page Number</u>
<b>8.0</b>	<b>SAN ANDRES AQUIFER MONITORING ..... 8.0-1</b>

**FIGURES**

8.0-1A	LOCATION OF SAN ANDRES WELLS AND WATER-LEVEL ELEVATION FOR THE SAN ANDRES AQUIFER (WEST AREA), FALL 2001, mg/l ..... 8.0-3
8.0-1B	LOCATION OF SAN ANDRES WELLS AND WATER-LEVEL ELEVATION FOR THE SAN ANDRES AQUIFER, FALL 2001, mg/l..... 8.0-4
8.0-2	WATER QUALITY FOR THE SAN ANDRES AQUIFER, FALL 2001, mg/l..... 8.0-5
8.0-3	SULFATE CONCENTRATIONS FOR WELLS DEEP NO. 1 AND DEEP NO. 2..... 8.0-6

**TABLES**

8.0-1	BASIC WELL DATA FOR THE SAN ANDRES WELLS..... 8.0-7
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## **8.0 SAN ANDRES AQUIFER MONITORING**

The San Andres aquifer is the most important regional aquifer in this area. The Chinle formation, which exists between the alluvium and the San Andres, is approximately 800 feet thick at the Homestake tailings site and consists of mainly shale with a few sandstone lenses. Therefore, the alluvial aquifer and the San Andres aquifer have a very thick aquitard separating them. The difference between the piezometric heads between the alluvial and San Andres aquifers is in the range of 70 to 80 feet, which indicates that the flow is highly retarded between these two systems. The San Andres and alluvial aquifers are only in direct connection in the western portion of the west area (see pattern on Figure 8.0-1A ). Therefore, the San Andres aquifer is not as important to the evaluation of ground-water conditions at this site as the other aquifers. The San Andres aquifer has been used as the source for fresh-water injection into the alluvium and Chinle aquifers at the Grants Project, which has resulted in the San Andres monitoring program.

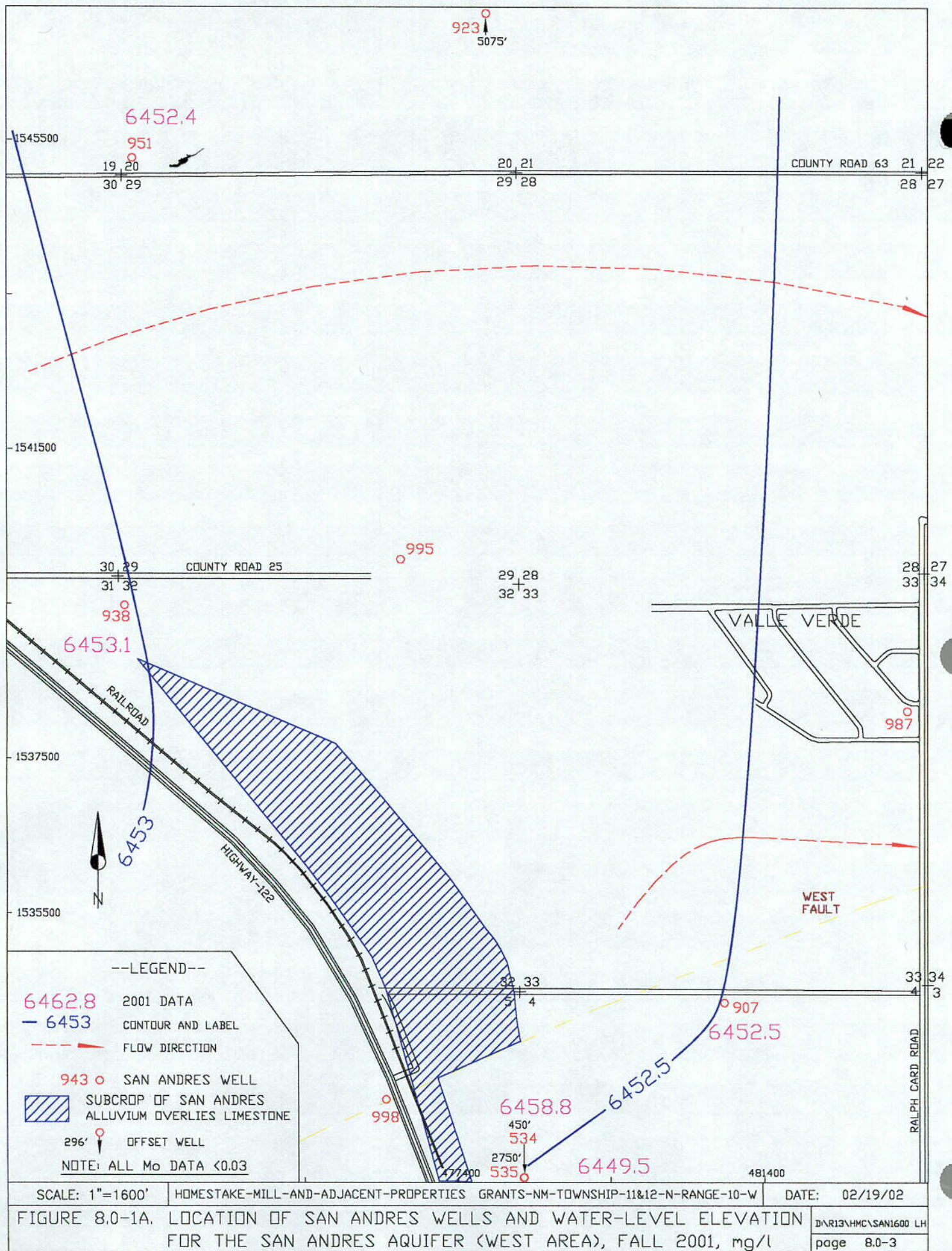
Table 8.0-1 presents well completion information for the San Andres wells in this area. Homestake has two deep wells, #1 Deep and #2 Deep, which are used to supply the fresh-water injection systems. San Andres well 951 is the fresh-water injection supply that will be used for the Sections 28 and 29 injection system. Figures 8.0-1A and 8.0-1B show the locations of the San Andres wells in this area. Recharge to the San Andres aquifer is mainly west of Figure 8.0-1A and flow in the San Andres is deeper below the land surface as it moves to the east. The water-level elevations for 2001 (Figures 8.0-1A and 8.0-1B) show a very flat piezometric surface with a gradient from the west-northwest to the east-southeast. The gradient in the area indicates that the faults do not significantly affect the ground-water flow in the San Andres aquifer. The faults' displacements are not large enough to completely displace the entire thickness of this aquifer system.

Figure 8.0-2 also present the most recent water-quality data for the San Andres aquifer. Tables B.6-1 and B.6-2 in Appendix B present the tabulation of the 2001 water-quality data for the San Andres aquifer. This figure shows the 2001 data for the San Andres aquifer in a manner similar to the data presented on the Lower

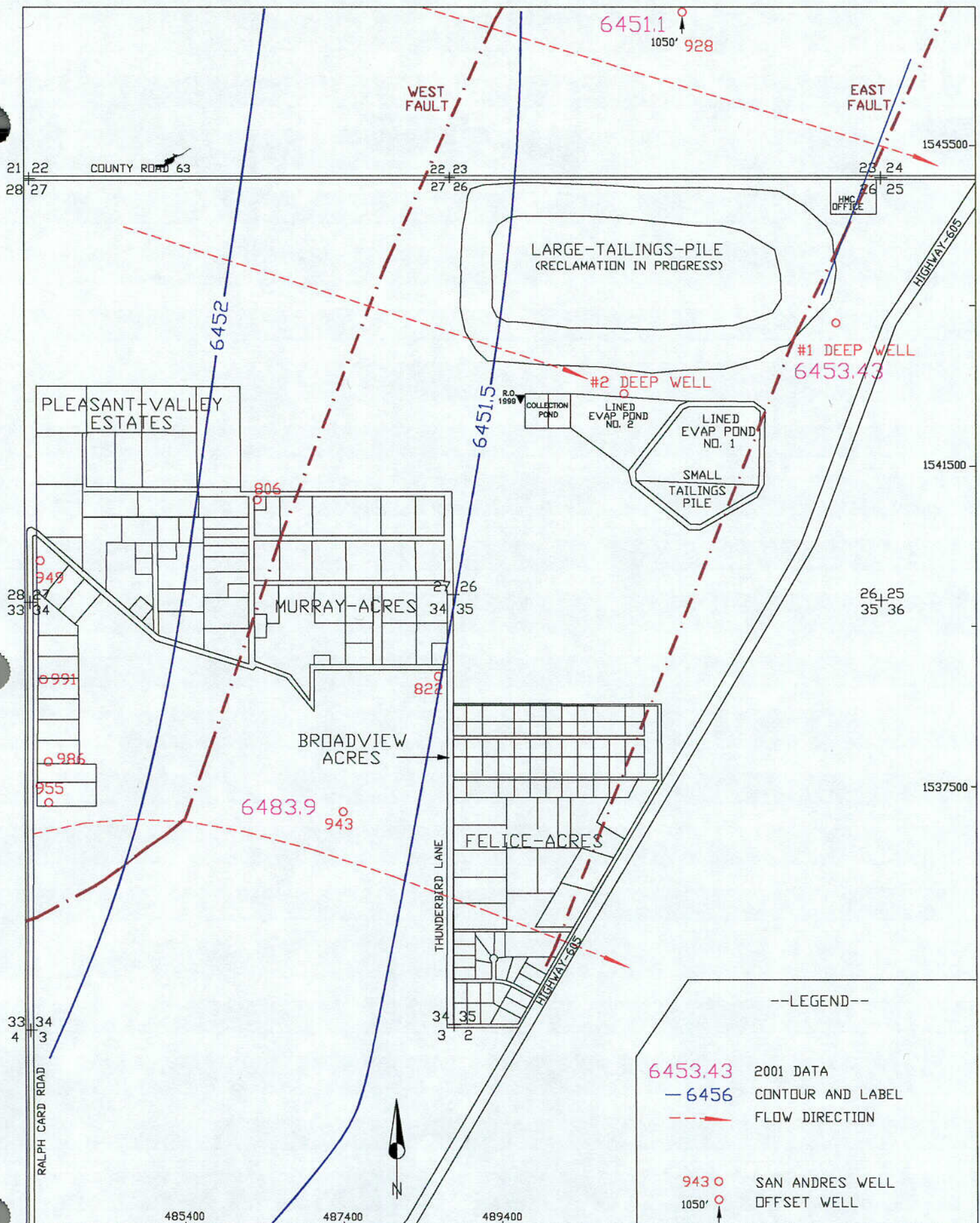


Chinle aquifer figures. The sulfate concentrations are presented in the upper left quadrant, while the TDS data is presented in the lower right quadrant. This shows that the sulfate concentrations vary from 523 mg/l to 1000 mg/l in the San Andres aquifer. Sulfate concentrations are typically near 700 mg/l for the two Homestake wells. TDS concentrations have varied from 1550 to 2040 mg/l and generally show an increase in a downgradient direction. The higher concentrations of sulfate and TDS to the east are natural and typical of a limestone aquifer due to dissolving of the rock as the water is in contact with the formation longer. This increase from the recharge area to down dip is expected. Uranium concentrations for all of the San Andres wells monitored in 2001 are low with the highest value being 0.09 at well 928. Well 928 typically contains slightly higher uranium concentrations. Selenium concentrations in the San Andres vary from less than 0.005 to 0.04 mg/l with the high also being from well 928. All molybdenum concentrations are less than 0.03 mg/l.

Figure 8.0-3 presents sulfate concentrations with time for Homestake's two deep wells at this site. This data shows that sulfate concentrations in 2001 in the two Homestake deep wells declined. Additional monitoring with time is needed before any significance is given this decline.







SCALE: 1"=1600'

HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W

DATE: 02/19/02

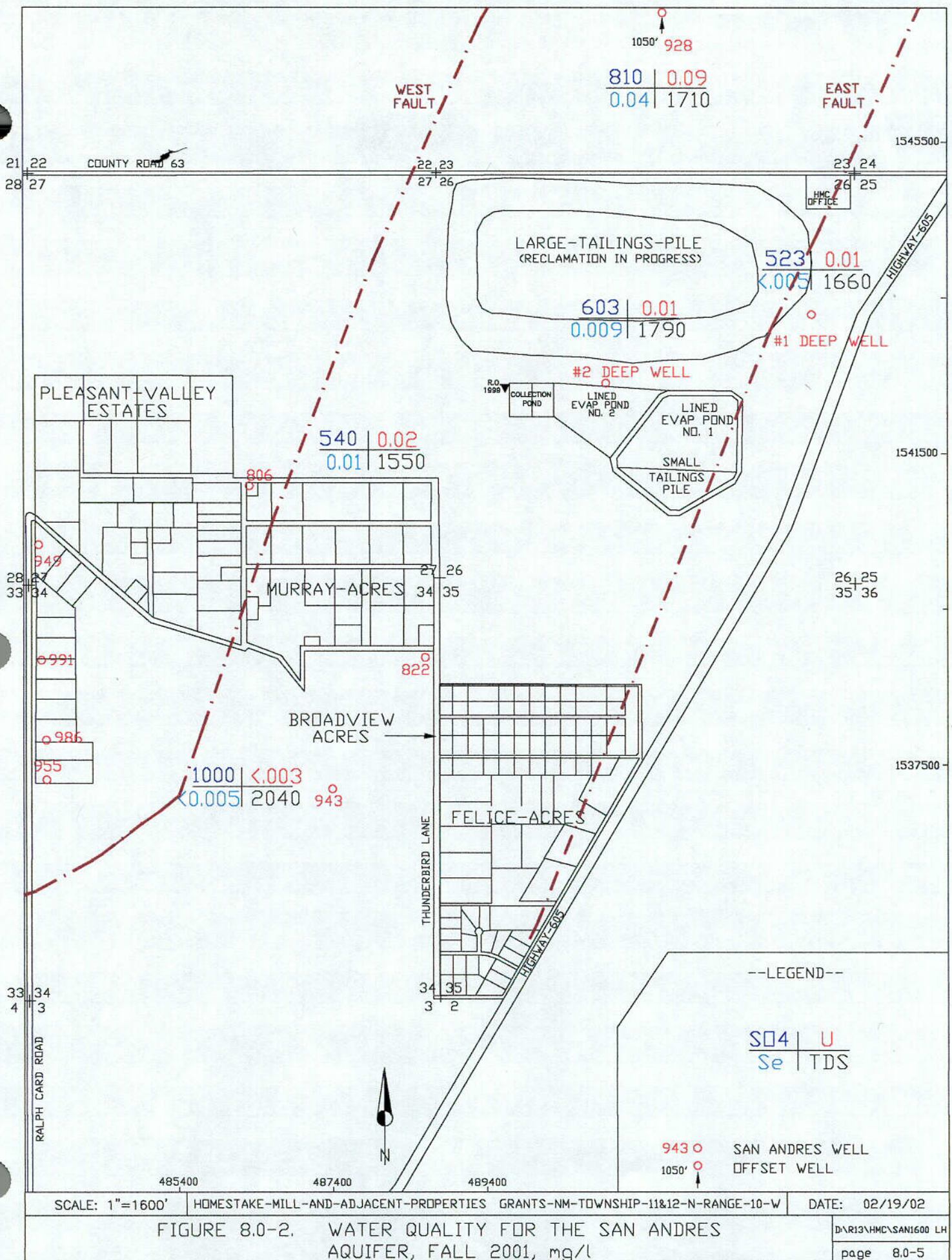
FIGURE 8.0-1B. LOCATION OF SAN ANDRES WELLS AND WATER-LEVEL ELEVATION FOR THE SAN ANDRES AQUIFER, FALL 2001, mg/l

D:\R13\HMC\SAN1600 LH

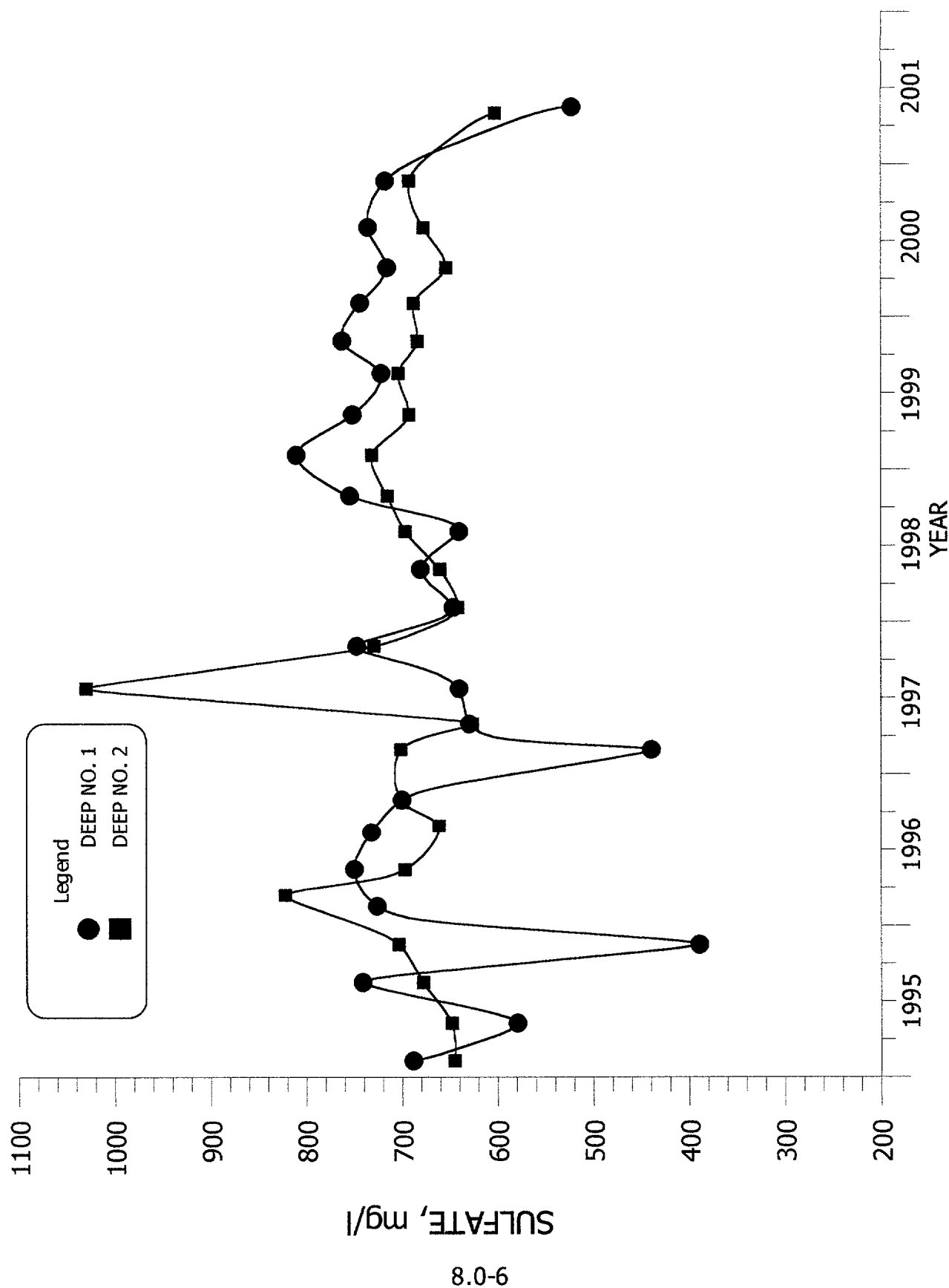
page 8.0-4

C27









**FIGURE 8.0-3. SULFATE CONCENTRATIONS FOR WELLS  
DEEP NO. 1 AND DEEP NO. 2.**

**TABLE 8.0-1 BASIC WELL DATA FOR THE SAN ANDRES WELLS**

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL		MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO TOP OF SAN ANDRES (FT-LSD)	ELEV. TO TOP OF SAN ANDRES (FT-MSL)	CASING PERFORATIONS (FT-LSD)	
					DATE	DEPTH (FT-MP) ELEV. (FT-MSL)						
#1 Deep	1543307	493633	1000.0	10.0	2/15/96	80	6503.76	0.0	6583.76	130	6454	A ---
										303	6281	U ---
										433	6151	M ---
										597	5987	L ---
										955	5629	S 919-999
#2 Deep	1542424	490972	870.0	---	5/2/01	177.860	6397.80	0.0	6575.66	110	6466	A ---
										800	5776	S -
0806	1541120	486320	584.0	16.0	---	---	---	0.0	6567.00	90	6477	A ---
										520	6047	S -
0822	1538920	488630	980.0	7.0	--	--	--	0.0	6557.00	790	5767	S 790-875
0534	1534589	476549	1000.0	16.0	12/11/01	93.7900	6458.78	0.0	6552.57	0	6553	S -
0535	1530100	478450	198.0	12.0	12/11/01	90.4899	6449.51	0.0	6540.00	---	---	S -
0907	1534250	480800	360.0	16.0	12/11/01	93.0800	6452.52	0.0	6545.60	123	6423	A ---
										262	6284	S 295-360
0911	1534350	476800	188.0	---	---	---	---	0.0	6552.60	---	---	S -
0918	---	---	725.0	4.0	---	---	---	0.0	6702.40	620	6082	S 635-655
0919	---	---	628.0	5.0	---	---	---	0.0	6684.00	35	6649	A ---
										356	6328	S 364-571
0923	1552400	487900	330.0	5.0	4/6/94	6464.97	157.63	0.0	6622.60	60	6563	A ---
										229	6394	S 234-330
0928	1548250	491700	864.0	---	12/11/01	146.539	6451.06	1.2	6597.60	138	6458	A ---
										801	5795	S -
0938	1539500	473040	---	---	12/11/01	115.739	6453.06	0.0	6568.80	95	6474	A ---
										120	6449	S -
0943	1537222	487407	978.0	18.0	12/11/01	72	6483.91	0.0	6555.91	704	5852	S 703-978
0949	1540350	483600	551.0	---	---	---	---	0.0	6562.30	112	6450	A ---
										155	6407	L ---
										460	6102	S 400-493
										460	6102	S 505-551
0951	1545500	473200	275.0	10.0	12/11/01	121.319	6452.38	0.9	6573.70	110	6463	A ---
										227	6346	S 241-275
0955	1537300	483700	498.0	5.0	11/3/95	78.0500	6471.95	0.2	6550.00	40	6510	A ---
										420	6130	S 385-498
0986	1537860	483750	467.0	5.0	11/2/95	80.75	6569.25	0.8	6650.00	65	6584	A ---
										85	6564	L ---
										415	6234	S 420-467
0987	1538120	483270	500.0	5.0	11/3/95	54.4799	6595.52	1.0	6650.00	70	6579	A ---
										385	6264	S 425-470
0991	1538880	483630	500.0	---	11/8/95	84.4100	6566.59	1.4	6651.00	---	---	S -
0995	1540115	476594	---	---	---	---	---	0.0	6474.00	---	---	S -



**TABLE 8.0-1 BASIC WELL DATA FOR THE SAN ANDRES WELLS**  
(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL		MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO TOP OF SAN ANDRES (FT-LSD)	ELEV. TO TOP OF SAN ANDRES (FT-MSL)	CASING PERFOR- ATIONS (FT-LSD)
					DATE	DEPTH (FT-MP)					
0998	1533080	476450	145.0	16.0	---	---	---	0.0	6650.00	---	S -

NOTE: A = Base of Alluvium  
L = Lower Chinle  
S = San Andres Aquifer  
r = Reported  
\* = Abandoned

**SECTION 9**  
**TABLE OF CONTENTS**  
**GROUND-WATER MONITORING**  
**FOR HOMESTAKE'S GRANTS PROJECT**

	<u>Page Number</u>
<b>9.0 REFERENCES.....</b>	<b>9.0-1</b>



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**APPENDIX A**  
**WATER LEVELS**

**TABLE OF CONTENTS**  
**GROUND-WATER MONITORING**  
**FOR HOMESTAKE'S GRANTS PROJECT**

**APPENDIX A**

	<u><b>Page Number</b></u>
A.1-1	WATER LEVELS FOR HOMESTAKE'S ALLUVIAL WELLS ..... A.1-1
A.1-2	WATER LEVELS FOR THE SUBDIVISION ALLUVIAL WELLS ..... A.1-6
A.1-3	WATER LEVELS FOR REGIONAL ALLUVIAL WELLS ..... A.1-7
A.2-1	WATER LEVELS FOR THE CHINLE AQUIFERS ..... A.2-1
A.3-1	WATER LEVELS FOR THE SAN ANDRES AQUIFER ..... A.3-1



**Table A.1-1 WATER LEVELS FOR HOMESTAKE'S ALLUVIAL WELLS**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>1A</b>			3/19/2001	42.56	6528.34	<b>BA</b>			12/10/2001	43.33	6528.25
10/30/2001	39.08	6546.35	3/26/2001	41.94	6528.96	1/2/2001	44.11	6527.47	12/17/2001	43.65	6527.93
<b>1B</b>			4/2/2001	41.87	6529.03	1/8/2001	43.82	6527.76	12/26/2001	43.75	6527.83
10/30/2001	38.70	6545.72	4/10/2001	41.75	6529.15	1/15/2001	43.81	6527.77	<b>BC</b>		
<b>1E</b>			4/16/2001	42.02	6528.88	1/22/2001	43.99	6527.59	6/4/2001	47.68	6526.93
9/24/2001	2.00	6582.31	4/23/2001	42.05	6528.85	1/29/2001	43.84	6527.74	<b>BP</b>		
<b>1F</b>			4/30/2001	41.88	6529.02	2/5/2001	43.82	6527.76	7/23/2001	45.45	6526.85
9/24/2001	44.63	6542.75	5/7/2001	41.92	6528.98	2/12/2001	43.82	6527.76	<b>C5</b>		
<b>1G</b>			5/14/2001	41.73	6529.17	2/21/2001	43.83	6527.75	10/17/2001	36.20	6533.65
9/24/2001	42.71	6544.36	5/21/2001	41.78	6529.12	2/26/2001	44.05	6527.53	<b>C13</b>		
<b>1H</b>			5/29/2001	41.66	6529.24	3/5/2001	44.11	6527.47	10/29/2001	37.58	6532.43
9/24/2001	31.16	6555.23	5/30/2001	41.73	6529.17	3/12/2001	43.98	6527.60	<b>C14</b>		
<b>1J</b>			6/4/2001	41.61	6529.29	3/19/2001	44.08	6527.50	10/29/2001	37.32	6532.37
9/24/2001	33.04	6552.36	6/11/2001	41.77	6529.13	3/26/2001	43.80	6527.78	<b>D1</b>		
<b>1K</b>			6/18/2001	42.07	6528.83	4/2/2001	43.81	6527.77	5/30/2001	46.05	6524.85
9/24/2001	29.86	6554.27	6/25/2001	41.98	6528.92	4/10/2001	43.45	6528.13	<b>DC</b>		
<b>1L</b>			7/2/2001	42.06	6528.84	4/16/2001	43.74	6527.84	6/4/2001	44.08	6527.23
9/24/2001	29.31	6549.30	7/9/2001	42.02	6528.88	4/23/2001	43.88	6527.70	<b>DQ</b>		
<b>1M</b>			7/16/2001	42.04	6528.86	4/30/2001	43.58	6528.00	1/4/2001	50.65	6525.78
9/24/2001	23.48	6552.05	7/23/2001	42.01	6528.89	5/7/2001	43.64	6527.94	7/23/2001	47.94	6528.49
<b>B</b>			7/30/2001	42.23	6528.67	5/14/2001	43.43	6528.15	<b>F</b>		
1/2/2001	42.22	6528.68	8/7/2001	42.37	6528.53	5/21/2001	43.47	6528.11	7/23/2001	31.80	6533.02
1/8/2001	41.99	6528.91	8/14/2001	42.33	6528.57	5/29/2001	43.41	6528.17	<b>FB</b>		
1/15/2001	42.02	6528.88	8/21/2001	42.07	6528.83	6/4/2001	43.38	6528.20	1/4/2001	34.31	6531.35
1/22/2001	42.14	6528.76	8/27/2001	42.21	6528.69	6/11/2001	43.59	6527.99	10/9/2001	35.10	6530.56
1/29/2001	42.04	6528.86	9/4/2001	42.27	6528.63	6/18/2001	43.78	6527.80	<b>GH</b>		
2/5/2001	42.13	6528.77	9/10/2001	42.18	6528.72	6/25/2001	43.66	6527.92	3/12/2001	32.22	6530.54
2/12/2001	42.17	6528.73	9/17/2001	42.11	6528.79	7/2/2001	43.67	6527.91			
2/21/2001	42.10	6528.80	9/24/2001	42.21	6528.69	7/9/2001	43.76	6527.82			
2/26/2001	42.12	6528.78	10/1/2001	42.07	6528.83	7/16/2001	43.75	6527.83			
3/5/2001	42.20	6528.70	10/8/2001	41.93	6528.97	7/23/2001	43.69	6527.89			
3/12/2001	42.09	6528.81	10/15/2001	42.11	6528.79	7/30/2001	43.90	6527.68			
			10/22/2001	41.96	6528.94	8/7/2001	44.20	6527.38			
			10/29/2001	41.98	6528.92	8/14/2001	43.96	6527.62			
			11/5/2001	41.91	6528.99	8/21/2001	43.76	6527.82			
			11/12/2001	41.72	6529.18	8/27/2001	44.16	6527.42			
			11/19/2001	41.83	6529.07	9/4/2001	44.16	6527.42			
			11/28/2001	42.05	6528.85	9/10/2001	43.94	6527.64			
			12/3/2001	41.68	6529.22	9/17/2001	43.84	6527.74			
			12/10/2001	41.81	6529.09	9/24/2001	43.93	6527.65			
			12/17/2001	41.92	6528.98	10/1/2001	43.80	6527.78			
			12/26/2001	41.93	6528.97	10/8/2001	43.67	6527.91			
			<b>B11</b>			10/15/2001	43.72	6527.86			
			2/13/2001	49.88	6527.51	10/22/2001	43.71	6527.87			
			9/21/2001	49.28	6528.11	10/29/2001	43.59	6527.99			
						11/5/2001	43.51	6528.07			
						11/12/2001	43.31	6528.27			
						11/19/2001	43.39	6528.19			
						11/28/2001	43.90	6527.68			
						12/3/2001	43.48	6528.10			

\* Drawdown Tube Pressure, # Transducer Reading

1A - GH

**Table A.1-1 WATER LEVELS FOR HOMESTAKE'S ALLUVIAL WELLS (cont.)**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>GV</b>			<b>K10</b>			<b>KF</b>			11/12/2001	29.68	6540.53
9/24/2001	50.08	6527.30	1/24/2001	62.41	6538.40	1/2/2001	30.07	6540.14	11/19/2001	29.45	6540.76
<b>I</b>			7/26/2001	83.70	6517.11	1/8/2001	30.01	6540.20	11/28/2001	29.35	6540.86
5/30/2001	32.18	6535.02	<b>K11</b>			1/15/2001	30.22	6539.99	12/3/2001	28.88	6541.33
<b>K2</b>			1/24/2001	69.59	6531.02	1/22/2001	30.28	6539.93	12/10/2001	29.04	6541.17
1/22/2001	27.00	6545.21	7/26/2001	64.45	6536.16	1/25/2001	30.08	6540.13	12/17/2001	28.80	6541.41
4/16/2001	26.61	6545.60	<b>KA</b>			1/29/2001	30.03	6540.18	12/26/2001	28.65	6541.56
9/19/2001	27.41	6544.80	1/22/2001	32.05	6540.14	2/5/2001	29.98	6540.23	<b>KN</b>		
<b>K4</b>			4/16/2001	31.95	6540.24	2/12/2001	29.99	6540.22	9/19/2001	26.72	6542.87
1/22/2001	57.54	6544.48	7/26/2001	32.61	6539.58	2/21/2001	30.19	6540.02			
2/15/2001	52.90	6549.12	9/19/2001	32.81	6539.38	2/26/2001	30.20	6540.01			
4/18/2001	51.90	6550.12	10/18/2001	32.18	6540.01	3/5/2001	30.18	6540.03			
7/26/2001	79.60	6522.42	<b>KB</b>			3/12/2001	30.06	6540.15			
9/19/2001	81.40	6520.62	1/22/2001	30.18	6541.47	3/19/2001	30.10	6540.11			
10/24/2001	76.95	6525.07	4/16/2001	29.96	6541.69	3/26/2001	29.95	6540.26			
<b>K5</b>			7/26/2001	30.80	6540.85	4/2/2001	29.92	6540.29			
1/23/2001	69.00	6532.73	9/19/2001	30.58	6541.07	4/10/2001	29.89	6540.32			
4/18/2001	82.00	6519.73	<b>KC</b>			4/16/2001	30.14	6540.07			
7/26/2001	81.62	6520.11	1/22/2001	28.18	6542.13	4/18/2001	30.09	6540.12			
10/24/2001	82.53	6519.20	4/16/2001	27.98	6542.33	4/23/2001	30.28	6539.93			
<b>K7</b>			7/26/2001	29.13	6541.18	4/30/2001	30.18	6540.03			
1/23/2001	58.20	6543.33	9/19/2001	28.61	6541.70	5/7/2001	30.19	6540.02			
4/18/2001	56.88	6544.65	10/18/2001	27.84	6542.47	5/14/2001	30.13	6540.08			
7/26/2001	59.90	6541.63	12/13/2001	25.92	6544.39	5/21/2001	30.04	6540.17			
9/19/2001	58.52	6543.01	<b>KD</b>			5/29/2001	30.00	6540.21			
10/24/2001	56.57	6544.96	1/22/2001	25.43	6544.79	6/4/2001	30.04	6540.17			
<b>K8</b>			4/16/2001	25.04	6545.18	6/11/2001	30.26	6539.95			
1/24/2001	56.03	6544.46	<b>KE</b>			6/18/2001	30.76	6539.45			
4/18/2001	82.60	6517.89	1/22/2001	25.78	6546.50	6/25/2001	30.73	6539.48			
7/26/2001	82.50	6517.99	<b>KEB</b>			7/2/2001	30.91	6539.30			
10/24/2001	81.73	6518.76	1/22/2001	27.15	6542.58	7/9/2001	31.14	6539.07			
<b>K9</b>			3/1/2001	28.20	6541.53	7/16/2001	31.00	6539.21			
1/23/2001	65.16	6535.18	5/10/2001	28.40	6541.33	7/23/2001	31.06	6539.15			
7/26/2001	68.54	6531.80	7/26/2001	30.20	6539.53	7/26/2001	31.10	6539.11			
			9/19/2001	25.00	6544.73	7/30/2001	31.28	6538.93			
						8/7/2001	31.47	6538.74			
						8/14/2001	31.54	6538.67			
						8/21/2001	31.52	6538.69			
						8/27/2001	31.80	6538.41			
						9/4/2001	31.89	6538.32			
						9/10/2001	31.74	6538.47			
						9/17/2001	31.19	6539.02			
						9/24/2001	31.24	6538.97			
						10/1/2001	31.07	6539.14			
						10/8/2001	30.90	6539.31			
						10/15/2001	30.71	6539.50			
						10/18/2001	30.56	6539.65			
						10/22/2001	30.43	6539.78			
						10/29/2001	30.15	6540.06			
						11/5/2001	29.99	6540.22			

\* Drawdown Tube Pressure, # Transducer Reading

GV - KN



**Table A.1-1 WATER LEVELS FOR HOMESTAKE'S ALLUVIAL WELLS (cont.)**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>KZ</b>			11/28/2001	33.00	6538.72	<b>MR</b>			<b>P</b>		
1/2/2001	34.30	6537.42	12/3/2001	32.71	6539.01	10/22/2001	68.58	6497.68	7/23/2001	56.57	6530.69
1/8/2001	34.05	6537.67	12/10/2001	32.55	6539.17	<b>MS</b>			<b>P3</b>		
1/15/2001	34.12	6537.60	12/17/2001	32.47	6539.25	10/22/2001	62.00	6508.67	3/8/2001	66.91	6523.04
1/22/2001	34.10	6537.62	12/26/2001	32.15	6539.57	<b>MT</b>			<b>P4</b>		
1/22/2001	34.10	6537.62	<b>L</b>			10/22/2001	68.40	6499.03	3/8/2001	85.77	6503.75
1/29/2001	33.74	6537.98	4/17/2001	42.98	6531.99	<b>MU</b>			<b>PM</b>		
2/5/2001	33.65	6538.07	<b>L5</b>			10/22/2001	44.19	6530.00	8/14/2001	36.14	6531.28
2/12/2001	33.99	6537.73	4/17/2001	48.70	6527.37	<b>MX</b>			<b>S</b>		
2/21/2001	33.95	6537.77	9/17/2001	50.10	6525.97	10/18/2001	52.07	6516.54	5/10/2001	55.61	6525.56
2/26/2001	33.96	6537.76	<b>L6</b>			<b>MY</b>					
3/5/2001	33.94	6537.78	9/21/2001	27.21	6547.43	10/18/2001	58.07	6515.49			
3/12/2001	33.87	6537.85	<b>L7</b>			<b>N</b>					
3/19/2001	33.90	6537.82	4/17/2001	58.40	6518.21	6/4/2001	53.43	6530.54			
3/26/2001	33.75	6537.97	9/17/2001	50.30	6526.31	8/29/2001	53.41	6530.56			
4/2/2001	33.70	6538.02	<b>L8</b>			<b>NA</b>					
4/10/2001	33.65	6538.07	4/17/2001	49.65	6526.84	9/9/2001	57.75	6533.23			
4/16/2001	33.88	6537.84	9/17/2001	55.00	6521.49	<b>NB</b>					
4/23/2001	33.95	6537.77	<b>L9</b>			9/10/2001	50.48	6542.82			
4/30/2001	33.90	6537.82	4/17/2001	48.30	6528.93	<b>NC</b>					
5/7/2001	34.00	6537.72	9/17/2001	52.77	6524.46	8/29/2001	53.21	6532.62			
5/14/2001	33.90	6537.82	<b>L10</b>			<b>NE5</b>					
5/21/2001	34.00	6537.72	4/17/2001	46.74	6530.09	2/15/2001	93.90	6573.10			
5/29/2001	33.96	6537.76	9/17/2001	52.63	6524.20	<b>NW5</b>					
6/4/2001	33.93	6537.79	<b>M5</b>			2/20/2001	128.60	6528.98			
6/11/2001	34.09	6537.63	2/15/2001	49.50	6525.84	<b>O</b>					
6/18/2001	34.12	6537.60	8/14/2001	49.16	6526.18	8/29/2001	48.86	6538.97			
6/25/2001	34.28	6537.44	<b>MO</b>								
7/2/2001	34.46	6537.26	3/12/2001	63.24	6509.65						
7/9/2001	34.40	6537.32	10/9/2001	64.38	6508.51						
7/16/2001	34.44	6537.28	<b>MQ</b>								
7/23/2001	34.46	6537.26	10/22/2001	65.04	6509.26						
7/26/2001	34.56	6537.16									
7/30/2001	34.54	6537.18									
8/7/2001	34.72	6537.00									
8/14/2001	34.45	6537.27									
8/21/2001	34.78	6536.94									
8/27/2001	34.83	6536.89									
9/4/2001	34.92	6536.80									
9/10/2001	34.96	6536.76									
9/17/2001	34.94	6536.78									
9/24/2001	34.93	6536.79									
10/1/2001	34.88	6536.84									
10/8/2001	34.68	6537.04									
10/15/2001	34.64	6537.08									
10/22/2001	34.41	6537.31									
10/29/2001	34.21	6537.51									
11/5/2001	34.02	6537.70									
11/12/2001	33.65	6538.07									
11/19/2001	33.25	6538.47									

\* Drawdown Tube Pressure, # Transducer Reading

KZ - S

**Table A.1-1 WATER LEVELS FOR HOMESTAKE'S ALLUVIAL WELLS (cont.)**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>S1</b>			12/10/2001	50.51	6524.68	11/5/2001	48.56	6525.16	4/23/2001	55.05	6523.74
1/2/2001	51.35	6523.84	12/17/2001	50.58	6524.61	11/12/2001	48.33	6525.39	4/30/2001	54.92	6523.87
1/8/2001	51.25	6523.94	12/26/2001	50.48	6524.71	11/19/2001	48.28	6525.44	5/7/2001	54.96	6523.83
1/15/2001	51.28	6523.91	<b>S2</b>			11/28/2001	48.32	6525.40	5/14/2001	54.85	6523.94
1/22/2001	51.31	6523.88	1/2/2001	48.84	6524.88	12/3/2001	48.19	6525.53	5/21/2001	54.84	6523.95
1/29/2001	51.22	6523.97	1/4/2001	48.81	6524.91	12/10/2001	48.05	6525.67	5/29/2001	54.80	6523.99
2/5/2001	51.31	6523.88	1/8/2001	48.72	6525.00	12/17/2001	48.19	6525.53	6/4/2001	54.75	6524.04
2/12/2001	51.35	6523.84	1/15/2001	48.74	6524.98	12/26/2001	48.70	6525.02	6/11/2001	54.74	6524.05
2/21/2001	51.35	6523.84	1/22/2001	48.74	6524.98	<b>S3</b>			6/18/2001	54.60	6524.19
2/26/2001	51.30	6523.89	1/29/2001	48.77	6524.95	7/23/2001	50.50	6524.28	6/25/2001	54.67	6524.12
3/5/2001	51.31	6523.88	2/5/2001	48.93	6524.79	<b>S4</b>			7/2/2001	54.79	6524.00
3/12/2001	51.27	6523.92	2/12/2001	48.99	6524.73	3/12/2001	50.89	6524.40	7/9/2001	54.94	6523.85
3/19/2001	51.39	6523.80	2/21/2001	49.00	6524.72	7/23/2001	51.00	6524.29	7/16/2001	54.81	6523.98
3/26/2001	51.30	6523.89	2/26/2001	48.89	6524.83	<b>S11</b>			7/23/2001	54.81	6523.98
4/2/2001	51.29	6523.90	3/5/2001	48.90	6524.82	10/17/2001	51.28	6527.11	7/30/2001	54.93	6523.86
4/10/2001	51.22	6523.97	3/12/2001	48.80	6524.92	<b>S12</b>			8/7/2001	55.00	6523.79
4/16/2001	51.33	6523.86	3/19/2001	48.90	6524.82	3/19/2001	56.56	6522.29	8/14/2001	54.88	6523.91
4/23/2001	51.32	6523.87	3/26/2001	48.79	6524.93	<b>SE</b>			8/21/2001	54.67	6524.12
4/30/2001	51.27	6523.92	4/2/2001	48.78	6524.94	3/19/2001	55.38	6522.61	8/27/2001	54.67	6524.12
5/7/2001	51.28	6523.91	4/10/2001	48.70	6525.02	<b>SE4</b>			9/4/2001	54.73	6524.06
5/14/2001	51.20	6523.99	4/16/2001	48.82	6524.90	3/19/2001	53.71	6524.29	9/10/2001	54.61	6524.18
5/21/2001	51.24	6523.95	4/23/2001	48.80	6524.92	<b>SO</b>			9/17/2001	54.56	6524.23
5/29/2001	51.23	6523.96	4/30/2001	48.81	6524.91	1/2/2001	54.88	6523.91	9/24/2001	54.57	6524.22
6/4/2001	51.19	6524.00	5/7/2001	48.78	6524.94	1/8/2001	54.68	6524.11	10/1/2001	54.57	6524.22
6/11/2001	51.22	6523.97	5/14/2001	48.70	6525.02	1/15/2001	54.70	6524.09	10/8/2001	54.44	6524.35
6/18/2001	50.85	6524.34	5/21/2001	48.79	6524.93	1/22/2001	54.81	6523.98	10/15/2001	54.59	6524.20
6/25/2001	51.08	6524.11	5/29/2001	48.73	6524.99	1/29/2001	54.71	6524.08	10/22/2001	54.51	6524.28
7/2/2001	51.30	6523.89	6/4/2001	48.70	6525.02	2/5/2001	54.85	6523.94	10/29/2001	54.58	6524.21
7/9/2001	51.40	6523.79	6/11/2001	48.76	6524.96	2/12/2001	54.95	6523.84	11/5/2001	54.51	6524.28
7/16/2001	51.42	6523.77	6/18/2001	48.66	6525.06	2/21/2001	54.90	6523.89	11/12/2001	54.38	6524.41
7/23/2001	51.41	6523.78	6/25/2001	48.81	6524.91	2/26/2001	54.89	6523.90	11/19/2001	54.36	6524.43
7/30/2001	51.44	6523.75	7/2/2001	48.92	6524.80	3/5/2001	54.97	6523.82	11/28/2001	54.48	6524.31
8/7/2001	51.42	6523.77	7/9/2001	49.00	6524.72	3/12/2001	54.87	6523.92	12/3/2001	54.22	6524.57
8/14/2001	51.33	6523.86	7/16/2001	48.92	6524.80	3/19/2001	55.50	6523.29	12/10/2001	54.18	6524.61
8/21/2001	51.17	6524.02	7/23/2001	48.88	6524.84	3/26/2001	54.91	6523.88	12/17/2001	54.15	6524.64
8/27/2001	50.98	6524.21	7/30/2001	48.88	6524.84	4/2/2001	54.89	6523.90	12/26/2001	54.07	6524.72
9/4/2001	50.95	6524.24	8/7/2001	48.87	6524.85	4/10/2001	54.79	6524.00			
9/10/2001	50.94	6524.25	8/14/2001	48.46	6525.26	4/16/2001	55.00	6523.79			
9/17/2001	50.94	6524.25	8/21/2001	48.62	6525.10						
9/24/2001	50.91	6524.28	8/27/2001	48.49	6525.23						
10/1/2001	50.90	6524.29	9/4/2001	48.44	6525.28						
10/8/2001	50.84	6524.35	9/10/2001	48.44	6525.28						
10/15/2001	50.94	6524.25	9/17/2001	48.41	6525.31						
10/22/2001	50.99	6524.20	9/24/2001	48.36	6525.36						
10/29/2001	51.00	6524.19	10/1/2001	48.38	6525.34						
11/5/2001	51.00	6524.19	10/8/2001	48.28	6525.44						
11/12/2001	50.88	6524.31	10/15/2001	48.44	6525.28						
11/19/2001	50.77	6524.42	10/22/2001	48.41	6525.31						
11/28/2001	50.83	6524.36	10/29/2001	48.46	6525.26						
12/3/2001	50.73	6524.46									

\* Drawdown Tube Pressure, # Transducer Reading

S1 - SO



**Table A.1-1 WATER LEVELS FOR HOMESTAKE'S ALLUVIAL WELLS (cont.)**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>SP</b>			12/10/2001	54.39	6524.27	<b>X16</b>			10/30/2001	40.20	6544.59
1/2/2001	55.15	6523.51	12/17/2001	54.41	6524.25						
1/8/2001	54.98	6523.68	12/26/2001	54.35	6524.31						
1/15/2001	55.03	6523.63	<b>T</b>			<b>X17</b>					
1/22/2001	55.10	6523.56				10/20/2001	40.60	6545.24			
1/29/2001	55.00	6523.66	9/21/2001	53.00	6526.23						
2/5/2001	55.12	6523.54	<b>T2</b>			<b>X18</b>					
2/12/2001	55.19	6523.47				10/30/2001	28.80	6557.28			
2/21/2001	55.15	6523.51	3/13/2001	134.88	6529.94						
2/26/2001	55.17	6523.49	3/13/2001	134.88	6529.94	<b>X19</b>					
3/5/2001	55.20	6523.46	<b>TA</b>			10/30/2001	43.55	6541.65			
3/12/2001	55.15	6523.51				<b>Y</b>					
3/19/2001	55.38	6523.28	2/13/2001	31.22	6549.08	1/2/2001	38.18	6534.70			
3/26/2001	55.33	6523.33	2/14/2001	31.68	6548.62	2/13/2001	38.44	6534.44			
4/2/2001	55.26	6523.40	9/21/2001	34.90	6545.40	4/16/2001	38.08	6534.80			
4/10/2001	55.19	6523.47	<b>TB</b>			7/25/2001	39.10	6533.78			
4/16/2001	55.39	6523.27				9/19/2001	39.65	6533.23			
4/23/2001	55.38	6523.28	2/13/2001	29.18	6554.39	10/10/2001	39.47	6533.41			
4/30/2001	55.30	6523.36	9/19/2001	31.55	6552.02						
5/7/2001	55.33	6523.33	<b>W</b>								
5/14/2001	55.21	6523.45									
5/21/2001	55.22	6523.44	10/17/2001	46.90	6525.24	<b>WN4</b>					
5/29/2001	55.18	6523.48									
6/4/2001	55.10	6523.56	<b>X</b>			2/20/2001	124.40	6538.38			
6/11/2001	55.09	6523.57									
6/18/2001	54.75	6523.91	1/2/2001	23.98	6547.63	<b>X13</b>					
6/25/2001	54.95	6523.71	2/13/2001	23.95	6547.66	10/30/2001	40.35	6546.59			
7/2/2001	55.17	6523.49	4/16/2001	23.36	6548.25	<b>X14</b>					
7/9/2001	55.43	6523.23	7/25/2001	39.10	6532.51	10/30/2001	39.22	6546.98			
7/16/2001	55.26	6523.40	10/10/2001	21.98	6549.63	<b>X15</b>					
7/23/2001	55.27	6523.39									
7/30/2001	55.43	6523.23	<b>X13</b>								
8/7/2001	55.48	6523.18									
8/14/2001	55.32	6523.34	<b>X14</b>								
8/21/2001	55.07	6523.59									
8/27/2001	55.12	6523.54	<b>X15</b>								
9/4/2001	55.22	6523.44									
9/10/2001	55.07	6523.59									
9/17/2001	55.06	6523.60									
9/24/2001	55.06	6523.60									
10/1/2001	55.06	6523.60									
10/8/2001	54.91	6523.75									
10/15/2001	55.04	6523.62									
10/22/2001	54.99	6523.67									
10/29/2001	55.01	6523.65									
11/5/2001	54.96	6523.70									
11/12/2001	54.76	6523.90									
11/19/2001	54.74	6523.92									
11/28/2001	54.84	6523.82									
12/3/2001	54.55	6524.11									

\* Drawdown Tube Pressure, # Transducer Reading

SP - Y

**TABLE A.1-2 WATER LEVELS FOR THE SUBDIVISION ALLUVIAL WELLS**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0453			5/14/2001	58.16	6502.58						
6/5/2001	34.50	6533.50	9/17/2001	163.30	6397.44						
			12/12/2001	60.07	6500.67						
0490			SUB1								
6/5/2001	37.80	6524.62	4/16/2001	33.68	6527.32						
0491			SUB3								
8/22/2001	39.32	6523.30	5/2/2001	28.28	6528.79						
0496											
2/13/2001	52.10	6510.42									
4/3/2001	52.04	6510.48									
4/13/2001	52.22	6510.30									
4/19/2001	66.73	6495.79									
4/26/2001	78.90	6483.62									
4/30/2001	54.38	6508.14									
5/14/2001	54.03	6508.49									
8/20/2001	74.51	6488.01									
0497											
4/3/2001	51.70	6510.92									
8/20/2001	55.71	6506.91									
0688											
6/5/2001	60.51	6502.11									
0804											
5/10/2001	45.80	6516.20									
0844											
7/24/2001	34.26	6521.87									
0845											
7/24/2001	34.50	6522.55									
CW44											
2/13/2001	54.30	6506.44									
4/3/2001	54.97	6505.77									
4/13/2001	55.06	6505.68									
4/19/2001	133.80	6426.94									
4/26/2001	153.25	6407.49									
4/30/2001	58.34	6502.40									
5/4/2001	141.25	6419.49									

\* Drawdown Tube Pressure, # Transducer Reading

0453 - SUB3



**TABLE A.1-3 WATER LEVELS FOR REGIONAL ALLUVIAL WELLS**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>0631</b>			<b>0644</b>			4/19/2001 142.13 6402.84			<b>0685</b>		
2/13/2001	76.08	6465.02	4/3/2001	68.93	6474.97	4/26/2001	163.31	6381.66	4/3/2001	87.61	6468.96
4/3/2001	75.73	6465.37	10/15/2001	71.53	6472.37	4/30/2001	67.66	6477.31	4/13/2001	87.72	6468.85
4/13/2001	75.62	6465.48	<b>0646</b>			5/4/2001	162.45	6382.52	4/19/2001	88.05	6468.52
4/19/2001	86.88	6454.22	10/23/2001 73.40 6469.95			5/14/2001	67.43	6477.54	4/23/2001	88.42	6468.15
4/26/2001	92.86	6448.24	<b>0647</b>			9/17/2001	171.44	6373.53	4/26/2001	88.74	6467.83
4/30/2001	77.74	6463.36	2/13/2001 85.90 6466.01			<b>0654</b>			4/30/2001	88.72	6467.85
5/4/2001	91.58	6449.52	4/3/2001	85.59	6466.32	9/18/2001 74.69 6475.81			5/3/2001	88.52	6468.05
5/14/2001	78.33	6462.77	4/13/2001	85.91	6466.00	<b>0657</b>			5/7/2001	88.91	6467.66
9/17/2001	102.28	6438.82	4/19/2001	97.72	6454.19	2/13/2001 84.00 6467.81			5/10/2001	89.11	6467.46
<b>0632</b>			4/26/2001	99.90	6452.01	4/3/2001 84.13 6467.68			5/14/2001	89.05	6467.52
2/13/2001	75.58	6465.72	4/30/2001	88.04	6463.87	4/13/2001 84.24 6467.57			5/17/2001	89.13	6467.44
4/3/2001	75.38	6465.92	5/14/2001	88.80	6463.11	4/19/2001 94.54 6457.27			6/5/2001	89.70	6466.87
4/13/2001	75.28	6466.02	8/15/2001	89.84	6462.07	4/26/2001 99.10 6452.71			7/12/2001	90.57	6466.00
4/26/2001	93.04	6448.26	<b>0648</b>			4/30/2001 87.18 6464.63			8/14/2001	89.90	6466.67
4/30/2001	77.68	6463.62	2/13/2001 86.63 6461.16			5/14/2001 86.68 6465.13			9/25/2001	90.98	6465.59
5/14/2001	78.11	6463.19	4/3/2001	86.12	6461.67	9/17/2001 100.00 6451.81			11/20/2001	90.68	6465.89
9/17/2001	103.00	6438.30	4/13/2001	86.51	6461.28	<b>0658</b>			12/11/2001	90.52	6466.05
<b>0634</b>			4/19/2001	95.83	6451.96	2/13/2001 86.68 6463.50			12/23/2001	91.03	6465.54
9/20/2001	72.39	6487.68	4/26/2001	98.27	6449.52	4/3/2001 86.22 6463.96			<b>0686</b>		
<b>0636</b>			4/30/2001	98.35	6449.44	4/13/2001 86.54 6463.64			4/3/2001 104.74 6474.06		
9/18/2001	98.40	6475.04	5/4/2001	97.38	6450.41	4/19/2001 100.00 6450.18			9/18/2001 105.96 6472.84		
<b>0637</b>			5/14/2001	90.36	6457.43	4/26/2001 100.00 6450.18			<b>0687</b>		
9/18/2001	102.40	6472.80	8/15/2001	91.86	6455.93	4/30/2001 89.20 6460.98			4/3/2001 87.07 6468.89		
<b>0640</b>			<b>0649</b>			5/14/2001 89.64 6460.54			4/13/2001 86.93 6469.03		
7/24/2001	52.51	6527.46	2/13/2001 81.09 6462.20			9/17/2001 105.50 6444.68			4/19/2001 87.20 6468.76		
<b>0641</b>			4/3/2001	80.80	6462.49	<b>0659</b>			4/23/2001 87.58 6468.38		
7/25/2001	50.99	6522.37	4/13/2001	80.90	6462.39	9/20/2001 71.34 6488.83			4/26/2001 87.80 6468.16		
<b>0642</b>			4/19/2001	91.00	6452.29	<b>0682</b>			4/30/2001 87.81 6468.15		
7/25/2001	51.63	6520.25	4/26/2001	94.06	6449.23	4/3/2001 80.80 6473.17			5/3/2001 87.66 6468.30		
<b>0643</b>			4/30/2001	82.65	6460.64	<b>0683</b>			5/7/2001 88.00 6467.96		
4/3/2001	67.64	6483.69	5/14/2001	83.80	6459.49	4/3/2001 84.80 6471.24			5/10/2001 88.16 6467.80		
10/15/2001	71.70	6479.63	8/15/2001	85.52	6457.77	9/18/2001 86.41 6469.63			5/14/2001 88.13 6467.83		
<b>0652</b>			<b>0653</b>			<b>0684</b>			5/17/2001 89.59 6466.37		
10/23/2001 81.03 6457.12			2/13/2001 66.31 6478.66			4/3/2001 82.33 6470.95			6/5/2001 88.72 6467.24		
<b>0654</b>			4/3/2001	66.26	6478.71	9/25/2001 83.78 6469.50			7/12/2001 89.70 6466.26		
<b>0657</b>			4/13/2001	66.16	6478.81	<b>0685</b>			8/14/2001 89.20 6466.76		
<b>0660</b>			<b>0663</b>			4/3/2001 87.61 6468.96			9/25/2001 90.11 6465.85		
<b>0666</b>			<b>0669</b>			4/13/2001 87.72 6468.85			11/20/2001 89.93 6466.03		
<b>0672</b>			<b>0675</b>			4/19/2001 88.05 6468.52			12/11/2001 89.84 6466.12		
<b>0678</b>			<b>0681</b>			4/23/2001 88.42 6468.15			12/23/2001 90.20 6465.76		
<b>0684</b>			<b>0687</b>			4/26/2001 88.74 6467.83			<b>0689</b>		
<b>0690</b>			<b>0693</b>			4/30/2001 88.72 6467.85			7/25/2001 69.78 6472.24		
<b>0696</b>			<b>0699</b>			5/3/2001 88.52 6468.05					
<b>0702</b>			<b>0705</b>			5/7/2001 88.91 6467.66					
<b>0708</b>			<b>0711</b>			5/10/2001 89.11 6467.46					
<b>0714</b>			<b>0717</b>			5/14/2001 89.05 6467.52					
<b>0720</b>			<b>0723</b>			5/17/2001 89.13 6467.44					
<b>0726</b>			<b>0729</b>			6/5/2001 89.70 6466.87					
<b>0732</b>			<b>0735</b>			7/12/2001 90.57 6466.00					
<b>0738</b>			<b>0741</b>			8/14/2001 89.90 6466.67					
<b>0744</b>			<b>0747</b>			9/25/2001 90.98 6465.59					
<b>0750</b>			<b>0753</b>			11/20/2001 90.68 6465.89					
<b>0756</b>			<b>0759</b>			12/11/2001 90.52 6466.05					
<b>0762</b>			<b>0765</b>			12/23/2001 91.03 6465.54					

\* Drawdown Tube Pressure, # Transducer Reading

0631 - 0689

**TABLE A.1-3 WATER LEVELS FOR REGIONAL ALLUVIAL WELLS (cont.)**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>0692</b>			<b>0865</b>			<b>0885</b>			<b>0935</b>		
7/25/2001	65.87	6518.95	4/3/2001	63.81	6492.97	9/20/2001	67.00	6497.64	9/25/2001	88.66	6469.46
			8/20/2001	67.84	6488.94						
<b>0846</b>			<b>0866</b>			<b>0886</b>			<b>0994</b>		
7/24/2001	43.90	6505.02	4/3/2001	58.04	6500.08	9/20/2001	70.52	6494.03	4/3/2001	87.18	6467.82
			8/23/2001	63.67	6494.45				4/13/2001	87.22	6467.78
<b>0848</b>			<b>0867</b>			<b>0888</b>			4/19/2001	87.18	6467.82
4/3/2001	57.81	6514.68	8/23/2001	68.00	6487.90	9/18/2001	78.26	6479.07	4/23/2001	87.33	6467.67
7/24/2001	59.34	6513.15							4/26/2001	87.32	6467.68
<b>0851</b>			<b>0868</b>			<b>0890</b>			4/30/2001	87.45	6467.55
8/23/2001	73.84	6472.60	8/29/2001	60.78	6513.96	9/20/2001	74.76	6483.67	5/3/2001	87.40	6467.60
<b>0855</b>			<b>0869</b>			<b>0893</b>			5/7/2001	87.51	6467.49
8/23/2001	80.53	6460.58	2/13/2001	67.58	6476.91	9/20/2001	70.68	6493.29	5/10/2001	87.45	6467.55
<b>0861</b>			4/3/2001	67.60	6476.89	<b>0894</b>			5/14/2001	87.55	6467.45
8/29/2001	70.24	6489.61	4/13/2001	67.66	6476.83	4/3/2001	77.54	6476.75	5/17/2001	87.62	6467.38
<b>0862</b>			4/19/2001	89.00	6455.49	9/18/2001	78.00	6476.29	6/5/2001	87.98	6467.02
2/13/2001	58.60	6497.58	4/26/2001	89.00	6455.49	<b>0895</b>			7/12/2001	88.47	6466.53
4/3/2001	61.90	6494.28	4/30/2001	68.80	6475.69	4/3/2001	80.80	6473.04	8/14/2001	88.66	6466.34
4/3/2001	58.71	6497.47	5/14/2001	68.70	6475.79	9/18/2001	82.00	6471.84	9/25/2001	89.04	6465.96
4/13/2001	58.88	6497.30	8/20/2001	84.53	6459.96	<b>0896</b>			11/20/2001	89.48	6465.52
4/19/2001	87.83	6468.35	<b>0876</b>			4/3/2001	82.00	6473.61	12/11/2001	89.68	6465.32
4/26/2001	91.28	6464.90	4/3/2001	67.27	6476.99	9/18/2001	83.11	6472.50	12/23/2001	89.25	6465.75
5/14/2001	61.48	6494.70	8/20/2001	69.24	6475.02	<b>0899</b>			<b>0996</b>		
8/20/2001	90.72	6465.46	<b>0881</b>			4/3/2001	96.29	6474.55	4/3/2001	86.21	6466.31
<b>0863</b>			9/20/2001	74.60	6490.44	9/18/2001	97.32	6473.52	4/13/2001	86.36	6466.16
2/13/2001	67.00	6489.56	<b>0882</b>			<b>0914</b>			4/19/2001	88.28	6464.24
4/3/2001	66.74	6489.82	9/20/2001	66.55	6494.61	5/8/2001	40.25	6601.75	4/23/2001	88.91	6463.61
4/13/2001	66.78	6489.78	<b>0883</b>			<b>0921</b>			4/26/2001	89.54	6462.98
4/19/2001	88.74	6467.82	9/20/2001	59.85	6497.28	5/8/2001	38.58	6585.42	4/30/2001	88.34	6464.18
4/26/2001	91.00	6465.56	<b>0884</b>			<b>0922</b>			5/3/2001	87.70	6464.82
4/30/2001	68.98	6487.58	9/21/2001	75.16	6490.94	5/8/2001	52.68	6569.02	5/7/2001	89.80	6462.72
5/14/2001	68.74	6487.82							5/10/2001	90.22	6462.30
8/20/2001	89.55	6467.01							5/14/2001	88.49	6464.03
<b>0864</b>									5/17/2001	89.89	6462.63
8/29/2001	69.68	6477.04							6/5/2001	91.08	6461.44

\* Drawdown Tube Pressure, # Transducer Reading

0692 - 0996



# TABLE A.2-1 WATER LEVELS FOR CHINLE AQUIFERS

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>0493</b>			<b>0931</b>			<b>CE5</b>			<b>CW15</b>		
3/13/2001	72.58	6487.70	12/12/2001	94.48	6516.08	2/20/2001	40.39	6528.16	6/6/2001	65.21	6486.11
6/5/2001	97.22	6463.06				6/4/2001	40.80	6527.75	12/12/2001	69.02	6482.30
12/12/2001	99.60	6460.68	<b>0932</b>			12/12/2001	41.61	6526.94			
<b>0494</b>			4/19/2001	86.73	6515.38	<b>CW1</b>			<b>CW17</b>		
6/5/2001	34.60	6525.54	<b>0934</b>			12/17/2001	160.33	6424.89	6/7/2001	60.80	6528.52
12/12/2001	35.09	6525.05	7/25/2001	35.70	6549.89	<b>CW2</b>			<b>CW18</b>		
<b>0653</b>			12/12/2001	115.40	6470.19	5/30/2001	156.86	6428.62	7/24/2001	11.90	6560.75
2/13/2001	66.31	6478.66	<b>0944</b>			<b>CW2-1</b>			12/12/2001	37.08	6535.57
4/3/2001	66.26	6478.71	9/27/2001	41.65	6546.96	12/17/2001	63.91	6521.57	<b>CW25</b>		
4/13/2001	66.16	6478.81	12/12/2001	89.59	6499.02	<b>CW3</b>			12/17/2001	18.00	6549.20
4/19/2001	142.13	6402.84	<b>0994</b>			2/13/2001	182.08	6405.10	<b>CW26</b>		
4/26/2001	163.31	6381.66	4/3/2001	87.18	6467.82	6/5/2001	175.54	6411.64	6/6/2001	85.89	6475.54
4/30/2001	67.66	6477.31	4/13/2001	87.22	6467.78	12/17/2001	188.64	6398.54	12/12/2001	87.75	6473.68
5/4/2001	162.45	6382.52	4/19/2001	87.18	6467.82	<b>CW4R</b>			<b>CW27</b>		
5/14/2001	67.43	6477.54	4/23/2001	87.33	6467.67	4/16/2001	40.48	6528.25	6/6/2001	68.18	6494.70
9/17/2001	171.44	6373.53	4/26/2001	87.32	6467.68	6/4/2001	41.00	6527.73	12/12/2001	70.06	6492.82
<b>0850</b>			4/30/2001	87.45	6467.55	12/12/2001	41.80	6526.93	<b>CW28</b>		
12/12/2001	55.80	6493.35	5/3/2001	87.40	6467.60	<b>CW5</b>			7/24/2001	80.65	6491.03
<b>0853</b>			5/7/2001	87.51	6467.49	12/17/2001	21.30	6548.04	12/12/2001	83.76	6487.92
6/6/2001	70.73	6470.65	5/10/2001	87.45	6467.55	<b>CW6</b>			<b>CW29</b>		
12/12/2001	72.83	6468.55	5/14/2001	87.55	6467.45	12/12/2001	117.21	6458.43	6/6/2001	77.34	6474.88
<b>0859</b>			5/17/2001	87.62	6467.38	<b>CW9</b>			12/12/2001	78.91	6473.31
6/6/2001	74.70	6478.06	6/5/2001	87.98	6467.02	12/12/2001	66.00	6525.83	<b>CW30</b>		
12/12/2001	75.38	6477.38	7/12/2001	88.47	6466.53	<b>CW13</b>			6/5/2001	89.76	6468.55
<b>0927</b>			8/14/2001	88.66	6466.34	12/17/2001	15.00	6561.70	12/12/2001	89.68	6468.63
11/12/2001	147.94	6447.06	9/25/2001	89.04	6465.96	<b>CW14</b>			<b>CW31</b>		
12/17/2001	147.94	6447.06	11/20/2001	89.48	6465.52	12/17/2001	53.30	6512.79	6/7/2001	82.74	6477.52
<b>0929</b>			12/11/2001	89.68	6465.32	<b>CW32</b>			12/12/2001	83.23	6477.03
7/10/2001	50.19	6542.38	12/23/2001	89.25	6465.75				6/7/2001	113.53	6453.75
12/12/2001	66.73	6525.84	<b>CE1</b>						12/12/2001	116.11	6451.17
<b>0930</b>			2/15/2001	45.16	6525.03						
12/12/2001	113.13	6485.41	6/4/2001	50.58	6519.61						
			12/12/2001	51.47	6518.72						
			<b>CE2</b>								
			6/4/2001	59.13	6517.22						
			12/17/2001	63.59	6512.76						

\* Drawdown Tube Pressure, # Transducer Reading

0493 - CW32

**TABLE A.2-1 WATER LEVELS FOR CHINLE AQUIFERS (cont.)**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
CW33											
6/7/2001	106.29	6468.60									
12/12/2001	106.27	6468.62									
CW35											
6/7/2001	59.44	6531.73									
CW36											
12/12/2001	74.58	6476.51									
CW37											
6/6/2001	60.40	6490.77									
12/12/2001	60.55	6490.62									
CW39											
12/12/2001	62.80	6487.91									
CW40											
7/24/2001	16.45	6562.49									
12/12/2001	41.04	6537.90									
CW41											
12/12/2001	82.00	6473.41									
CW42											
9/27/2001	73.53	6475.25									
12/12/2001	73.56	6475.22									
CW43											
9/27/2001	66.04	6482.75									
12/12/2001	66.31	6482.48									
CW44											
2/13/2001	54.30	6506.44									
4/3/2001	54.97	6505.77									
4/13/2001	55.06	6505.68									
4/19/2001	133.80	6426.94									
4/26/2001	153.25	6407.49									
4/30/2001	58.34	6502.40									
5/4/2001	141.25	6419.49									
5/14/2001	58.16	6502.58									
9/17/2001	163.30	6397.44									
12/12/2001	60.07	6500.67									
			</								



**TABLE A.3-1 WATER LEVELS FOR THE SAN ANDRES AQUIFER**

WATER LEVEL ELEVATION (FT-MSL)

1/31/2002

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
<b>#2 Deepwell</b>											
5/2/2001	177.86	6397.80									
<b>0534</b>											
4/12/2001	89.76	6462.81									
12/11/2001	93.79	6458.78									
<b>0535</b>											
4/12/2001	85.24	6454.76									
12/11/2001	90.49	6449.51									
<b>0907</b>											
4/12/2001	87.70	6457.90									
12/11/2001	93.08	6452.52									
<b>0928</b>											
8/29/2001	144.14	6453.46									
12/11/2001	146.54	6451.06									
<b>0938</b>											
4/12/2001	110.41	6458.39									
12/11/2001	115.74	6453.06									
<b>0943</b>											
8/29/2001	68.00	6487.91									
12/11/2001	72.00	6483.91									
<b>0951</b>											
4/12/2001	115.94	6457.76									
12/11/2001	121.32	6452.38									

\* Drawdown Tube Pressure, # Transducer Reading

#2 Deepwell - 0951

**APPENDIX B**  
**WATER QUALITY**



**TABLE OF CONTENTS**

**GROUND-WATER MONITORING  
FOR HOMESTAKE'S GRANTS PROJECT**

**APPENDIX B**

	<u><b>Page Number</b></u>
B.1-1 WATER QUALITY ANALYSES FOR THE TAILINGS WELLS Ca THROUGH ION_BAL.....	B.1-1
B.1-2 WATER QUALITY ANALYSES FOR THE TAILINGS WELLS pH THROUGH TH-230.....	B.1-3
B.2-1 WATER QUALITY ANALYSES FOR THE TOE DRAIN SUMPS Ca THROUGH ION_BAL.....	B.2-1
B.2-2 WATER QUALITY ANALYSES FOR THE TOE DRAIN SUMPS pH THROUGH TH-230.....	B.2-2
B.3-1 WATER QUALITY ANALYSES FOR THE LINED PONDS Ca THROUGH ION_BAL.....	B.3-1
B.3-2 WATER QUALITY ANALYSES FOR THE LINED PONDS pH THROUGH TH-230.....	B.3-2
B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS Ca THROUGH ION_BAL.....	B.4-1
B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS pH THROUGH TH-230.....	B.4-10
B.4-3 WATER QUALITY ANALYSES FOR THE SUBDIVISION ALLUVIAL WELLS Ca THROUGH ION_BAL.....	B.4-19
B.4-4 WATER QUALITY ANALYSES FOR THE SUBDIVISION ALLUVIAL WELLS pH THROUGH TH-230.....	B.4-20
B.4-5 WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS Ca THROUGH ION_BAL.....	B.4-21
B.4-6 WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS pH THROUGH TH-230.....	B.4-25
B.5-1 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS Ca THROUGH ION_BAL.....	B.5-1
B.5-2 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS pH THROUGH TH-230.....	B.5-4
B.6-1 WATER QUALITY ANALYSES FOR THE SAN ANDRES AQUIFER Ca THROUGH ION_BAL.....	B.6-1
B.6-2 WATER QUALITY ANALYSES FOR THE SAN ANDRES AQUIFER pH THROUGH TH-230.....	B.6-2

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**TABLE B.1-1 WATER QUALITY ANALYSES FOR THE TAILINGS WELLS**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos)	Ion_B (ratio)
CN3	10/31/2001	ENER	---	---	---	---	---	---	72.1	630	1500	* 2396	---
CN7	5/2/2001	ENER	---	---	---	---	---	---	107	874	2160	* 4154	---
CS1	4/30/2001	ENER	---	---	---	---	---	---	1060	9410	24500	* 33666	---
	10/17/2001	ENER	---	---	---	---	---	---	1080	11000	26100	* 40324	---
CS2	4/30/2001	ENER	---	---	---	---	---	---	227	1160	3020	* 5305	---
	5/3/2001	ENER	---	---	---	---	---	---	53.0	546	1310	* 2914	---
	8/28/2001	ENER	---	---	---	---	712	---	---	1420	---	---	---
CS3	4/5/2001	ENER	---	---	---	---	---	---	195	812	2040	---	---
	4/25/2001	ENER	---	---	---	---	---	---	197	644	1960	---	---
	4/30/2001	ENER	---	---	---	---	---	---	197	548	1940	* 3512	---
	8/21/2001	ENER	---	---	---	---	706	---	---	1020	---	---	---
	10/31/2001	ENER	---	---	---	---	646	---	159	738	2630	* 4806	---
CS4	5/2/2001	ENER	---	---	---	---	---	---	574	4290	12200	* 18815	---
ED1	8/29/2001	ENER	< 1.000	< 1.000	66.2	8760	5850	4150	717	7400	26500	* 30128	0.937
EN4A	6/28/2001	ENER	---	---	---	---	---	---	246	1600	4670	* 8104	---
	10/17/2001	ENER	---	---	---	---	---	---	236	1300	3910	* 9790	---
	11/1/2001	ENER	---	---	---	---	---	---	87.6	713	1810	* 4299	---
EN4B	6/28/2001	ENER	---	---	---	---	---	---	872	4810	14700	* 22435	---
	10/17/2001	ENER	---	---	---	---	---	---	360	1890	6210	* 14111	---
	11/1/2001	ENER	---	---	---	---	---	---	335	1890	6080	* 9399	---
EN6	10/17/2001	ENER	---	---	---	---	---	---	63.7	505	1320	* 5120	---
ES1	10/17/2001	ENER	---	---	---	---	---	---	1340	8200	41600	* 34121	---
NE5	2/15/2001	ENER	4.70	5.30	9.00	1730	988	557	169	1900	4830	* 8818	0.963
NE6	8/29/2001	ENER	< 1.000	< 1.000	78.5	9310	6010	4270	715	8190	28400	* 31443	0.944
NW5	2/20/2001	ENER	3.10	2.60	35.3	9160	7930	3390	568	8000	25000	* 35443	0.939

\* Signifies Specific Conductivity from HMC



**TABLE B.1-1 WATER QUALITY ANALYSES FOR THE TAILINGS WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
PW1	8/29/2001	ENER	1.30	5.40	62.8	9710	5200	2500	1390	10500	31000	* 33747	0.996
PW2	4/5/2001	ENER	—	—	—	—	—	—	326	1630	4020	—	—
	4/30/2001	ENER	—	—	—	—	—	—	233	1130	2880	* 4904	—
	8/21/2001	ENER	—	—	—	—	616	—	—	1180	—	—	—
	10/31/2001	ENER	—	—	—	—	724	—	120	492	3700	* 6105	—
WC15	5/3/2001	ENER	—	—	—	—	—	—	873	4250	13100	* 23923	—
	10/17/2001	ENER	—	—	—	—	—	—	1440	6800	26900	* 37069	—
WE4	5/2/2001	ENER	—	—	—	—	—	—	203	1050	2810	* 4965	—
WE7	5/2/2001	ENER	—	—	—	—	—	—	456	2560	7210	* 10984	—
WL5	11/1/2001	ENER	—	—	—	—	—	—	198	1520	4770	* 9325	—
WN4	2/20/2001	ENER	11.7	30.6	13.1	3750	2590	312	666	4850	11100	* 17698	0.965

\* Signifies Specific Conductivity from HMC

**TABLE B.1-2 WATER QUALITY ANALYSES FOR THE TAILINGS WELLS**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
CN3	10/31/2001	ENER	---	0.335	0.580	0.790	---	---	---	---	---	---
CN7	5/2/2001	ENER	---	2.23	3.50	0.0880	---	---	---	---	---	---
CS1	4/30/2001	ENER	---	23.9	74.9	0.0580	---	---	---	---	---	---
	10/17/2001	ENER	---	19.1	50.7	0.0950	---	---	---	---	---	---
CS2	4/30/2001	ENER	---	1.05	3.56	0.513	---	---	---	---	---	---
	5/3/2001	ENER	---	0.300	0.370	0.932	---	---	---	---	---	---
	8/28/2001	ENER	---	0.459	2.34	0.538	< 0.100	---	---	---	---	---
CS3	4/5/2001	ENER	---	1.08	0.400	0.0270	---	---	---	---	---	---
	4/25/2001	ENER	---	0.452	0.240	0.0080	---	---	---	---	---	---
	4/30/2001	ENER	---	1.14	0.330	0.0100	---	---	---	---	---	---
	8/21/2001	ENER	---	3.89	3.68	< 0.0050	< 0.100	---	---	---	---	---
	10/31/2001	ENER	---	1.70	1.37	0.0160	0.600	---	---	---	---	---
CS4	5/2/2001	ENER	---	23.0	51.5	0.414	---	---	---	---	---	---
ED1	8/29/2001	ENER	9.90	44.2	113	0.0980	3.92	320	---	---	---	---
EN4A	6/28/2001	ENER	---	7.09	10.9	0.0280	---	---	---	---	---	---
	10/17/2001	ENER	---	5.98	9.21	0.0230	---	---	---	---	---	---
	11/1/2001	ENER	---	0.460	1.36	0.0200	---	---	---	---	---	---
EN4B	6/28/2001	ENER	---	21.0	49.2	0.0900	---	---	---	---	---	---
	10/17/2001	ENER	---	8.34	15.1	0.0460	---	---	---	---	---	---
	11/1/2001	ENER	---	6.42	15.3	0.0090	---	---	---	---	---	---
EN6	10/17/2001	ENER	---	0.284	0.330	0.0400	---	---	---	---	---	---
ES1	10/17/2001	ENER	---	65.4	106	0.346	---	---	---	---	---	---
NE5	2/15/2001	ENER	10.00	6.12	15.8	0.136	1.65	34.4	---	---	---	---
NE6	8/29/2001	ENER	10.00	30.0	123	0.444	2.64	330	---	---	---	---
NW5	2/20/2001	ENER	9.88	51.5	165	0.277	3.13	314	---	---	---	---

**TABLE B.1-2 WATER QUALITY ANALYSES FOR THE TAILINGS WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
PW1	8/29/2001	ENER	9.70	27.6	85.2	0.0610	0.640	310	—	—	—	—
PW2	4/5/2001	ENER	—	5.58	6.87	2.47	—	—	—	—	—	—
	4/30/2001	ENER	—	4.03	2.77	0.710	—	—	—	—	—	—
	8/21/2001	ENER	—	2.63	0.630	0.174	0.500	—	—	—	—	—
	10/31/2001	ENER	—	1.64	1.54	0.0840	0.300	—	—	—	—	—
WC15	5/3/2001	ENER	—	16.3	35.8	0.176	—	—	—	—	—	—
	10/17/2001	ENER	—	29.4	56.5	0.214	—	—	—	—	—	—
WE4	5/2/2001	ENER	—	1.09	2.89	0.0300	—	—	—	—	—	—
WE7	5/2/2001	ENER	—	6.58	19.8	0.0510	—	—	—	—	—	—
WL5	11/1/2001	ENER	—	4.88	12.8	0.0410	—	—	—	—	—	—
WN4	2/20/2001	ENER	9.33	17.4	38.8	0.130	7.27	5.80	—	—	—	—



**TABLE B.2-1 WATER QUALITY ANALYSES FOR THE TOE DRAIN SUMPS**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
East 1 Sump	8/27/2001	ENER	6.30	30.2	75.5	9450	5860	1320	1220	11300	30900	* 33463	1.01
East 2 Sump	8/27/2001	ENER	5.80	36.9	76.3	9570	5510	1180	1400	11600	31300	* 33649	1.03
East Reclaim	8/27/2001	ENER	1.40	6.40	67.4	8720	5530	1390	1410	9630	27500	* 31217	1.01
North 1 Sump	3/1/2001	ENER	—	—	—	—	—	—	—	11700	28200	* 30590	—
	8/27/2001	ENER	3.80	14.4	51.2	7740	5180	1310	913	8610	24600	* 27842	1.02
South 1 Sump	3/1/2001	ENER	—	—	—	—	—	—	—	10000	26500	* 30064	—
	8/27/2001	ENER	12.1	2.60	5.50	197	240	4.60	32.6	207	697	* 10820	1.02
West 1 Sump	8/27/2001	ENER	4.30	22.7	54.6	8590	7390	2240	845	7960	26600	* 29793	0.979
West Reclaim	8/27/2001	ENER	4.40	26.8	52.5	8260	6010	1450	1020	8680	25500	* 28753	1.02

\* Signifies Specific Conductivity from HMC

**TABLE B.2-2 WATER QUALITY ANALYSES FOR THE TOE DRAIN SUMPS**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
East 1 Sump	8/27/2001	ENER	9.40	37.5	82.9	2.94	1.52	100.0	---	---	---	---
East 2 Sump	8/27/2001	ENER	9.40	90.3	106	0.381	1.95	8.40	---	---	---	---
East Reclaim	8/27/2001	ENER	9.40	30.1	96.5	0.301	5.44	85.0	---	---	---	---
North 1 Sump	3/1/2001	ENER	---	50.5	94.9	0.331	---	---	---	---	---	---
	8/27/2001	ENER	9.50	29.9	79.4	0.710	1.82	110	---	---	---	---
South 1 Sump	3/1/2001	ENER	---	38.7	114	0.495	---	---	---	---	---	---
	8/27/2001	ENER	8.50	0.942	2.62	0.0630	1.42	3.70	---	---	---	---
West 1 Sump	8/27/2001	ENER	9.40	38.3	108	0.651	5.88	240	---	---	---	---
West Reclaim	8/27/2001	ENER	9.40	29.2	84.0	0.408	5.32	34.0	---	---	---	---

**TABLE B.3-1 WATER QUALITY ANALYSES FOR THE LINED PONDS**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
E Coll Pond	2/12/2001	ENER	---	---	---	---	---	---	1760	16400	29500	* 48829	---
	4/5/2001	ENER	---	---	---	---	---	---	1560	13400	26300	* 31286	---
	8/14/2001	ENER	---	---	---	---	---	---	1300	12000	28400	* 32742	---
	10/8/2001	ENER	---	---	---	---	---	---	1300	13400	32000	* 38066	---
	10/8/2001	ENER	---	---	---	---	---	---	# 1300	# 13500	# 31500	---	---
Evap Pond 1	2/12/2001	ENER	---	---	---	---	---	---	3600	26700	50700	* 49479	---
	4/5/2001	ENER	---	---	---	---	---	---	3460	22600	49700	* 51111	---
	8/14/2001	ENER	---	---	---	---	---	---	2500	33000	56900	* 57848	---
	10/8/2001	ENER	---	---	---	---	---	---	3700	30000	66500	* 65101	---
Evap Pond 2	2/12/2001	ENER	---	---	---	---	---	---	1870	15800	29000	* 48423	---
	4/5/2001	ENER	---	---	---	---	---	---	1620	12800	27900	* 32117	---
	8/14/2001	ENER	---	---	---	---	---	---	2800	18000	38600	* 38383	---
	10/8/2001	ENER	---	---	---	---	---	---	1870	20000	44800	* 48647	---
W Coll Pond	2/12/2001	ENER	---	---	---	---	---	---	1770	16300	29600	* 46675	---
	4/5/2001	ENER	---	---	---	---	---	---	1370	12100	28200	* 32212	---
	8/14/2001	ENER	---	---	---	---	---	---	1000	8500	22500	* 27257	---
	10/8/2001	ENER	---	---	---	---	---	---	980	9100	16100	* 32591	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC



**TABLE B.3-2 WATER QUALITY ANALYSES FOR THE LINED PONDS**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
E Coll Pond	2/12/2001	ENER	---	61.9	95.4	5.01	---	50.5	< 1.000	---	---	---
	4/5/2001	ENER	---	47.0	88.4	4.90	---	---	---	---	---	---
	8/14/2001	ENER	---	28.0	94.0	2.40	---	---	---	---	---	---
	10/8/2001	ENER	---	50.9	100.0	2.91	---	---	---	---	---	---
	10/8/2001	ENER	---	# 51.2	# 100.0	# 3.02	---	---	---	---	---	---
Evap Pond 1	2/12/2001	ENER	---	140	167	1.34	---	5.50	< 1.000	---	---	---
	4/5/2001	ENER	---	92.0	134	1.40	---	---	---	---	---	---
	8/14/2001	ENER	---	90.0	180	0.660	---	---	---	---	---	---
	10/8/2001	ENER	---	101	180	0.800	---	---	---	---	---	---
Evap Pond 2	2/12/2001	ENER	---	64.0	84.9	1.61	---	19.1	< 1.000	---	---	---
	4/5/2001	ENER	---	50.0	83.2	1.40	---	---	---	---	---	---
	8/14/2001	ENER	---	64.0	130	0.680	---	---	---	---	---	---
	10/8/2001	ENER	---	73.2	130	0.526	---	---	---	---	---	---
W Coll Pond	2/12/2001	ENER	---	65.2	70.8	4.89	---	59.9	< 1.000	---	---	---
	4/5/2001	ENER	---	44.0	104	3.10	---	---	---	---	---	---
	8/14/2001	ENER	---	29.0	91.0	0.480	---	---	---	---	---	---
	10/8/2001	ENER	---	32.9	100.0	0.469	---	---	---	---	---	---

# Signifies Quality Control Sample

**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
1A	10/31/2001	ENER	---	---	---	---	589	---	163	981	3490	* 5298	---
1F	9/24/2001	ENER	---	---	---	---	---	---	---	1500	3560	* 5338	---
1G	9/24/2001	ENER	---	---	---	---	---	---	---	840	2330	* 4017	---
1H	9/24/2001	ENER	---	---	---	---	---	---	---	450	1690	* 3070	---
1J	9/24/2001	ENER	---	---	---	---	---	---	---	840	3620	* 5884	---
1K	9/24/2001	ENER	---	---	---	---	---	---	---	620	1820	* 3069	---
1L	9/24/2001	ENER	---	---	---	---	---	---	---	1250	3160	* 4951	---
1M	9/24/2001	ENER	---	---	---	---	---	---	---	125	647	* 1252	---
	9/24/2001	ENER	---	---	---	---	---	---	---	# 125	# 654	---	---
B	5/30/2001	ENER	---	---	---	---	---	---	---	952	2130	* 3652	---
B2	6/26/2001	ENER	---	---	---	---	---	---	252	1480	3780	---	---
B3	3/13/2001	ENER	---	---	---	---	---	---	412	2640	5050	---	---
B11	2/13/2001	ENER	---	---	---	---	---	---	377	3810	6710	* 10416	---
	9/21/2001	ENER	---	---	---	---	---	---	---	3100	5950	* 8776	---
BC	6/4/2001	ENER	---	---	---	---	---	---	---	1100	2050	* 2878	---
BP	7/23/2001	ENER	240	63.0	4.60	390	416	< 1.000	190	1100	2400	* 3899	0.975
C2	10/30/2001	ENER	---	---	---	---	685	---	181	631	1970	* 3204	---
C5	10/17/2001	ENER	---	---	---	---	---	---	---	670	2070	* 3852	---
C6	6/26/2001	ENER	---	---	---	---	---	---	480	2620	6400	---	---
C7	6/26/2001	ENER	---	---	---	---	---	---	566	1950	5280	---	---
C9	6/26/2001	ENER	---	---	---	---	---	---	612	2440	6280	---	---
C10	6/26/2001	ENER	---	---	---	---	---	---	955	3240	8450	---	---
C11	6/26/2001	ENER	---	---	---	---	---	---	542	3320	7880	---	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
C12	6/26/2001	ENER	---	---	---	---	---	---	295	2160	5200	---	---
C13	4/5/2001	ENER	---	---	---	---	---	---	204	713	1950	---	---
	8/17/2001	ENER	---	---	---	---	# 495	---	---	# 670	---	---	---
	8/17/2001	ENER	---	---	---	---	482	---	---	660	---	---	---
	10/29/2001	ENER	---	---	---	---	850	---	112	237	2170	* 3297	---
C14	4/5/2001	ENER	---	---	---	---	---	---	158	593	1690	---	---
	8/17/2001	ENER	---	---	---	---	# 489	---	---	# 625	---	---	---
	8/17/2001	ENER	---	---	---	---	482	---	---	617	---	---	---
	10/29/2001	HMC	---	---	---	---	---	---	---	---	---	2500	---
D1	5/30/2001	ENER	214	49.6	4.20	331	533	< 1.000	194	772	1980	* 3394	0.965
	5/30/2001	ENER	# 211	# 49.1	# 4.20	# 329	# 522	# < 1.000	# 192	# 769	# 1960	---	# 0.966
DC	6/4/2001	ENER	---	---	---	---	---	---	---	1370	2590	* 3583	---
DQ	1/4/2001	ENER	---	---	---	---	---	---	---	7820	15700	* 22042	---
	3/13/2001	ENER	---	---	---	---	---	---	853	7330	12900	---	---
	7/23/2001	ENER	460	250	11.0	4200	2130	< 1.000	850	7100	14600	* 20348	1.10
DT	6/26/2001	ENER	---	---	---	---	---	---	584	4780	12500	---	---
DV	6/26/2001	ENER	---	---	---	---	---	---	518	4790	11700	---	---
F	7/23/2001	ENER	---	---	---	---	---	---	---	610	1750	* 3081	---
FB	1/4/2001	ENER	---	---	---	---	---	---	---	805	1840	* 3106	---
	10/9/2001	ENER	---	---	---	---	---	---	---	590	1800	* 3006	---
GH	3/12/2001	ENER	---	---	---	---	---	---	---	695	1600	* 3050	---
GV	9/24/2001	ENER	---	---	---	---	---	---	---	644	1840	* 3020	---
I	5/30/2001	ENER	---	---	---	---	---	---	---	544	1540	* 2750	---
K2	1/22/2001	ENER	---	---	---	---	---	---	132	564	1680	* 3086	---
	4/16/2001	ENER	---	---	---	---	---	---	88.0	541	1290	* 2440	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC



**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/)	Ion_B (ratio)
K2	9/19/2001	ENER	---	---	---	---	---	---	70.0	219	939	* 1790	---
K4	1/22/2001	ENER	---	---	---	---	---	---	129	618	1780	* 3370	---
	2/15/2001	ENER	---	---	---	---	---	---	101	565	1550	* 2935	---
	4/18/2001	ENER	---	---	---	---	---	---	120	835	2030	* 3418	---
	4/24/2001	ENER	---	---	---	---	---	---	126	834	2130	---	---
	7/26/2001	ENER	---	---	---	---	---	---	120	630	1800	* 3202	---
	9/19/2001	ENER	---	---	---	---	---	---	164	986	2450	* 4152	---
	10/24/2001	ENER	---	---	---	---	---	---	126	821	2320	* 4019	---
K5	1/23/2001	ENER	---	---	---	---	---	---	171	1340	2970	* 4821	---
	4/18/2001	ENER	---	---	---	---	---	---	161	1470	2820	* 4681	---
	6/25/2001	ENER	---	---	---	---	---	---	155	1210	2940	---	---
	7/26/2001	ENER	---	---	---	---	---	---	160	1200	2820	* 4726	---
	10/24/2001	ENER	---	---	---	---	---	---	120	1650	3770	* 5773	---
K7	1/23/2001	ENER	---	---	---	---	---	---	113	842	2020	* 3742	---
	4/18/2001	ENER	---	---	---	---	---	---	107	885	1960	* 3476	---
	6/25/2001	ENER	---	---	---	---	---	---	92.8	644	1800	---	---
	7/26/2001	ENER	---	---	---	---	---	---	110	620	1700	---	---
	9/19/2001	ENER	---	---	---	---	---	---	105	739	1860	* 3225	---
	10/24/2001	ENER	---	---	---	---	---	---	84.5	653	1820	* 3262	---
K8	1/24/2001	ENER	---	---	---	---	---	---	220	1100	2860	* 5025	---
	4/18/2001	ENER	---	---	---	---	---	---	168	1020	2240	* 3788	---
	6/25/2001	ENER	---	---	---	---	---	---	111	600	1810	---	---
	7/26/2001	ENER	---	---	---	---	---	---	140	690	1900	* 3649	---
	10/24/2001	ENER	---	---	---	---	---	---	127	863	2330	* 3987	---
K9	1/23/2001	ENER	---	---	---	---	---	---	344	2000	4540	* 7406	---
	6/25/2001	ENER	---	---	---	---	---	---	238	1730	3940	---	---
	7/26/2001	ENER	---	---	---	---	---	---	280	1600	3880	* 6208	---

\* Signifies Specific Conductivity from HMC

**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
K10	1/24/2001	ENER	---	---	---	---	---	---	447	2760	5780	* 8666	---
	6/25/2001	ENER	---	---	---	---	---	---	289	1990	5560	---	---
	7/26/2001	ENER	---	---	---	---	---	---	320	1900	4440	* 6637	---
K11	1/24/2001	ENER	---	---	---	---	---	---	364	2660	5530	* 8553	---
	6/25/2001	ENER	---	---	---	---	---	---	249	2070	4620	---	---
KA	1/22/2001	ENER	---	---	---	---	---	---	50.0	189	698	* 1404	---
	4/16/2001	ENER	---	---	---	---	---	---	55.6	213	791	* 1182	---
	7/26/2001	ENER	---	---	---	---	---	---	120	450	1340	* 2250	---
KB	1/22/2001	ENER	---	---	---	---	---	---	42.9	165	665	* 986	---
	1/22/2001	ENER	---	---	---	---	---	---	# 42.0	# 165	# 654	---	---
	4/16/2001	ENER	---	---	---	---	---	---	93.6	396	1110	* 1400	---
	7/26/2001	ENER	---	---	---	---	---	---	120	530	1540	* 2558	---
	9/19/2001	ENER	---	---	---	---	---	---	108	556	1510	* 2588	---
KC	1/22/2001	ENER	---	---	---	---	---	---	43.8	172	640	* 1248	---
	4/16/2001	ENER	---	---	---	---	---	---	78.1	306	977	* 1759	---
	7/26/2001	ENER	---	---	---	---	---	---	140	720	1870	* 3018	---
	7/26/2001	ENER	---	---	---	---	---	---	# 140	# 710	# 1870	---	---
	9/19/2001	ENER	---	---	---	---	---	---	130	724	1780	* 2972	---
	10/18/2001	ENER	---	---	---	---	---	---	77.3	598	1610	* 2831	---
	10/18/2001	ENER	---	---	---	---	---	---	# 78.2	# 594	# 1600	---	---
	12/13/2001	ENER	---	---	---	---	---	---	88.0	519	1380	* 2458	---
KD	1/22/2001	ENER	---	---	---	---	---	---	62.2	252	897	* 1842	---
	4/16/2001	ENER	---	---	---	---	---	---	73.9	254	944	* 1709	---
	4/16/2001	ENER	---	---	---	---	---	---	# 75.3	# 262	# 944	---	---
KE	1/22/2001	ENER	---	---	---	---	---	---	78.3	268	908	* 1719	---
KEB	1/22/2001	ENER	---	---	---	---	---	---	48.0	171	681	* 1335	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
KEB	3/1/2001	ENER	---	---	---	---	---	---	71.2	217	788	* 1511	---
	5/10/2001	ENER	---	---	---	---	---	---	77.6	268	989	* 1841	---
	6/25/2001	ENER	---	---	---	---	---	---	87.2	327	1090	---	---
	7/26/2001	ENER	---	---	---	---	---	---	59.0	180	745	* 1931	---
	9/19/2001	ENER	---	---	---	---	---	---	112	475	1340	* 2344	---
KF	1/25/2001	ENER	---	---	---	---	---	---	76.2	258	794	* 1647	---
	1/25/2001	ENER	---	---	---	---	---	---	# 75.2	# 259	# 826	---	---
	4/18/2001	ENER	---	---	---	---	---	---	40.8	185	703	* 1326	---
	7/26/2001	ENER	---	---	---	---	---	---	36.0	130	623	* 1175	---
	10/18/2001	ENER	---	---	---	---	---	---	25.1	173	641	* 1231	---
KN	9/19/2001	ENER	---	---	---	---	---	---	43.4	147	575	* 1030	---
KZ	1/22/2001	ENER	---	---	---	---	---	---	41.2	177	742	* 1388	---
	1/22/2001	ENER	---	---	---	---	---	---	# 37.8	# 180	# 719	---	---
	7/26/2001	ENER	---	---	---	---	---	---	86.0	320	1040	* 1477	---
L	4/17/2001	ENER	---	---	---	---	---	---	---	704	1670	* 2868	---
L5	4/17/2001	ENER	---	---	---	---	---	---	---	570	1470	* 2648	---
	6/25/2001	ENER	---	---	---	---	---	---	137	504	2970	---	---
	9/17/2001	ENER	---	---	---	---	---	---	---	518	1600	* 2909	---
L6	9/21/2001	ENER	---	---	---	---	---	---	---	460	1370	* 2510	---
	9/21/2001	ENER	---	---	---	---	---	---	---	# 460	# 1370	---	---
L7	4/17/2001	ENER	---	---	---	---	---	---	---	1090	2380	* 3964	---
	6/25/2001	ENER	---	---	---	---	---	---	232	919	2360	---	---
	9/17/2001	ENER	---	---	---	---	---	---	---	851	2250	* 3727	---
L8	4/17/2001	ENER	---	---	---	---	---	---	---	744	1740	* 3172	---
	6/25/2001	ENER	---	---	---	---	---	---	161	613	1730	---	---
	9/17/2001	ENER	---	---	---	---	---	---	---	609	1740	* 3162	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC



**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
L9	4/17/2001	ENER	---	---	---	---	---	---	---	570	1460	* 2678	---
	6/25/2001	ENER	---	---	---	---	---	---	139	462	1460	---	---
	9/17/2001	ENER	---	---	---	---	---	---	---	529	1640	* 3063	---
L10	4/17/2001	ENER	---	---	---	---	---	---	---	532	1480	* 2664	---
	4/17/2001	ENER	---	---	---	---	---	---	---	# 548	# 1480	---	---
	6/25/2001	ENER	---	---	---	---	---	---	133	417	1410	---	---
	9/17/2001	ENER	---	---	---	---	---	---	---	468	1510	* 2756	---
M3	6/26/2001	ENER	---	---	---	---	---	---	270	1790	4800	---	---
M5	2/15/2001	ENER	---	---	---	---	---	---	201	951	2130	* 3646	---
	8/14/2001	ENER	223	51.7	4.04	331	519	< 1.000	187	743	1810	* 3475	1.02
MO	3/12/2001	ENER	---	---	---	---	---	---	---	1090	2210	* 3651	---
	10/9/2001	ENER	---	---	---	---	---	---	---	911	2380	* 3772	---
MQ	10/22/2001	ENER	---	---	---	---	---	---	---	1180	2940	* 4425	---
MR	10/22/2001	ENER	---	---	---	---	---	---	---	900	2370	* 3857	---
MS	10/22/2001	ENER	---	---	---	---	---	---	---	616	1890	* 3081	---
MT	10/22/2001	ENER	---	---	---	---	---	---	---	1070	2540	* 4078	---
MU	10/22/2001	ENER	---	---	---	---	---	---	---	1630	4220	* 6056	---
MX	10/18/2001	ENER	---	---	---	---	---	---	---	606	1840	* 3005	---
MY	10/18/2001	ENER	---	---	---	---	---	---	---	600	1860	* 3014	---
N	6/4/2001	ENER	---	---	---	---	---	---	---	1240	2350	* 3303	---
	8/29/2001	ENER	---	---	---	---	---	---	---	1200	2380	* 3389	---
NA	9/9/2001	ENER	---	---	---	---	---	---	121	1130	2430	* 4104	---
NB	9/10/2001	ENER	---	---	---	---	---	---	1320	11700	26500	* 32406	---
NC	8/29/2001	ENER	---	---	---	---	---	---	---	640	1280	* 2149	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
NE5	2/15/2001	ENER	4.70	5.30	9.00	1730	988	557	169	1900	4830	* 8818	0.963
NW5	2/20/2001	ENER	3.10	2.60	35.3	9160	7930	3390	568	8000	25000	* 35443	0.939
O	8/29/2001	ENER	—	—	—	—	—	—	—	900	1970	* 3218	—
P	7/23/2001	ENER	238	51.2	5.00	239	243	< 1.000	53.8	983	1870	* 2883	1.02
P3	3/8/2001	ENER	274	55.6	6.20	265	237	< 1.000	59.9	1070	1760	* 3048	1.07
	3/8/2001	ENER	# 273	# 55.6	# 6.30	# 265	# 237	# < 1.000	# 59.7	# 1080	# 2010	—	# 1.06
P4	3/8/2001	ENER	202	36.8	3.70	234	188	< 1.000	47.3	848	1360	* 2410	1.06
PM	8/14/2001	ENER	—	—	—	—	—	—	—	650	1880	* 3265	—
S	5/10/2001	ENER	—	—	—	—	—	—	—	8020	20800	* 27671	—
S2	1/4/2001	ENER	—	—	—	—	—	—	—	2110	4310	* 6652	—
	7/23/2001	ENER	—	—	—	—	—	—	—	1900	4140	* 6070	—
S3	7/23/2001	ENER	210	58.0	6.00	840	684	< 1.000	250	1500	3400	* 5467	1.05
S4	3/12/2001	ENER	—	—	—	—	—	—	—	1990	3560	* 5073	—
	7/23/2001	ENER	410	86.0	6.50	530	426	< 1.000	150	1700	3280	* 4818	1.09
S5	6/25/2001	ENER	—	—	—	—	—	—	278	3000	5970	—	—
S11	10/17/2001	ENER	—	—	—	—	—	—	—	1050	2440	* 3748	—
S12	3/19/2001	ENER	—	—	—	—	—	—	214	1040	2180	* 3566	—
SA	6/25/2001	ENER	—	—	—	—	—	—	267	1780	4390	—	—
SC	6/25/2001	ENER	—	—	—	—	—	—	464	5060	9750	—	—
SE	3/19/2001	ENER	—	—	—	—	—	—	161	1390	2670	* 4067	—
SE4	3/19/2001	ENER	—	—	—	—	—	—	31.8	102	401	* 811	—
SQ	6/25/2001	ENER	—	—	—	—	—	—	406	4250	9540	—	—
SS	6/25/2001	ENER	—	—	—	—	—	—	319	3020	5990	—	—

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
ST	6/25/2001	ENER	---	---	---	---	---	---	204	1210	3070	---	---
T	3/1/2001	ENER	---	---	---	---	---	---	---	169	3470	* 5545	---
	5/7/2001	ENER	---	---	---	---	---	---	---	830	2190	* 3754	---
	6/26/2001	ENER	---	---	---	---	---	---	167	834	2340	---	---
	9/21/2001	ENER	---	---	---	---	---	---	160	839	2220	* 3860	---
T2	3/13/2001	ENER	---	---	---	---	---	---	447	3790	7400	* 12451	---
TA	2/14/2001	ENER	---	---	---	---	---	---	100.0	472	1370	* 2772	---
	2/14/2001	ENER	---	---	---	---	---	---	# 102	# 464	# 1390	---	---
	6/26/2001	ENER	---	---	---	---	---	---	70.8	281	1060	---	---
	9/21/2001	ENER	---	---	---	---	---	---	64.7	309	1080	* 2081	---
TB	2/13/2001	ENER	---	---	---	---	---	---	43.4	194	724	* 1396	---
	3/13/2001	ENER	---	---	---	---	---	---	121	1030	2140	---	---
	9/19/2001	ENER	---	---	---	---	---	---	34.8	126	604	* 1092	---
W	10/17/2001	ENER	---	---	---	---	---	---	---	608	1800	* 3016	---
	10/17/2001	ENER	---	---	---	---	---	---	---	# 607	# 1800	---	---
WN4	2/20/2001	ENER	11.7	30.6	13.1	3750	2590	312	666	4850	11100	* 17698	0.965
X	2/13/2001	ENER	---	---	---	---	---	---	75.6	139	547	* 1038	---
	4/16/2001	ENER	---	---	---	---	---	---	33.1	108	495	* 965	---
	4/16/2001	ENER	---	---	---	---	---	---	# 33.1	# 111	# 509	---	---
	7/25/2001	ENER	57.6	16.3	2.60	68.6	312	< 1.000	32.3	63.0	427	* 796	0.986
	7/25/2001	ENER	# 57.5	# 16.3	# 2.50	# 65.5	# 309	# < 1.000	# 31.4	# 61.0	# 417	---	# 0.982
	10/10/2001	ENER	---	---	---	---	---	---	14.2	13.5	263	* 477	---
X13	8/28/2001	ENER	---	---	---	---	813	---	---	990	---	---	---
X15	8/22/2001	ENER	---	---	---	---	604	---	---	1780	---	---	---
	10/30/2001	ENER	---	---	---	---	618	---	255	1960	4370	* 5698	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC



**TABLE B.4-1 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
X16	8/22/2001	ENER	---	---	---	---	631	---	---	1650	---	---	---
x20	10/31/2001	ENER	---	---	---	---	440	---	322	2060	4760	* 6902	---
X22	10/30/2001	ENER	---	---	---	---	670	---	106	282	2130	* 2796	---
X25	4/5/2001	ENER	---	---	---	---	---	---	208	979	2430	---	---
	8/22/2001	ENER	---	---	---	---	387	---	---	1030	---	---	---
	10/30/2001	ENER	---	---	---	---	384	---	140	703	2800	* 4500	---
Y	2/13/2001	ENER	---	---	---	---	---	---	48.3	286	886	* 1701	---
	4/16/2001	ENER	---	---	---	---	---	---	49.3	208	784	* 1446	---
	6/25/2001	ENER	---	---	---	---	---	---	53.4	202	795	---	---
	7/25/2001	ENER	55.0	15.4	3.33	214	398	< 1.000	59.4	233	854	* 1650	1.02
	9/19/2001	ENER	---	---	---	---	---	---	76.8	364	1080	* 1948	---
	10/10/2001	ENER	---	---	---	---	---	---	76.1	341	1150	* 2081	---

\* Signifies Specific Conductivity from HMC

**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
1A	10/31/2001	ENER	—	3.71	4.40	0.471	23.3	—	—	—	—	—
1F	9/24/2001	ENER	—	17.3	0.0300	0.797	—	—	—	—	—	—
1G	9/24/2001	ENER	—	0.0561	< 0.0300	0.540	—	—	—	—	—	—
1H	9/24/2001	ENER	—	0.630	< 0.0300	0.844	—	—	—	—	—	—
1J	9/24/2001	ENER	—	5.12	1.29	6.29	—	—	—	—	—	—
1K	9/24/2001	ENER	—	2.58	4.91	0.525	—	—	—	—	—	—
1L	9/24/2001	ENER	—	0.0804	0.160	1.12	—	—	—	—	—	—
1M	9/24/2001	ENER	—	0.435	0.460	0.154	—	—	—	—	—	—
	9/24/2001	ENER	—	# 0.431	# 0.450	# 0.162	—	—	—	—	—	—
B	5/30/2001	ENER	—	0.390	< 0.0300	0.316	—	—	—	—	—	—
B2	6/26/2001	ENER	—	7.82	9.74	0.499	—	—	—	—	—	—
B3	3/13/2001	ENER	—	13.3	17.7	0.615	—	—	—	—	—	—
B11	2/13/2001	ENER	—	13.1	20.0	1.33	—	—	—	—	—	—
	9/21/2001	ENER	—	13.1	19.8	1.30	—	—	—	—	—	—
BC	6/4/2001	ENER	—	0.221	0.0513	< 0.0050	—	—	—	—	—	—
BP	7/23/2001	ENER	7.80	1.30	0.190	0.340	5.30	< 0.200	1.20	—	< 0.0100	0.200
C2	10/30/2001	ENER	—	0.482	0.160	0.0330	0.800	—	—	—	—	—
C5	10/17/2001	ENER	—	0.920	1.18	0.0260	—	—	—	—	—	—
C6	6/26/2001	ENER	—	16.7	29.1	1.59	—	—	—	—	—	—
C7	6/26/2001	ENER	—	13.2	21.7	1.44	—	—	—	—	—	—
C9	6/26/2001	ENER	—	18.9	23.7	2.92	—	—	—	—	—	—
C10	6/26/2001	ENER	—	40.8	49.6	6.76	—	—	—	—	—	—
C11	6/26/2001	ENER	—	37.1	35.1	6.74	—	—	—	—	—	—

# Signifies Quality Control Sample

**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
C12	6/26/2001	ENER	---	17.5	16.8	2.69	---	---	---	---	---	---
C13	4/5/2001	ENER	---	0.202	0.110	0.0200	---	---	---	---	---	---
	8/17/2001	ENER	---	# 0.292	# 0.150	# 0.0480	# 0.720	---	---	---	---	---
	8/17/2001	ENER	---	0.294	0.160	0.0500	0.680	---	---	---	---	---
	10/29/2001	ENER	---	0.0570	< 0.0300	0.0120	0.300	---	---	---	---	---
C14	4/5/2001	ENER	---	0.818	0.950	0.0660	---	---	---	---	---	---
	8/17/2001	ENER	---	# 0.476	# 0.520	# 0.117	# 2.80	---	---	---	---	---
	8/17/2001	ENER	---	0.479	0.510	0.115	2.80	---	---	---	---	---
D1	5/30/2001	ENER	7.71	1.37	0.980	0.114	2.69	< 0.200	< 1.000	---	< 0.0100	0.400
	5/30/2001	ENER	# 7.95	# 1.34	# 0.970	# 0.111	# 2.67	# < 0.200	# < 1.000	---	# < 0.0100	# 0.500
DC	6/4/2001	ENER	---	0.0979	---	0.0670	---	---	---	---	---	---
DQ	1/4/2001	ENER	---	57.0	55.7	0.990	---	---	---	---	---	---
	3/13/2001	ENER	---	64.0	55.5	0.890	---	---	---	---	---	---
	7/23/2001	ENER	7.70	42.0	57.0	1.10	11.8	< 0.200	2.40	---	0.0300	< 0.200
DT	6/26/2001	ENER	---	32.9	44.9	1.21	---	---	---	---	---	---
DV	6/26/2001	ENER	---	45.0	15.7	0.865	---	---	---	---	---	---
F	7/23/2001	ENER	---	0.110	< 0.0300	0.0100	---	---	---	---	---	---
FB	1/4/2001	ENER	---	0.144	0.298	0.0940	---	---	---	---	---	---
	10/9/2001	ENER	---	0.130	< 0.0300	0.0799	---	---	---	---	---	---
GH	3/12/2001	ENER	---	0.0400	< 0.0300	< 0.0050	---	---	---	---	---	---
GV	9/24/2001	ENER	---	0.0290	0.0110	0.0120	---	---	---	---	---	---
I	5/30/2001	ENER	---	0.123	---	0.0210	---	---	---	---	---	---
K2	1/22/2001	ENER	---	1.83	3.81	0.216	---	---	---	---	---	---
	4/16/2001	ENER	---	0.698	2.54	0.115	---	---	---	---	---	---
	9/19/2001	ENER	---	0.668	3.57	0.184	---	---	---	---	---	---

# Signifies Quality Control Sample



**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
K4	1/22/2001	ENER	---	3.10	6.80	1.19	---	---	---	---	---	---
	2/15/2001	ENER	---	1.86	4.95	0.684	---	---	---	---	---	---
	4/18/2001	ENER	---	2.61	6.46	0.823	---	---	---	---	---	---
	4/24/2001	ENER	---	2.68	7.35	0.908	---	---	---	---	---	---
	7/26/2001	ENER	---	2.80	6.50	1.60	---	---	---	---	---	---
	9/19/2001	ENER	---	4.35	11.0	1.68	---	---	---	---	---	---
	10/24/2001	ENER	---	5.38	10.9	2.13	---	---	---	---	---	---
K5	1/23/2001	ENER	---	4.27	15.2	1.21	---	---	---	---	---	---
	4/18/2001	ENER	---	3.30	11.9	0.838	---	---	---	---	---	---
	6/25/2001	ENER	---	3.35	12.8	1.01	---	---	---	---	---	---
	7/26/2001	ENER	---	3.10	12.0	0.940	---	---	---	---	---	---
	10/24/2001	ENER	---	2.60	11.9	0.596	---	---	---	---	---	---
K7	1/23/2001	ENER	---	2.35	8.44	0.790	---	---	---	---	---	---
	4/18/2001	ENER	---	2.08	6.72	0.800	---	---	---	---	---	---
	6/25/2001	ENER	---	2.06	6.79	0.826	---	---	---	---	---	---
	7/26/2001	ENER	---	1.80	5.80	0.740	---	---	---	---	---	---
	9/19/2001	ENER	---	1.90	6.70	0.890	---	---	---	---	---	---
	10/24/2001	ENER	---	2.02	6.58	0.768	---	---	---	---	---	---
K8	1/24/2001	ENER	---	6.82	24.4	3.00	---	---	---	---	---	---
	4/18/2001	ENER	---	3.66	17.7	1.60	---	---	---	---	---	---
	6/25/2001	ENER	---	3.44	16.3	1.42	---	---	---	---	---	---
	7/26/2001	ENER	---	3.20	14.0	1.20	---	---	---	---	---	---
	10/24/2001	ENER	---	3.38	11.3	1.32	---	---	---	---	---	---
K9	1/23/2001	ENER	---	8.41	20.3	2.02	---	---	---	---	---	---
	6/25/2001	ENER	---	6.08	19.0	1.25	---	---	---	---	---	---
	7/26/2001	ENER	---	4.60	16.0	0.970	---	---	---	---	---	---

**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
K10	1/24/2001	ENER	---	13.6	29.9	2.73	---	---	---	---	---	---
	6/25/2001	ENER	---	8.71	24.2	1.08	---	---	---	---	---	---
	7/26/2001	ENER	---	8.70	23.0	0.930	---	---	---	---	---	---
K11	1/24/2001	ENER	---	11.0	24.4	1.55	---	---	---	---	---	---
	6/25/2001	ENER	---	8.93	24.9	0.705	---	---	---	---	---	---
KA	1/22/2001	ENER	---	0.318	0.570	0.0140	---	---	---	---	---	---
	4/16/2001	ENER	---	0.299	0.668	0.0390	---	---	---	---	---	---
	7/26/2001	ENER	---	0.810	3.00	0.180	---	---	---	---	---	---
KB	1/22/2001	ENER	---	0.217	0.596	0.0200	---	---	---	---	---	---
	1/22/2001	ENER	---	# 0.211	# 0.635	# 0.0203	---	---	---	---	---	---
	4/16/2001	ENER	---	0.443	1.43	0.126	---	---	---	---	---	---
	7/26/2001	ENER	---	1.30	4.50	0.190	---	---	---	---	---	---
	9/19/2001	ENER	---	1.39	4.73	0.190	---	---	---	---	---	---
KC	1/22/2001	ENER	---	0.164	0.520	0.0270	---	---	---	---	---	---
	4/16/2001	ENER	---	0.561	1.50	0.114	---	---	---	---	---	---
	7/26/2001	ENER	---	1.000	2.50	0.140	---	---	---	---	---	---
	7/26/2001	ENER	---	# 0.990	# 2.50	# 0.140	---	---	---	---	---	---
	9/19/2001	ENER	---	1.17	2.67	0.161	---	---	---	---	---	---
	10/18/2001	ENER	---	0.823	2.53	0.0920	---	---	---	---	---	---
	10/18/2001	ENER	---	# 0.809	# 2.46	# 0.0910	---	---	---	---	---	---
	12/13/2001	ENER	---	0.790	2.54	0.148	---	---	---	---	---	---
KD	1/22/2001	ENER	---	0.380	2.10	0.0510	---	---	---	---	---	---
	4/16/2001	ENER	---	0.330	1.98	0.0810	---	---	---	---	---	---
	4/16/2001	ENER	---	# 0.328	# 1.98	# 0.0770	---	---	---	---	---	---
KE	1/22/2001	ENER	---	0.190	0.792	0.0260	---	---	---	---	---	---
KEB	1/22/2001	ENER	---	0.556	1.12	0.0300	---	---	---	---	---	---

# Signifies Quality Control Sample

**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
KEB	3/1/2001	ENER	—	0.580	1.27	0.0410	—	—	—	—	—	—
	5/10/2001	ENER	—	0.620	1.45	0.0840	—	—	—	—	—	—
	6/25/2001	ENER	—	0.683	1.82	0.112	—	—	—	—	—	—
	7/26/2001	ENER	—	0.200	0.410	0.0090	—	—	—	—	—	—
	9/19/2001	ENER	—	1.000	2.14	0.132	—	—	—	—	—	—
KF	1/25/2001	ENER	—	0.226	0.389	0.0140	—	—	—	—	—	—
	1/25/2001	ENER	—	# 0.256	# 0.400	# 0.0140	—	—	—	—	—	—
	4/18/2001	ENER	—	0.180	0.400	0.0120	—	—	—	—	—	—
	7/26/2001	ENER	—	0.130	0.330	0.0100	—	—	—	—	—	—
	10/18/2001	ENER	—	0.139	0.270	0.0140	—	—	—	—	—	—
KN	9/19/2001	ENER	—	0.281	1.10	0.0370	—	—	—	—	—	—
KZ	1/22/2001	ENER	—	0.518	1.18	0.0143	—	—	—	—	—	—
	1/22/2001	ENER	—	# 0.488	# 1.25	# 0.0170	—	—	—	—	—	—
	7/26/2001	ENER	—	0.610	1.60	0.0900	—	—	—	—	—	—
L	4/17/2001	ENER	—	1.73	1.40	0.0330	—	—	—	—	—	—
L5	4/17/2001	ENER	—	2.32	4.78	0.310	—	—	—	—	—	—
	6/25/2001	ENER	—	1.93	3.35	0.328	—	—	—	—	—	—
	9/17/2001	ENER	—	1.60	2.60	0.462	—	—	—	—	—	—
L6	9/21/2001	ENER	—	1.21	2.83	0.804	—	—	—	—	—	—
	9/21/2001	ENER	—	# 1.19	# 2.82	# 0.796	—	—	—	—	—	—
L7	4/17/2001	ENER	—	2.49	8.10	2.95	—	—	—	—	—	—
	6/25/2001	ENER	—	2.38	8.46	3.50	—	—	—	—	—	—
	9/17/2001	ENER	—	1.69	6.04	2.85	—	—	—	—	—	—
L8	4/17/2001	ENER	—	1.52	2.61	0.236	—	—	—	—	—	—
	6/25/2001	ENER	—	1.48	2.40	0.287	—	—	—	—	—	—
	9/17/2001	ENER	—	1.20	1.95	0.296	—	—	—	—	—	—

# Signifies Quality Control Sample



**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
L9	4/17/2001	ENER	---	1.47	3.17	0.0948	---	---	---	---	---	---
	6/25/2001	ENER	---	1.44	2.87	0.0920	---	---	---	---	---	---
	9/17/2001	ENER	---	1.42	2.18	0.0840	---	---	---	---	---	---
L10	4/17/2001	ENER	---	1.51	1.96	0.0480	---	---	---	---	---	---
	4/17/2001	ENER	---	# 1.48	# 1.82	# 0.0430	---	---	---	---	---	---
	6/25/2001	ENER	---	1.45	2.03	0.0431	---	---	---	---	---	---
	9/17/2001	ENER	---	1.29	1.67	0.0400	---	---	---	---	---	---
M3	6/26/2001	ENER	---	11.2	14.8	0.581	---	---	---	---	---	---
M5	2/15/2001	ENER	---	1.99	1.25	0.204	---	---	---	---	---	---
	8/14/2001	ENER	7.40	2.30	1.70	0.0770	2.38	< 0.200	< 1.000	---	< 0.0100	0.300
MO	3/12/2001	ENER	---	0.280	< 0.0300	0.0600	---	---	---	---	---	---
	10/9/2001	ENER	---	0.284	< 0.0300	0.0673	---	---	---	---	---	---
MQ	10/22/2001	ENER	---	1.55	0.360	0.335	---	---	---	---	---	---
MR	10/22/2001	ENER	---	0.499	---	0.132	7.80	---	---	---	---	---
MS	10/22/2001	ENER	---	0.0860	< 0.0300	0.0330	---	---	---	---	---	---
MT	10/22/2001	ENER	---	0.306	---	0.181	12.3	---	---	---	---	---
MU	10/22/2001	ENER	---	0.110	---	0.100	114	---	---	---	---	---
MX	10/18/2001	ENER	---	0.0280	< 0.0300	0.0120	---	---	---	---	---	---
MY	10/18/2001	ENER	---	0.0210	< 0.0300	0.0210	---	---	---	---	---	---
N	6/4/2001	ENER	---	0.0843	< 0.0300	0.112	---	---	---	---	---	---
	8/29/2001	ENER	---	0.0790	< 0.0300	0.0920	---	---	---	---	---	---
NA	9/9/2001	ENER	---	2.68	6.16	0.0867	---	---	---	---	---	---
NB	9/10/2001	ENER	---	62.1	93.8	0.510	---	---	---	---	---	---
NC	8/29/2001	ENER	---	0.0130	< 0.0300	0.0740	---	---	---	---	---	---

# Signifies Quality Control Sample

**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
NE5	2/15/2001	ENER	10.00	6.12	15.8	0.136	1.65	34.4	---	---	---	---
NW5	2/20/2001	ENER	9.88	51.5	165	0.277	3.13	314	---	---	---	---
O	8/29/2001	ENER	---	0.0320	< 0.0300	0.240	---	---	---	---	---	---
P	7/23/2001	ENER	7.90	0.0300	< 0.0300	0.170	8.40	0.400	---	---	---	---
P3	3/8/2001	ENER	7.76	0.0294	0.0331	0.161	9.92	0.300	---	---	---	---
	3/8/2001	ENER	# 7.71	# 0.0296	# < 0.0300	# 0.180	# 9.95	# < 0.200	---	---	---	---
P4	3/8/2001	ENER	7.76	0.0236	< 0.0300	0.110	4.48	< 0.200	---	---	---	---
PM	8/14/2001	ENER	---	0.230	0.150	0.0260	---	---	---	---	---	---
S	5/10/2001	ENER	---	59.0	84.2	3.31	---	---	---	---	---	---
S2	1/4/2001	ENER	---	14.5	13.5	0.800	---	---	---	---	---	---
	7/23/2001	ENER	---	15.0	11.0	0.940	---	---	---	---	---	---
S3	7/23/2001	ENER	7.90	9.00	7.60	0.0380	2.02	< 0.200	1.40	---	< 0.0100	0.200
S4	3/12/2001	ENER	---	3.38	0.0550	< 0.0050	---	---	---	---	---	---
	7/23/2001	ENER	7.90	2.90	0.540	0.0130	< 0.100	0.700	< 1.000	---	< 0.0100	< 0.200
S5	6/25/2001	ENER	---	12.0	19.5	0.504	---	---	---	---	---	---
S11	10/17/2001	ENER	---	0.0170	---	0.390	52.4	---	---	---	---	---
S12	3/19/2001	ENER	---	1.53	0.521	0.352	---	---	---	---	---	---
SA	6/25/2001	ENER	---	10.8	14.5	0.432	---	---	---	---	---	---
SC	6/25/2001	ENER	---	27.4	43.8	1.31	---	---	---	---	---	---
SE	3/19/2001	ENER	---	4.82	0.892	0.0640	---	---	---	---	---	---
SE4	3/19/2001	ENER	---	0.331	0.168	0.0577	---	---	---	---	---	---
SQ	6/25/2001	ENER	---	22.3	41.8	1.08	---	---	---	---	---	---
SS	6/25/2001	ENER	---	14.6	24.9	0.735	---	---	---	---	---	---

# Signifies Quality Control Sample

**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
ST	6/25/2001	ENER	---	5.33	6.50	0.298	---	---	---	---	---	---
T	3/1/2001	ENER	---	11.6	16.8	1.75	---	---	---	---	---	---
	5/7/2001	ENER	---	9.36	13.9	0.933	---	---	---	---	---	---
	6/26/2001	ENER	---	5.90	8.82	1.05	---	---	---	---	---	---
	9/21/2001	ENER	---	5.10	6.92	1.16	---	---	---	---	---	---
T2	3/13/2001	ENER	---	13.6	26.1	0.689	---	---	---	---	---	---
TA	2/14/2001	ENER	---	2.54	5.36	1.31	---	---	---	---	---	---
	2/14/2001	ENER	---	# 2.52	# 5.29	# 1.31	---	---	---	---	---	---
	6/26/2001	ENER	---	2.05	3.43	1.26	---	---	---	---	---	---
	9/21/2001	ENER	---	1.86	2.41	1.04	---	---	---	---	---	---
TB	2/13/2001	ENER	---	0.880	1.08	0.186	---	---	---	---	---	---
	3/13/2001	ENER	---	4.44	5.36	0.710	---	---	---	---	---	---
	9/19/2001	ENER	---	0.728	1.000	0.112	---	---	---	---	---	---
W	10/17/2001	ENER	---	0.0710	< 0.0300	0.0360	---	---	---	---	---	---
	10/17/2001	ENER	---	# 0.0700	# < 0.0300	# 0.0350	---	---	---	---	---	---
WN4	2/20/2001	ENER	9.33	17.4	38.8	0.130	7.27	5.80	---	---	---	---
X	2/13/2001	ENER	---	0.0523	0.122	0.0060	---	< 0.200	< 1.000	---	---	---
	4/16/2001	ENER	---	0.0435	0.131	0.0130	---	---	---	---	---	---
	4/16/2001	ENER	---	# 0.0456	# 0.134	# 0.0110	---	---	---	---	---	---
	7/25/2001	ENER	8.10	0.0450	0.150	< 0.0050	1.20	< 0.200	1.30	< 0.0500	0.0100	< 0.200
	7/25/2001	ENER	# 8.00	# 0.0440	# 0.160	# 0.0070	# 1.12	# 0.200	# < 1.000	# < 0.0500	# 0.0100	# 0.200
	10/10/2001	ENER	---	0.0210	0.178	< 0.0050	---	---	---	---	---	---
X13	8/28/2001	ENER	---	2.91	0.800	0.0750	0.760	---	---	---	---	---
X15	8/22/2001	ENER	---	11.0	1.24	0.674	6.80	---	---	---	---	---
	10/30/2001	ENER	---	14.5	0.410	0.733	6.50	---	---	---	---	---

# Signifies Quality Control Sample



**TABLE B.4-2 WATER QUALITY ANALYSES FOR HOMESTAKE'S ALLUVIAL WELLS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
X16	8/22/2001	ENER	—	14.5	1.75	0.631	5.40	—	—	—	—	—
x20	10/31/2001	ENER	—	5.00	6.00	0.865	74.0	—	—	—	—	—
X22	10/30/2001	ENER	—	1.20	1.28	0.166	0.500	—	—	—	—	—
X25	4/5/2001	ENER	—	6.82	1.35	0.865	—	—	—	—	—	—
	8/22/2001	ENER	—	7.10	0.860	0.697	9.15	—	—	—	—	—
	10/30/2001	ENER	—	4.51	0.420	0.437	9.00	—	—	—	—	—
Y	2/13/2001	ENER	—	0.749	1.89	0.0580	—	< 0.200	< 1.000	—	—	—
	4/16/2001	ENER	—	0.555	1.46	0.0450	—	—	—	—	—	—
	6/25/2001	ENER	—	0.510	1.45	0.0591	—	—	—	—	—	—
	7/25/2001	ENER	8.20	0.470	1.50	0.0700	2.00	< 0.200	< 1.000	< 0.0500	0.0100	< 0.200
	9/19/2001	ENER	—	0.620	1.90	0.110	—	—	—	—	—	—
	10/10/2001	ENER	—	0.671	2.10	0.118	—	—	—	—	—	—

**TABLE B.4-3 WATER QUALITY ANALYSES FOR THE SUBDIVISION ALLUVIAL WELLS**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
0446	6/6/2001	ENER	---	---	---	---	---	---	---	714	1870	* 3197	---
0453	6/5/2001	ENER	---	---	---	---	---	---	---	672	1850	* 2781	---
0490	6/5/2001	ENER	---	---	---	---	---	---	---	702	1890	* 3156	---
0491	8/22/2001	ENER	---	---	---	---	---	---	---	1200	3270	* 5173	---
0492	6/5/2001	ENER	---	---	---	---	---	---	---	759	1870	* 3122	---
0496	8/20/2001	ENER	---	---	---	---	---	---	---	640	1880	* 2907	---
	8/20/2001	ENER	---	---	---	---	---	---	---	# 630	# 1880	---	---
0497	8/20/2001	ENER	---	---	---	---	---	---	---	680	2050	* 3300	---
0688	6/5/2001	ENER	---	---	---	---	---	---	---	734	1820	* 3063	---
0802	6/5/2001	ENER	---	---	---	---	---	---	---	520	1390	* 2576	---
0804	5/10/2001	ENER	---	---	---	---	---	---	---	717	1980	* 3243	---
0844	7/24/2001	ENER	---	---	---	---	---	---	---	869	2360	* 4090	---
0845	7/24/2001	ENER	---	---	---	---	---	---	---	620	1930	* 3518	---
CW44	5/4/2001	ENER	---	---	---	---	---	---	---	# 718	# 2010	---	---
	5/4/2001	ENER	---	---	---	---	---	---	---	723	2010	* 3562	---
	9/17/2001	ENER	---	---	---	---	---	---	---	695	1950	* 3334	---
SUB1	4/16/2001	ENER	---	---	---	---	---	---	---	909	2100	* 3390	---
SUB2	6/5/2001	ENER	---	---	---	---	---	---	---	693	1950	* 3174	---
SUB3	5/2/2001	ENER	---	---	---	---	---	---	---	1440	2870	* 4159	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-4 WATER QUALITY ANALYSES FOR THE SUBDIVISION ALLUVIAL WELLS**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
0446	6/6/2001	ENER	---	0.0670	< 0.0300	0.0170	---	---	---	---	---	---
0453	6/5/2001	ENER	---	0.0200	< 0.0300	0.0130	---	---	---	---	---	---
0490	6/5/2001	ENER	---	0.245	0.109	0.0270	---	---	---	---	---	---
0491	8/22/2001	ENER	---	0.660	0.0600	0.0960	---	---	---	---	---	---
0492	6/5/2001	ENER	---	0.248	< 0.0300	0.0400	---	---	---	---	---	---
0496	8/20/2001	ENER	---	0.520	---	0.0750	---	---	---	---	---	---
	8/20/2001	ENER	---	# 0.520	---	# 0.0800	---	---	---	---	---	---
0497	8/20/2001	ENER	---	0.860	---	0.0590	---	---	---	---	---	---
0688	6/5/2001	ENER	---	0.0550	< 0.0300	0.0190	---	---	---	---	---	---
0802	6/5/2001	ENER	---	1.96	< 0.0300	0.0430	---	---	---	---	---	---
0804	5/10/2001	ENER	---	0.0540	< 0.0300	0.0720	---	---	---	---	---	---
0844	7/24/2001	ENER	---	0.0700	< 0.0300	0.0240	---	---	---	---	---	---
0845	7/24/2001	ENER	---	0.0660	---	0.0160	---	---	---	---	---	---
CW44	5/4/2001	ENER	---	# 1.01	---	# 0.0730	---	---	---	---	---	---
	5/4/2001	ENER	---	1.01	---	0.0730	---	---	---	---	---	---
	9/17/2001	ENER	---	0.848	---	0.103	---	---	---	---	---	---
SUB1	4/16/2001	ENER	---	0.260	< 0.0300	0.0305	---	---	---	---	---	---
SUB2	6/5/2001	ENER	---	0.166	< 0.0300	0.0080	---	---	---	---	---	---
SUB3	5/2/2001	ENER	---	0.0250	< 0.0300	0.0220	---	---	---	---	---	---

# Signifies Quality Control Sample



**TABLE B.4-5. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS.**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (µmhos/cm)	Ion_B (ratio)
0531	9/25/2001	ENER	---	---	---	---	---	---	---	670	1840	* 2979	---
0532	3/1/2001	ENER	87.0	34.1	2.50	35.2	251	< 1.000	21.4	175	512	* 796	1.04
0631	5/4/2001	ENER	---	---	---	---	---	---	---	719	1590	* 2839	---
	9/17/2001	ENER	---	---	---	---	---	---	---	677	1540	* 2628	---
0632	9/17/2001	ENER	---	---	---	---	---	---	---	688	1580	* 2564	---
0634	9/20/2001	ENER	---	---	---	---	---	---	---	812	2040	* 3308	---
0636	9/18/2001	ENER	---	---	---	---	---	---	---	446	1460	* 2556	---
0637	9/18/2001	ENER	---	---	---	---	---	---	---	505	1690	* 2970	---
0640	7/24/2001	ENER	---	---	---	---	---	---	---	630	1860	* 3126	---
0641	7/25/2001	ENER	---	---	---	---	---	---	---	580	1890	* 3184	---
0642	7/25/2001	ENER	---	---	---	---	---	---	---	580	1850	* 3173	---
0643	10/15/2001	ENER	---	---	---	---	---	---	---	707	1950	* 3383	---
	10/15/2001	ENER	---	---	---	---	---	---	---	# 706	# 1930	---	---
0644	10/15/2001	ENER	---	---	---	---	---	---	---	843	1900	* 3237	---
0646	10/23/2001	ENER	---	---	---	---	---	---	---	760	1740	* 2874	---
0648	5/4/2001	ENER	---	---	---	---	---	---	---	523	1290	* 2268	---
	5/4/2001	ENER	---	---	---	---	---	---	---	# 520	# 1310	---	---
	8/15/2001	ENER	---	---	---	---	---	---	---	570	1330	* 2202	---
0649	8/15/2001	ENER	---	---	---	---	---	---	---	470	1100	* 1871	---
	8/15/2001	ENER	---	---	---	---	---	---	---	# 470	# 1120	---	---
0652	10/23/2001	ENER	---	---	---	---	---	---	---	496	1200	* 2096	---
0653	5/4/2001	ENER	---	---	---	---	---	---	---	739	1980	* 3394	---
	9/17/2001	ENER	---	---	---	---	---	---	---	741	1940	* 3180	---
0654	9/18/2001	ENER	---	---	---	---	---	---	---	787	2110	* 3365	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-5. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS. (cont.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (µmhos/cm)	Ion_B (ratio)
0654	9/18/2001	ENER	---	---	---	---	---	---	---	# 837	# 2100	---	---
0657	5/4/2001	ENER	---	---	---	---	---	---	---	614	1590	---	---
	9/17/2001	ENER	---	---	---	---	---	---	---	597	1540	* 2503	---
0658	9/17/2001	ENER	---	---	---	---	---	---	---	543	1310	* 2172	---
0659	9/20/2001	ENER	---	---	---	---	---	---	---	806	2010	* 3279	---
0683	9/18/2001	ENER	---	---	---	---	---	---	---	119	467	* 865	---
0684	9/25/2001	ENER	---	---	---	---	---	---	---	550	1430	* 2380	---
0685	9/25/2001	ENER	---	---	---	---	---	---	---	680	1760	* 2909	---
0686	9/18/2001	ENER	---	---	---	---	---	---	---	485	1590	* 2800	---
0687	9/25/2001	ENER	---	---	---	---	---	---	---	720	1850	* 3006	---
0689	7/25/2001	ENER	---	---	---	---	---	---	---	200	697	* 1038	---
0692	7/25/2001	ENER	---	---	---	---	---	---	---	550	1550	* 2774	---
0846	7/24/2001	ENER	---	---	---	---	---	---	---	1500	3080	* 4467	---
0848	7/24/2001	ENER	---	---	---	---	---	---	---	580	1620	* 2763	---
0851	8/23/2001	ENER	---	---	---	---	---	---	---	910	1930	* 3141	---
0855	8/23/2001	ENER	---	---	---	---	---	---	---	700	1770	* 2920	---
0861	8/29/2001	ENER	---	---	---	---	---	---	---	770	1730	* 2954	---
0862	8/20/2001	ENER	---	---	---	---	---	---	---	660	1980	* 3296	---
0863	8/20/2001	ENER	---	---	---	---	---	---	---	670	1980	* 2580	---
0864	8/29/2001	ENER	---	---	---	---	---	---	---	760	1880	* 3182	---
0865	8/20/2001	ENER	---	---	---	---	---	---	---	760	1970	* 3135	---
0866	8/23/2001	ENER	---	---	---	---	---	---	---	670	1940	* 3218	---
0867	8/23/2001	ENER	---	---	---	---	---	---	---	480	1410	* 2398	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-5. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS. (cont.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (µmhos/cm)	Ion_B (ratio)
0868	8/29/2001	ENER	—	—	—	—	—	—	—	610	1740	* 2969	—
0869	8/20/2001	ENER	—	—	—	—	—	—	—	690	1650	* 2377	—
0876	8/20/2001	ENER	—	—	—	—	—	—	—	820	2070	* 3283	—
	8/20/2001	ENER	—	—	—	—	—	—	—	# 820	# 2050	—	—
0881	9/20/2001	ENER	—	—	—	—	—	—	—	819	2050	* 3331	—
0882	9/20/2001	ENER	—	—	—	—	—	—	—	864	1770	* 2669	—
0883	9/20/2001	ENER	—	—	—	—	—	—	—	870	2040	* 3317	—
	9/20/2001	ENER	—	—	—	—	—	—	—	# 878	# 2020	—	—
0884	9/21/2001	ENER	—	—	—	—	—	—	—	1200	2560	* 3880	—
0885	9/20/2001	ENER	—	—	—	—	—	—	—	720	1820	* 3070	—
0886	9/20/2001	ENER	—	—	—	—	—	—	—	1050	2440	* 3746	—
0888	9/18/2001	ENER	—	—	—	—	—	—	—	957	2390	* 3770	—
0890	9/20/2001	ENER	—	—	—	—	—	—	—	798	1970	* 3190	—
0893	9/20/2001	ENER	—	—	—	—	—	—	—	728	1850	* 3099	—
0894	9/18/2001	ENER	—	—	—	—	—	—	—	797	2100	* 3374	—
0895	9/18/2001	ENER	—	—	—	—	—	—	—	768	1850	* 3003	—
0896	9/18/2001	ENER	—	—	—	—	—	—	—	853	1950	* 3012	—
0899	9/18/2001	ENER	—	—	—	—	—	—	—	410	1100	* 1921	—
	9/18/2001	ENER	—	—	—	—	—	—	—	# 402	# 1090	—	—
0905	5/7/2001	ENER	—	—	—	—	—	—	—	375	979	* 1524	—
0909	5/7/2001	ENER	—	—	—	—	—	—	—	660	1430	* 2434	—
0910	5/7/2001	ENER	—	—	—	—	—	—	—	306	915	* 1430	—
0914	5/8/2001	ENER	120	29.8	3.00	314	51.0	< 1.000	88.0	846	1590	* 2692	1.06

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC



**TABLE B.4-5. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS. (cont.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (µmhos/cm)	Ion_B (ratio)
0916	5/7/2001	ENER	5.50	1.30	< 1.000	130	252	< 1.000	27.3	45.7	399	* 707	1.03
0920	2/15/2001	ENER	—	—	—	—	—	—	64.9	1570	2630	* 3931	—
	2/15/2001	ENER	—	—	—	—	—	—	# 64.1	# 1560	# 2630	—	—
	8/15/2001	ENER	—	—	—	—	—	—	—	1500	2730	* 3610	—
0921	5/8/2001	ENER	367	66.6	7.80	301	232	< 1.000	68.6	1320	2670	* 3766	1.12
	5/8/2001	ENER	# 367	# 67.3	# 7.80	# 305	# 232	# < 1.000	# 70.5	# 1360	# 2670	—	# 1.09
0922	5/8/2001	ENER	2.80	< 1.000	2.00	385	591	47.0	72.6	214	1060	* 2103	0.959
0935	9/25/2001	ENER	—	—	—	—	—	—	—	780	2030	* 3269	—
0942	8/23/2001	ENER	—	—	—	—	—	—	—	590	1570	* 2244	—
0947	7/25/2001	ENER	—	—	—	—	—	—	—	590	1820	* 3185	—
	7/25/2001	ENER	—	—	—	—	—	—	—	# 590	# 1820	—	—
0950	5/8/2001	ENER	65.4	14.2	2.00	467	276	< 1.000	136	721	1750	* 2482	1.06
0994	9/25/2001	ENER	—	—	—	—	—	—	—	116	438	* 867	—
	12/11/2001	ENER	—	—	—	—	—	—	—	139	481	* 899	—
0996	9/25/2001	ENER	—	—	—	—	—	—	—	610	1560	* 2496	—
0999	3/1/2001	ENER	130	38.4	3.30	54.6	306	< 1.000	35.9	280	657	* 1092	1.02

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.4-6. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS.**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
0531	9/25/2001	ENER	—	0.116	—	0.0310	2.00	—	—	—	—	—
0532	3/1/2001	ENER	7.68	0.0055	< 0.0300	0.0090	3.12	< 0.200	—	—	—	—
0631	5/4/2001	ENER	—	0.0280	—	0.223	—	—	—	—	—	—
	9/17/2001	ENER	—	0.0260	—	0.229	—	—	—	—	—	—
0632	9/17/2001	ENER	—	0.0220	—	0.277	—	—	—	—	—	—
0634	9/20/2001	ENER	—	0.217	—	0.0560	3.20	—	—	—	—	—
0636	9/18/2001	ENER	—	0.0820	—	0.0140	14.8	—	—	—	—	—
0637	9/18/2001	ENER	—	0.118	—	0.0190	4.40	—	—	—	—	—
0640	7/24/2001	ENER	—	0.0410	< 0.0300	0.0080	—	—	—	—	—	—
0641	7/25/2001	ENER	—	0.0990	< 0.0300	0.0100	—	—	—	—	—	—
0642	7/25/2001	ENER	—	0.490	< 0.0300	0.0160	—	—	—	—	—	—
0643	10/15/2001	ENER	—	0.911	—	0.0910	—	—	—	—	—	—
	10/15/2001	ENER	—	# 0.973	—	# 0.0950	—	—	—	—	—	—
0644	10/15/2001	ENER	—	0.0210	—	0.305	—	—	—	—	—	—
0646	10/23/2001	ENER	—	0.0220	—	0.350	—	—	—	—	—	—
0648	5/4/2001	ENER	—	0.0535	—	0.0397	—	—	—	—	—	—
	5/4/2001	ENER	—	# 0.0528	—	# 0.0382	—	—	—	—	—	—
	8/15/2001	ENER	—	0.0600	—	0.0420	3.44	—	—	—	—	—
0649	8/15/2001	ENER	—	0.0440	—	0.0240	—	—	—	—	—	—
	8/15/2001	ENER	—	# 0.0450	—	# 0.0310	—	—	—	—	—	—
0652	10/23/2001	ENER	—	0.0220	—	0.0340	—	—	—	—	—	—
0653	5/4/2001	ENER	—	1.12	—	0.129	—	—	—	—	—	—
	9/17/2001	ENER	—	0.965	—	0.186	—	—	—	—	—	—
0654	9/18/2001	ENER	—	0.268	—	0.0660	3.80	—	—	—	—	—

# Signifies Quality Control Sample

**TABLE B.4-6. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS. (cont.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
0654	9/18/2001	ENER	—	# 0.279	—	# 0.0790	# 3.60	—	—	—	—	—
0657	5/4/2001	ENER	—	0.0714	—	0.0514	—	—	—	—	—	—
	9/17/2001	ENER	—	0.0590	—	0.0580	3.40	—	—	—	—	—
0658	9/17/2001	ENER	—	0.0120	—	0.0530	2.60	—	—	—	—	—
0659	9/20/2001	ENER	—	0.200	—	0.0510	3.20	—	—	—	—	—
0683	9/18/2001	ENER	—	0.0030	—	< 0.0050	1.30	—	—	—	—	—
0684	9/25/2001	ENER	—	0.0240	—	0.0390	2.40	—	—	—	—	—
0685	9/25/2001	ENER	—	0.122	—	0.0500	3.10	—	—	—	—	—
0686	9/18/2001	ENER	—	0.0770	—	0.0160	18.8	—	—	—	—	—
0687	9/25/2001	ENER	—	0.173	—	0.0710	8.40	—	—	—	—	—
0689	7/25/2001	ENER	—	0.0060	—	0.0060	—	—	—	—	—	—
0692	7/25/2001	ENER	—	0.0430	—	0.0150	—	—	—	—	—	—
0846	7/24/2001	ENER	—	0.0550	< 0.0300	0.0710	—	—	—	—	—	—
0848	7/24/2001	ENER	—	0.0470	—	0.0860	—	—	—	—	—	—
0851	8/23/2001	ENER	—	0.0620	—	0.170	—	—	—	—	—	—
0855	8/23/2001	ENER	—	0.0300	—	0.290	—	—	—	—	—	—
0861	8/29/2001	ENER	—	0.0750	—	0.340	—	—	—	—	—	—
0862	8/20/2001	ENER	—	0.480	—	0.0580	—	—	—	—	—	—
0863	8/20/2001	ENER	—	1.20	—	0.110	—	—	—	—	—	—
0864	8/29/2001	ENER	—	0.650	—	0.120	—	—	—	—	—	—
0865	8/20/2001	ENER	—	0.170	—	0.250	—	—	—	—	—	—
0866	8/23/2001	ENER	—	1.40	—	0.130	—	—	—	—	—	—
0867	8/23/2001	ENER	—	0.0240	—	0.180	—	—	—	—	—	—

# Signifies Quality Control Sample



**TABLE B.4-6. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS. (cont.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
0868	8/29/2001	ENER	—	0.0690	—	0.0500	—	—	—	—	—	—
0869	8/20/2001	ENER	—	0.0290	—	0.210	—	—	—	—	—	—
0876	8/20/2001	ENER	—	0.520	—	0.310	—	—	—	—	—	—
	8/20/2001	ENER	—	# 0.520	—	# 0.310	—	—	—	—	—	—
0881	9/20/2001	ENER	—	0.237	—	0.0610	3.40	—	—	—	—	—
0882	9/20/2001	ENER	—	0.0130	—	< 0.0050	< 0.100	—	—	—	—	—
0883	9/20/2001	ENER	—	0.0220	—	0.0930	—	—	—	—	—	—
	9/20/2001	ENER	—	# 0.0190	—	# 0.0730	—	—	—	—	—	—
0884	9/21/2001	ENER	—	0.554	—	0.170	12.9	—	—	—	—	—
0885	9/20/2001	ENER	—	0.0710	—	0.0290	1.40	—	—	—	—	—
0886	9/20/2001	ENER	—	0.484	—	0.148	8.30	—	—	—	—	—
0888	9/18/2001	ENER	—	0.541	—	0.111	8.70	—	—	—	—	—
0890	9/20/2001	ENER	—	0.165	—	0.0450	2.70	—	—	—	—	—
0893	9/20/2001	ENER	—	0.0760	—	0.0230	1.40	—	—	—	—	—
0894	9/18/2001	ENER	—	0.299	—	0.0750	4.20	—	—	—	—	—
0895	9/18/2001	ENER	—	0.0900	—	0.0730	10.00	—	—	—	—	—
0896	9/18/2001	ENER	—	0.0260	—	0.0900	8.30	—	—	—	—	—
0899	9/18/2001	ENER	—	0.0300	—	0.0510	10.8	—	—	—	—	—
	9/18/2001	ENER	—	# 0.0320	—	# 0.0560	# 10.5	—	—	—	—	—
0905	5/7/2001	ENER	—	0.0143	—	0.0190	—	—	—	—	—	—
0909	5/7/2001	ENER	—	0.0236	—	0.159	—	—	—	—	—	—
0910	5/7/2001	ENER	—	0.0119	—	0.0143	—	—	—	—	—	—
0914	5/8/2001	ENER	6.99	0.0010	< 0.0300	0.0060	1.88	< 0.200	—	—	—	—

# Signifies Quality Control Sample

**TABLE B.4-6. WATER QUALITY ANALYSES FOR THE REGIONAL ALLUVIAL WELLS. (cont.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
0916	5/7/2001	ENER	8.04	0.0090	< 0.0300	0.0140	6.18	< 0.200	---	---	---	---
0920	2/15/2001	ENER	---	0.172	< 0.0300	0.458	---	---	---	---	---	---
	2/15/2001	ENER	---	# 0.171	# < 0.0300	# 0.460	---	---	---	---	---	---
	8/15/2001	ENER	---	0.180	< 0.0300	0.430	---	---	---	---	---	---
0921	5/8/2001	ENER	7.52	0.212	< 0.0300	0.629	21.1	< 0.200	---	---	---	---
	5/8/2001	ENER	# 7.58	# 0.209	# < 0.0300	# 0.582	# 19.9	# < 0.200	---	---	---	---
0922	5/8/2001	ENER	9.15	0.0150	0.0600	< 0.0050	2.08	< 0.200	---	---	---	---
0935	9/25/2001	ENER	---	0.275	---	0.0870	7.60	---	---	---	---	---
0942	8/23/2001	ENER	---	0.0520	< 0.0300	0.0150	---	---	---	---	---	---
0947	7/25/2001	ENER	---	0.0730	---	0.0120	---	---	---	---	---	---
	7/25/2001	ENER	---	# 0.0750	---	# 0.0080	---	---	---	---	---	---
0950	5/8/2001	ENER	7.93	0.142	< 0.0300	0.265	8.91	< 0.200	---	---	---	---
0994	9/25/2001	ENER	---	0.0040	---	< 0.0050	2.00	---	---	---	---	---
	12/11/2001	ENER	---	0.0045	---	< 0.0050	1.80	---	---	---	---	---
0996	9/25/2001	ENER	---	0.0690	---	0.0840	5.20	---	---	---	---	---
0999	3/1/2001	ENER	7.71	0.0070	< 0.0300	0.0140	3.87	< 0.200	---	---	---	---

# Signifies Quality Control Sample

**TABLE B.5-1 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos)	Ion_B (ratio)
0434	3/13/2001	ENER	---	---	---	---	---	---	---	744	1670	* 3070	---
0446	6/6/2001	ENER	---	---	---	---	---	---	---	714	1870	* 3197	---
0493	3/13/2001	ENER	---	---	---	---	---	---	---	722	1320	* 2757	---
	6/5/2001	ENER	---	---	---	---	---	---	---	639	1330	* 2587	---
0494	6/5/2001	ENER	---	---	---	---	---	---	---	698	1910	* 3179	---
0536R	9/25/2001	ENER	380	53.9	7.50	188	275	< 1.000	74.7	1100	2200	* 3120	1.07
0653	5/4/2001	ENER	---	---	---	---	---	---	---	739	1980	* 3394	---
	9/17/2001	ENER	---	---	---	---	---	---	---	741	1940	* 3180	---
0820	5/7/2001	ENER	---	---	---	---	---	---	---	1460	3040	---	---
0853	6/6/2001	ENER	---	---	---	---	---	---	---	647	1350	* 2152	---
0859	6/6/2001	ENER	---	---	---	---	---	---	---	916	2080	* 3421	---
0909	5/7/2001	ENER	---	---	---	---	---	---	---	660	1430	* 2434	---
0929	7/10/2001	ENER	6.60	< 1.000	< 1.000	580	391	7.00	76.7	691	1640	* 2990	1.11
0934	7/25/2001	ENER	---	---	---	---	---	---	---	620	1560	* 2902	---
0944	9/27/2001	ENER	18.4	3.40	1.40	600	356	< 1.000	147	780	1920	* 3486	1.04
0994	9/25/2001	ENER	---	---	---	---	---	---	---	116	438	* 867	---
	12/11/2001	ENER	---	---	---	---	---	---	---	139	481	* 899	---
CE1	2/15/2001	ENER	170	47.8	5.20	316	379	5.00	103	820	1710	* 2997	0.998
	6/4/2001	ENER	---	---	---	---	---	---	---	959	2000	* 3072	---
	6/4/2001	ENER	---	---	---	---	---	---	---	# 972	# 2000	---	---
CE2	6/4/2001	ENER	---	---	---	---	---	---	---	839	2070	* 3448	---
CE5	2/20/2001	ENER	217	60.9	3.70	315	538	< 1.000	191	791	1910	* 3372	0.965
	6/4/2001	ENER	---	---	---	---	---	---	---	755	1970	* 3313	---
CW2	5/30/2001	ENER	---	---	---	---	---	---	---	400	935	* 1486	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC



**TABLE B.5-1 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
CW3	2/13/2001	ENER	---	---	---	---	---	---	56.8	738	1450	* 2692	---
	6/5/2001	ENER	---	---	---	---	---	---	---	755	1610	* 2752	---
CW4R	4/16/2001	ENER	---	---	---	---	---	---	---	802	1900	* 3163	---
	4/16/2001	ENER	---	---	---	---	---	---	---	# 804	# 1920	---	---
	6/4/2001	ENER	---	---	---	---	---	---	---	737	1870	* 3280	---
CW15	6/6/2001	ENER	---	---	---	---	---	---	---	853	1610	* 3006	---
CW17	6/7/2001	ENER	---	---	---	---	---	---	---	1640	3000	* 4227	---
CW18	7/24/2001	ENER	15.7	---	---	---	---	---	---	565	1910	* 3742	---
CW26	6/6/2001	ENER	---	---	---	---	---	---	---	607	1380	* 2406	---
CW27	6/6/2001	ENER	---	---	---	---	---	---	---	782	1650	* 2586	---
CW28	7/24/2001	ENER	---	---	---	---	---	---	---	390	1370	* 2722	---
CW29	6/6/2001	ENER	---	---	---	---	---	---	---	503	1050	* 1951	---
CW30	6/5/2001	ENER	---	---	---	---	---	---	---	988	2060	* 3782	---
	6/5/2001	ENER	---	---	---	---	---	---	---	# 991	# 2040	---	---
CW31	6/7/2001	ENER	---	---	---	---	---	---	---	1090	2030	* 3291	---
CW32	6/7/2001	ENER	---	---	---	---	---	---	---	1570	4180	* 6608	---
CW33	6/7/2001	ENER	---	---	---	---	---	---	---	2080	4100	* 6436	---
CW35	6/7/2001	ENER	---	---	---	---	---	---	---	1110	2250	* 3425	---
CW37	6/6/2001	ENER	---	---	---	---	---	---	---	1050	1970	* 3184	---
CW40	7/24/2001	ENER	11.0	---	---	---	---	---	---	570	1870	* 3693	---
CW42	9/27/2001	ENER	---	---	---	---	---	---	---	770	1980	* 3369	---
CW43	9/27/2001	ENER	---	---	---	---	---	---	---	450	1160	* 2120	---
CW44	5/4/2001	ENER	---	---	---	---	---	---	---	# 718	# 2010	---	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.5-1 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS (cont'd.)**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
CW44	5/4/2001	ENER	---	---	---	---	---	---	---	723	2010	* 3562	---
	9/17/2001	ENER	---	---	---	---	---	---	---	695	1950	* 3334	---
CW45	9/26/2001	ENER	---	---	---	---	---	---	---	650	1730	* 3016	---
CW46	9/26/2001	ENER	---	---	---	---	---	---	---	730	1750	* 2922	---
	9/26/2001	ENER	---	---	---	---	---	---	---	# 720	# 1750	---	---

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.5-2 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
0434	3/13/2001	ENER	—	0.340	< 0.0300	0.0500	—	—	—	—	—	—
0446	6/6/2001	ENER	—	0.0670	< 0.0300	0.0170	—	—	—	—	—	—
0493	3/13/2001	ENER	—	0.0500	< 0.0300	0.200	—	—	—	—	—	—
	6/5/2001	ENER	—	0.0430	0.0500	0.178	—	—	—	—	—	—
0494	6/5/2001	ENER	—	0.283	0.0800	0.0250	—	—	—	—	—	—
0536R	9/25/2001	ENER	7.80	0.0170	< 0.0300	0.0340	12.2	0.300	< 1.000	—	< 0.0100	< 0.200
0653	5/4/2001	ENER	—	1.12	—	0.129	—	—	—	—	—	—
	9/17/2001	ENER	—	0.965	—	0.186	—	—	—	—	—	—
0820	5/7/2001	ENER	—	0.0610	< 0.0300	0.0460	—	—	—	—	—	—
0853	6/6/2001	ENER	—	0.0280	—	0.186	—	—	—	—	—	—
0859	6/6/2001	ENER	—	0.166	—	0.119	—	—	—	—	—	—
0909	5/7/2001	ENER	—	0.0236	—	0.159	—	—	—	—	—	—
0929	7/10/2001	ENER	8.48	0.0215	< 0.0300	0.0220	0.340	< 0.200	< 1.000	—	0.0100	0.300
0934	7/25/2001	ENER	—	0.0310	< 0.0300	0.0230	—	—	—	—	—	—
0944	9/27/2001	ENER	8.30	0.0050	0.0400	0.0320	1.10	—	—	—	—	—
0994	9/25/2001	ENER	—	0.0040	—	< 0.0050	2.00	—	—	—	—	—
	12/11/2001	ENER	—	0.0045	—	< 0.0050	1.80	—	—	—	—	—
CE1	2/15/2001	ENER	8.33	1.61	0.820	0.0370	0.130	< 0.200	—	—	—	—
	6/4/2001	ENER	—	1.59	0.696	0.0080	—	—	—	—	—	—
	6/4/2001	ENER	—	# 1.77	# 0.743	# < 0.0050	—	—	—	—	—	—
CE2	6/4/2001	ENER	—	1.12	0.351	0.148	—	—	—	—	—	—
CE5	2/20/2001	ENER	8.13	0.560	0.140	0.0890	1.58	< 0.200	—	—	—	—
	6/4/2001	ENER	—	0.710	0.170	0.111	—	—	—	—	—	—
CW2	5/30/2001	ENER	—	0.0160	< 0.0300	0.0130	—	—	—	—	—	—

# Signifies Quality Control Sample



**TABLE B.5-2 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
CW3	2/13/2001	ENER	--	0.0352	< 0.0300	0.0090	--	--	--	--	--	--
	6/5/2001	ENER	--	0.0340	< 0.0300	0.0070	--	--	--	--	--	--
CW4R	4/16/2001	ENER	--	0.430	0.0963	0.0812	--	--	--	--	--	--
	4/16/2001	ENER	--	# 0.427	# 0.0978	# 0.0833	--	--	--	--	--	--
	6/4/2001	ENER	--	0.447	0.110	0.0900	--	--	--	--	--	--
CW15	6/6/2001	ENER	--	0.0209	--	0.0310	--	--	--	--	--	--
CW17	6/7/2001	ENER	--	0.140	--	0.0710	--	--	--	--	--	--
CW18	7/24/2001	ENER	--	0.0460	< 0.0300	0.0260	--	--	--	--	--	--
CW26	6/6/2001	ENER	--	0.0200	--	0.247	--	--	--	--	--	--
CW27	6/6/2001	ENER	--	0.0190	--	0.338	--	--	--	--	--	--
CW28	7/24/2001	ENER	--	0.0480	--	0.0160	--	--	--	--	--	--
CW29	6/6/2001	ENER	--	0.0150	--	0.0300	--	--	--	--	--	--
CW30	6/5/2001	ENER	--	0.243	--	0.215	--	--	--	--	--	--
	6/5/2001	ENER	--	# 0.275	--	# 0.195	--	--	--	--	--	--
CW31	6/7/2001	ENER	--	0.0069	--	< 0.0050	--	--	--	--	--	--
CW32	6/7/2001	ENER	--	0.0014	--	0.0180	--	--	--	--	--	--
CW33	6/7/2001	ENER	--	0.0055	--	0.0120	--	--	--	--	--	--
CW35	6/7/2001	ENER	--	0.172	--	0.0610	--	--	--	--	--	--
CW37	6/6/2001	ENER	--	0.0300	--	0.0820	--	--	--	--	--	--
CW40	7/24/2001	ENER	--	0.0290	--	0.0200	--	--	--	--	--	--
CW42	9/27/2001	ENER	--	1.18	--	0.215	--	--	--	--	--	--
CW43	9/27/2001	ENER	--	0.0299	--	0.0140	--	--	--	--	--	--
CW44	5/4/2001	ENER	--	# 1.01	--	# 0.0730	--	--	--	--	--	--

# Signifies Quality Control Sample

**TABLE B.5-2 WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS (cont'd.)**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
CW44	5/4/2001	ENER	--	1.01	--	0.0730	--	--	--	--	--	--
	9/17/2001	ENER	--	0.848	--	0.103	--	--	--	--	--	--
CW45	9/26/2001	ENER	--	1.71	--	0.115	--	--	--	--	--	--
CW46	9/26/2001	ENER	--	0.0436	--	0.227	--	--	--	--	--	--
	9/26/2001	ENER	--	# 0.0432	--	# 0.238	--	--	--	--	--	--

# Signifies Quality Control Sample

**TABLE B.6-1 WATER QUALITY ANALYSES FOR THE SAN ANDRES AQUIFER**

Ca THROUGH ION\_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
#1 Deepwell	5/16/2001	ENER	169	65.6	11.8	232	445	< 1.000	182	523	1660	—	1.04
#2 Deepwell	5/2/2001	ENER	211	69.1	10.7	237	512	< 1.000	189	603	1790	—	1.02
0806	8/24/2001	ENER	—	—	—	—	—	—	—	540	1550	* 2178	—
0928	8/29/2001	ENER	—	—	—	—	—	—	—	810	1710	* 2889	—
0943	8/29/2001	ENER	—	—	—	—	—	—	—	1000	2040	* 3822	—
	8/29/2001	ENER	—	—	—	—	—	—	—	# 1000	# 2030	—	—

# Signifies Quality Control Sample

\* Signifies Specific Conductivity from HMC

**TABLE B.6-2 WATER QUALITY ANALYSES FOR THE SAN ANDRES AQUIFER**

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	Cr (mg/l)	V (mg/l)	Th230 (pCi/l)
#1 Deepwell	5/16/2001	ENER	7.88	0.0070	< 0.0300	< 0.0050	0.240	< 0.200	< 1.000	< 0.0500	< 0.0100	0.400
#2 Deepwell	5/2/2001	ENER	7.79	0.0100	< 0.0300	0.0090	3.17	< 0.200	< 1.000	< 0.0500	< 0.0100	0.400
0806	8/24/2001	ENER	---	0.0180	---	0.0110	---	---	---	---	---	---
0928	8/29/2001	ENER	---	0.0860	---	0.0360	---	---	---	---	---	---
0943	8/29/2001	ENER	---	< 0.0003	---	< 0.0050	---	---	---	---	---	---
	8/29/2001	ENER	---	# 0.0010	---	# 0.0050	---	---	---	---	---	---

# Signifies Quality Control Sample