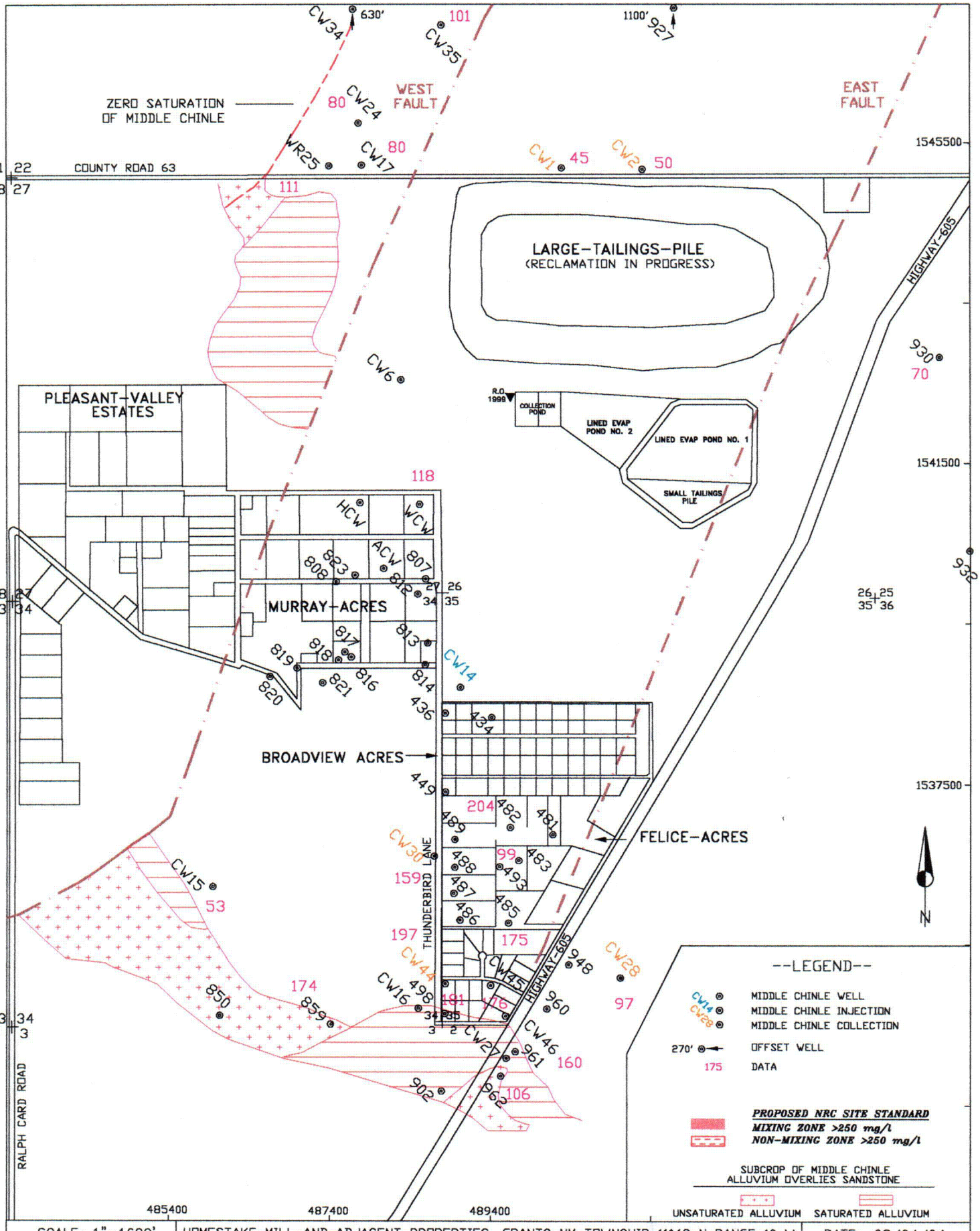

SCALE: 1"=1600' | HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W | DATE: 03/04/04

FIGURE 6.3-8. CHLORIDE CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, mg/l

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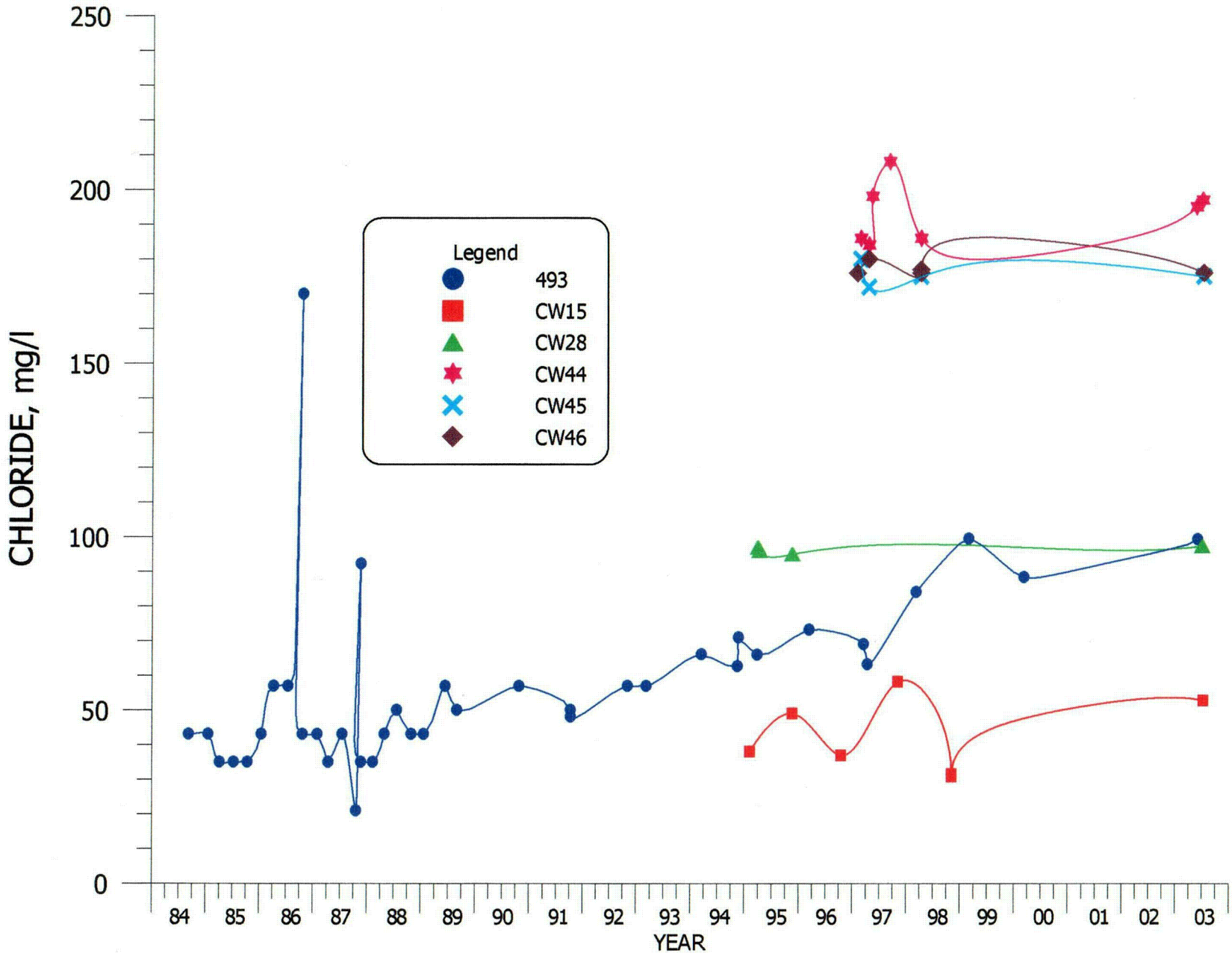

FIGURE 6.3-9. CHLORIDE CONCENTRATIONS FOR WELLS 493, CW15, CW28, CW44, CW45 AND CW46.

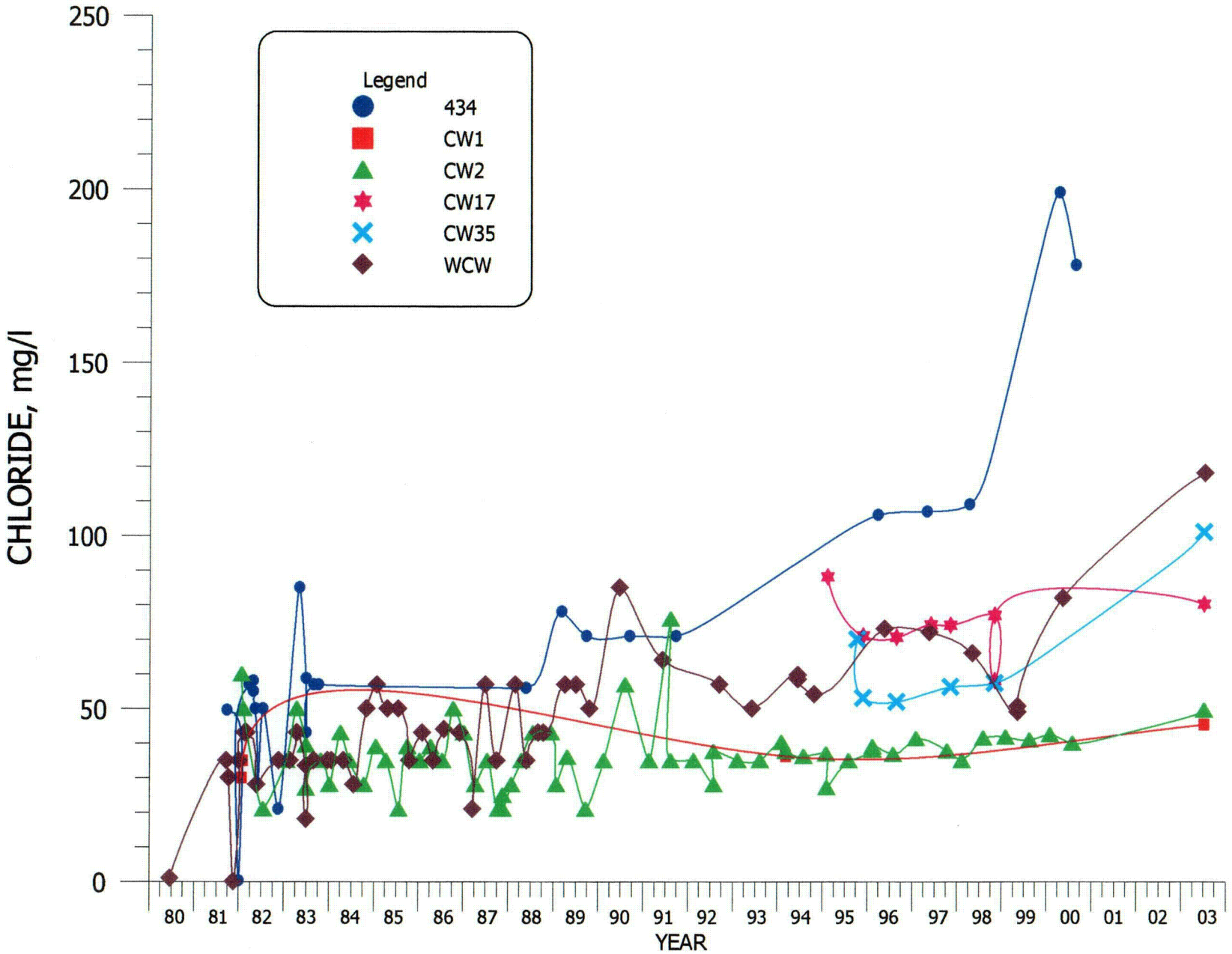

FIGURE 6.3-10. CHLORIDE CONCENTRATIONS FOR WELLS 434, CW1, CW2, CW17, CW35 AND WCW.

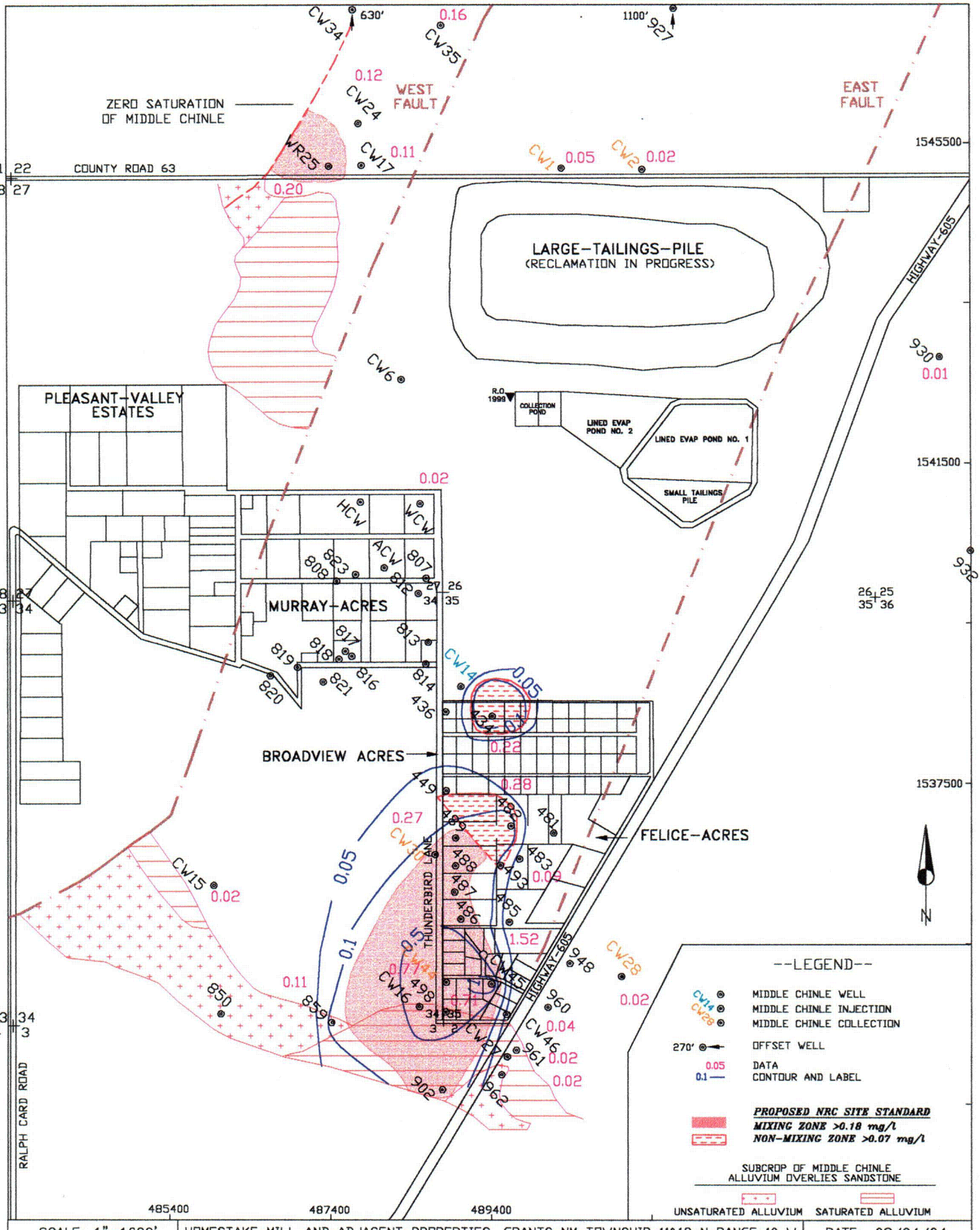

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FIGURE 6.3-11. URANIUM CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, in mg/l

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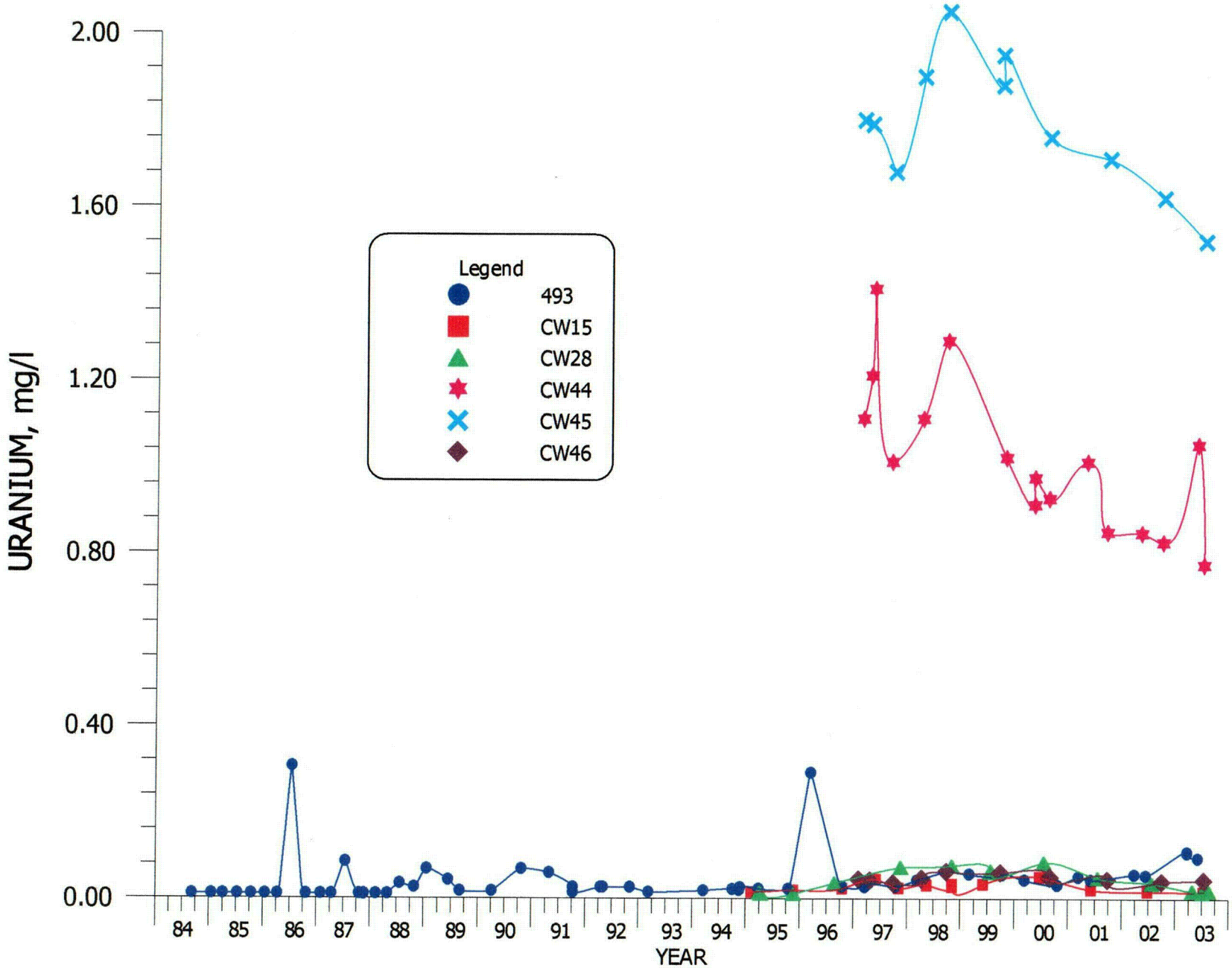

FIGURE 6.3-12. URANIUM CONCENTRATIONS FOR WELLS 493, CW15, CW28, CW44, CW45 AND CW46.

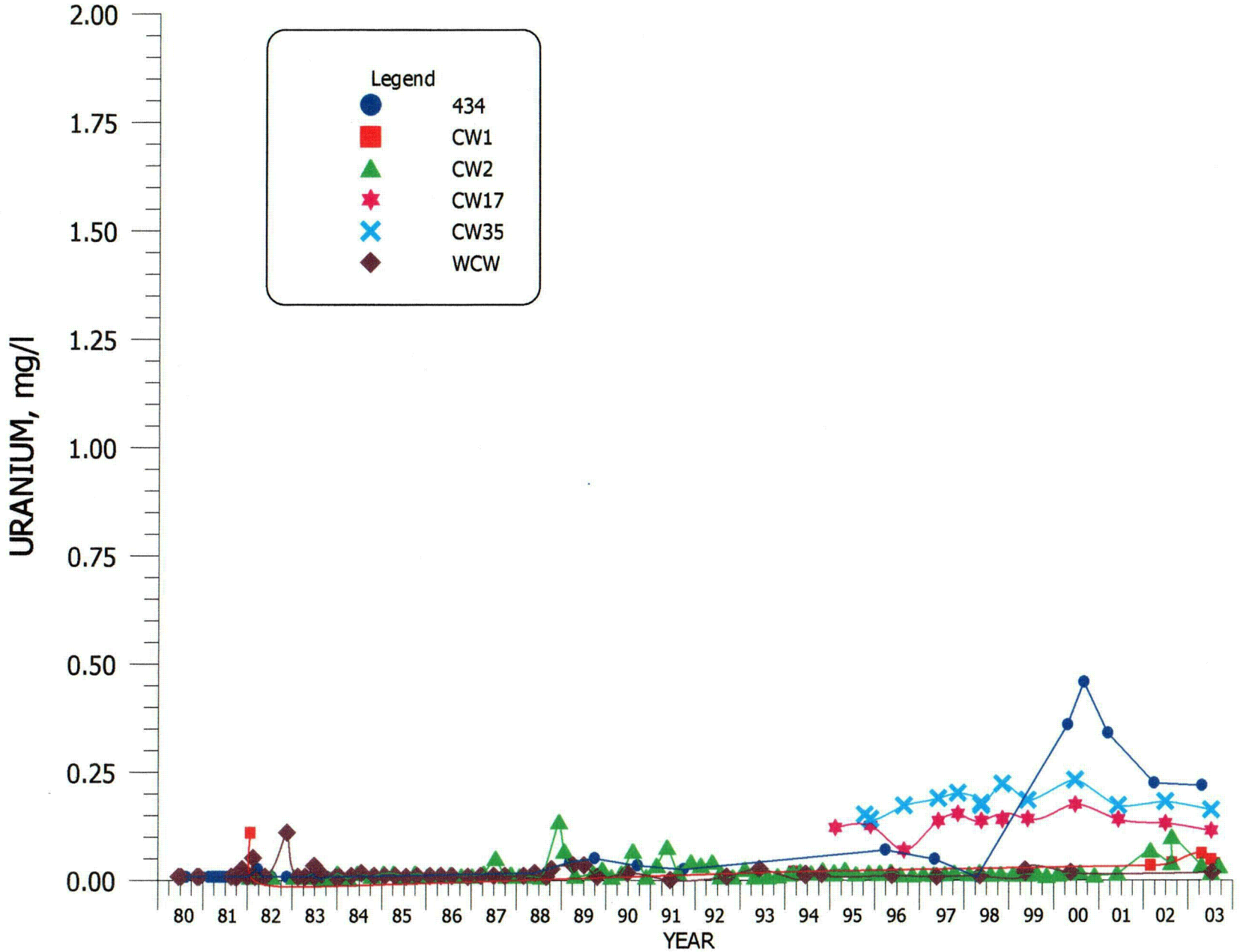

FIGURE 6.3-13. URANIUM CONCENTRATIONS FOR WELLS 434, CW1, CW2, CW17, CW35 AND WCW.

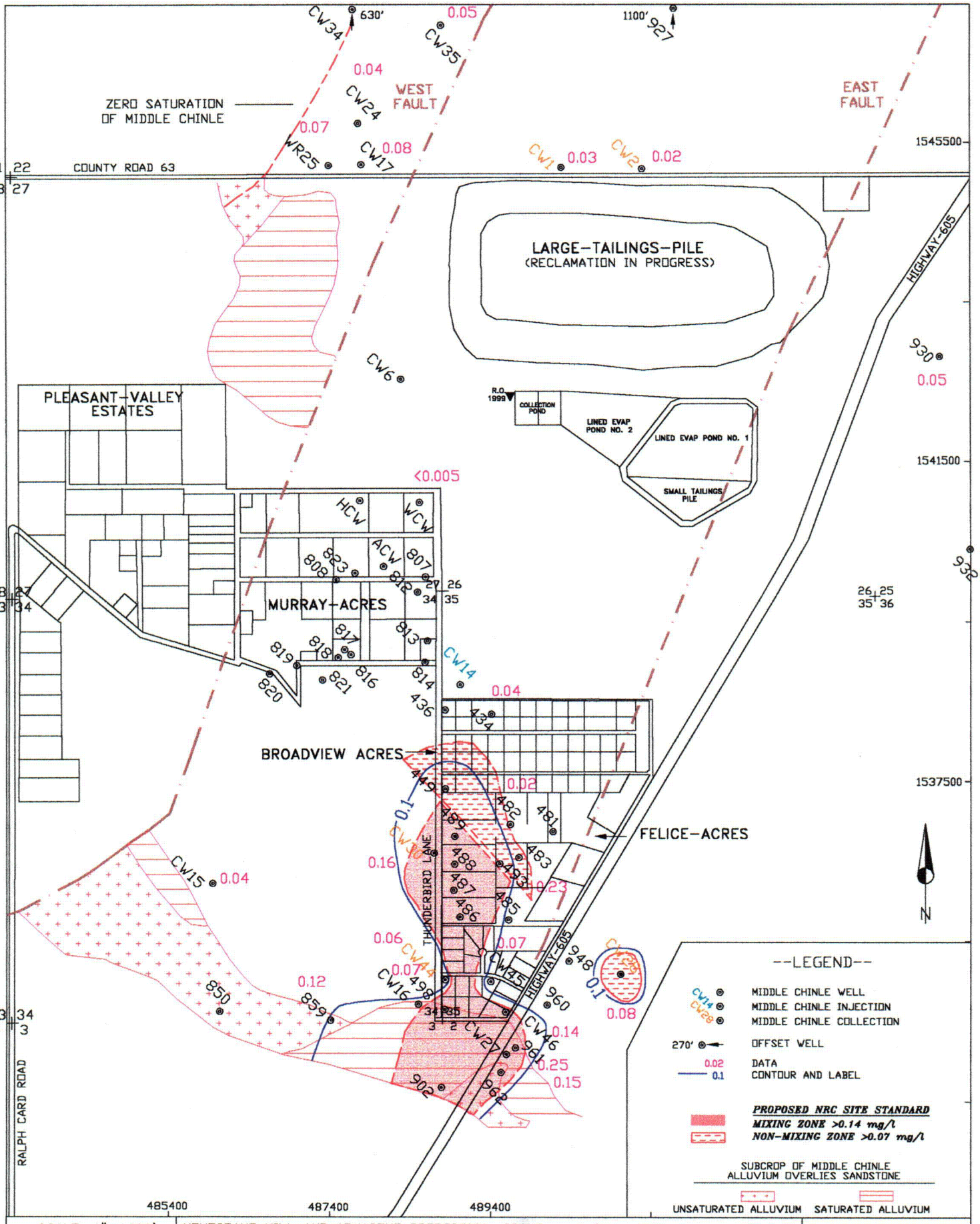

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FIGURE 6.3-14. SELENIUM CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, mg/l

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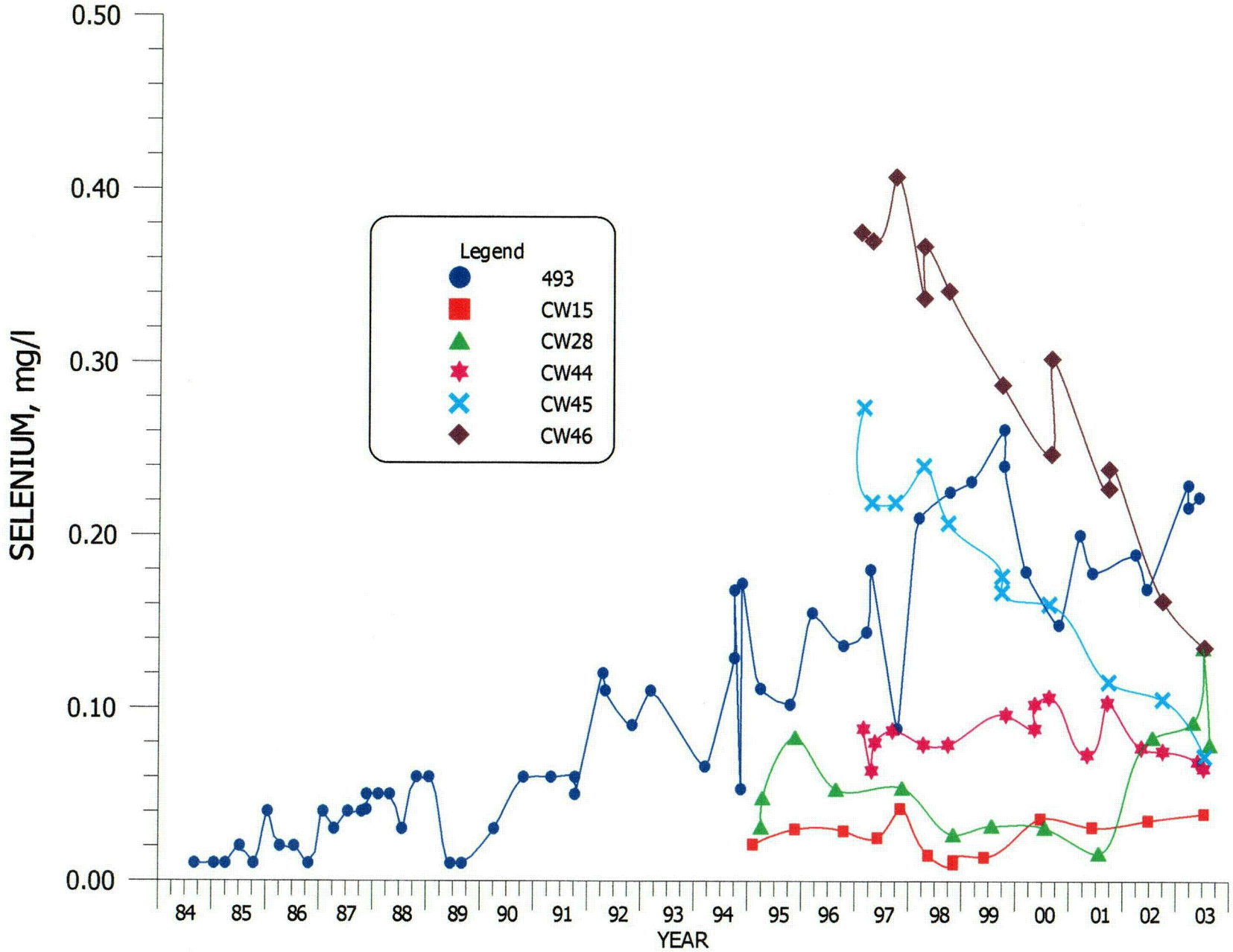

FIGURE 6.3-15. SELENIUM CONCENTRATIONS FOR WELLS 493, CW15, CW28, CW44, CW45 AND CW46.

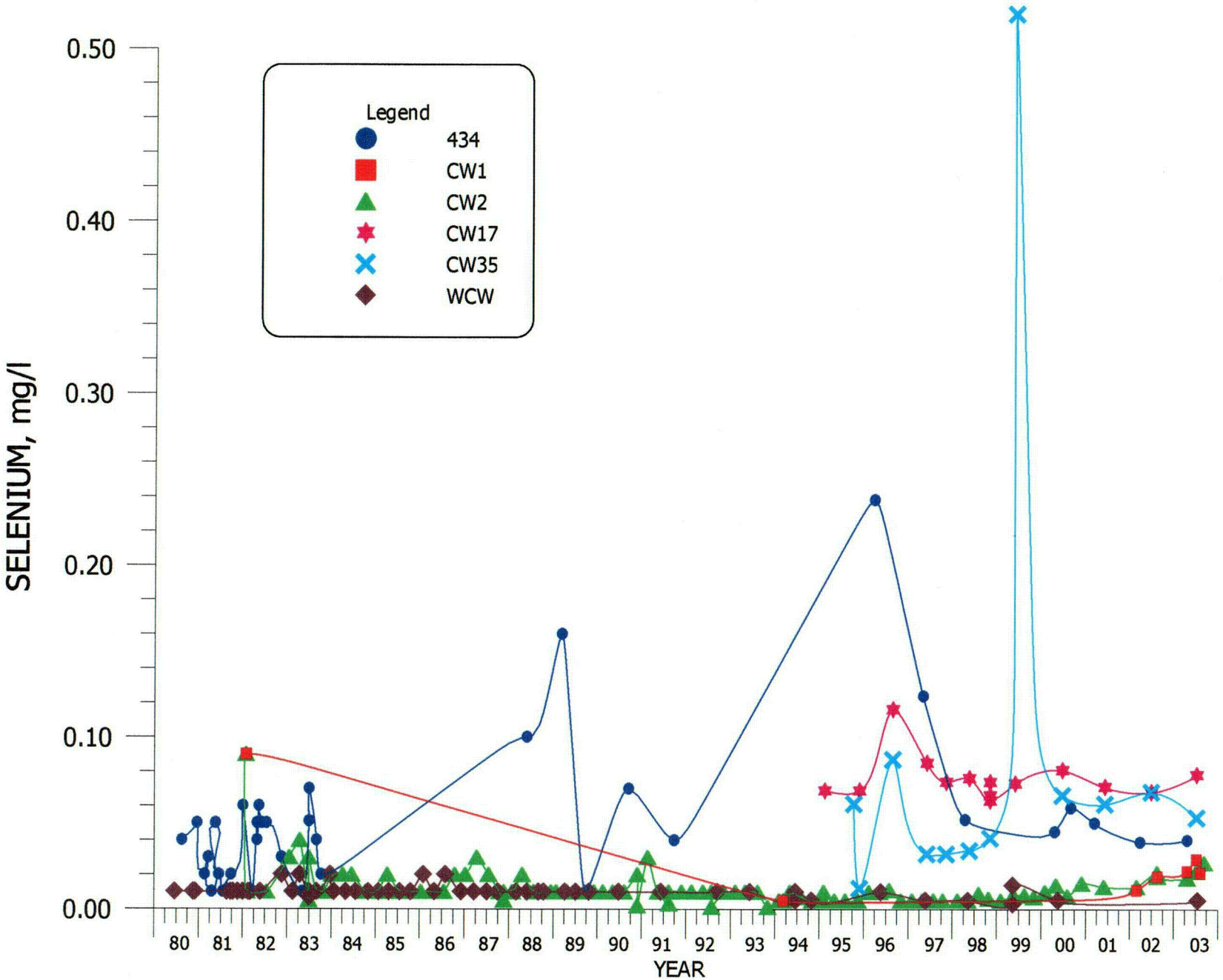

FIGURE 6.3-16. SELENIUM CONCENTRATIONS FOR WELLS 434, CW1, CW2, CW17, CW35 AND WCW.

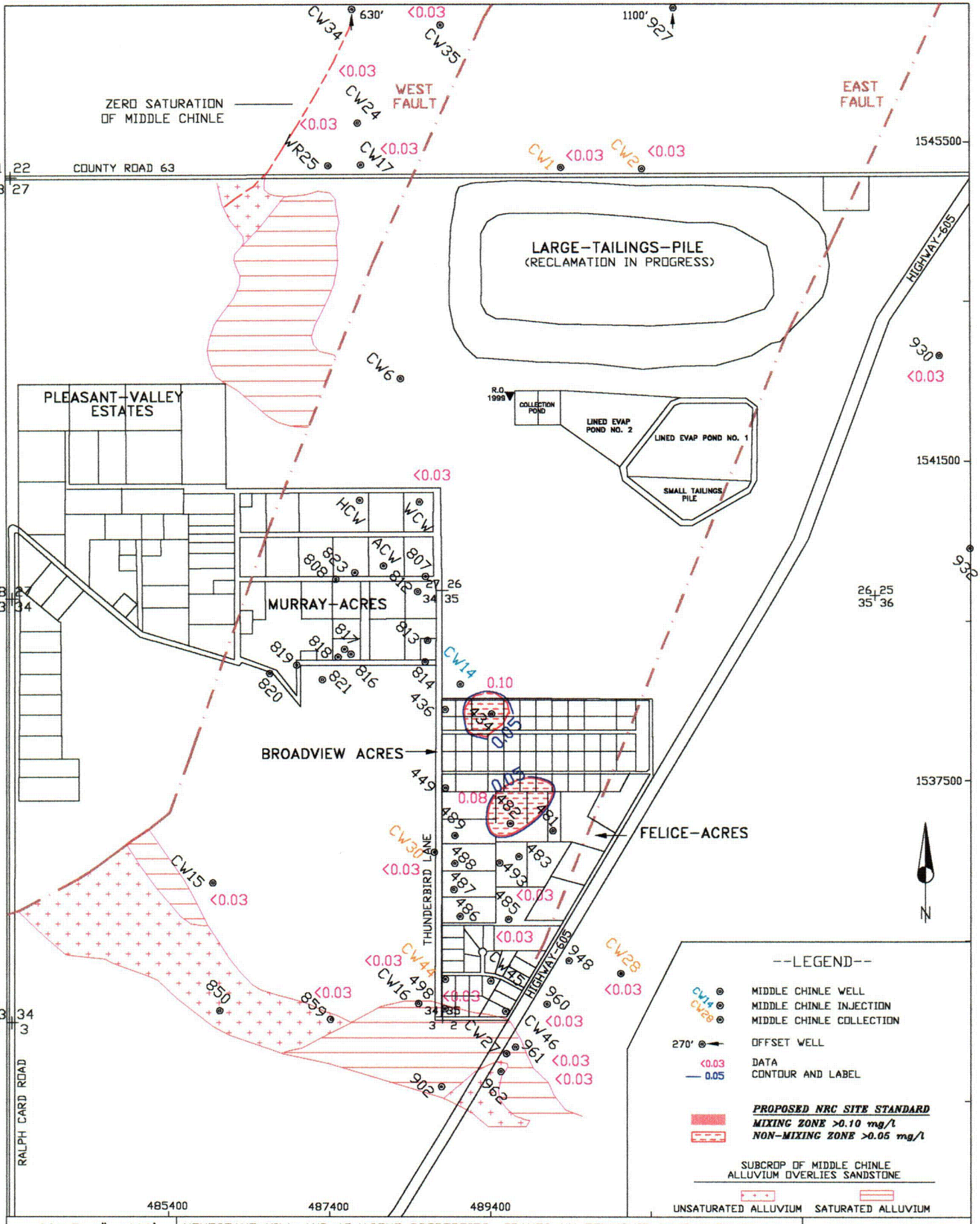

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FIGURE 6.3-17. MOLYBDENUM CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, mg/l

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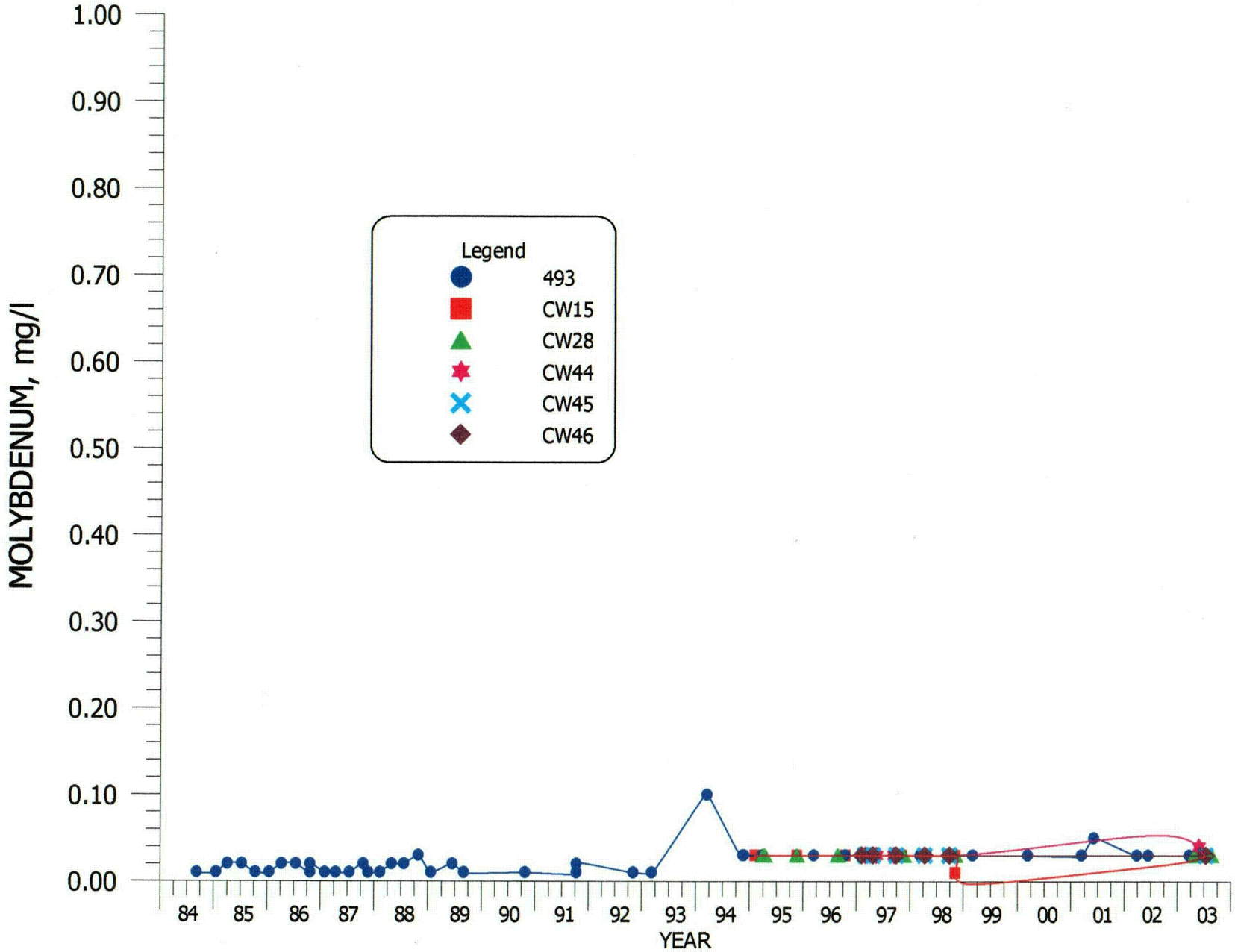


FIGURE 6.3-18. MOLYBDENUM CONCENTRATIONS FOR WELLS 493, CW15, CW28, CW44, CW45 AND CW46.

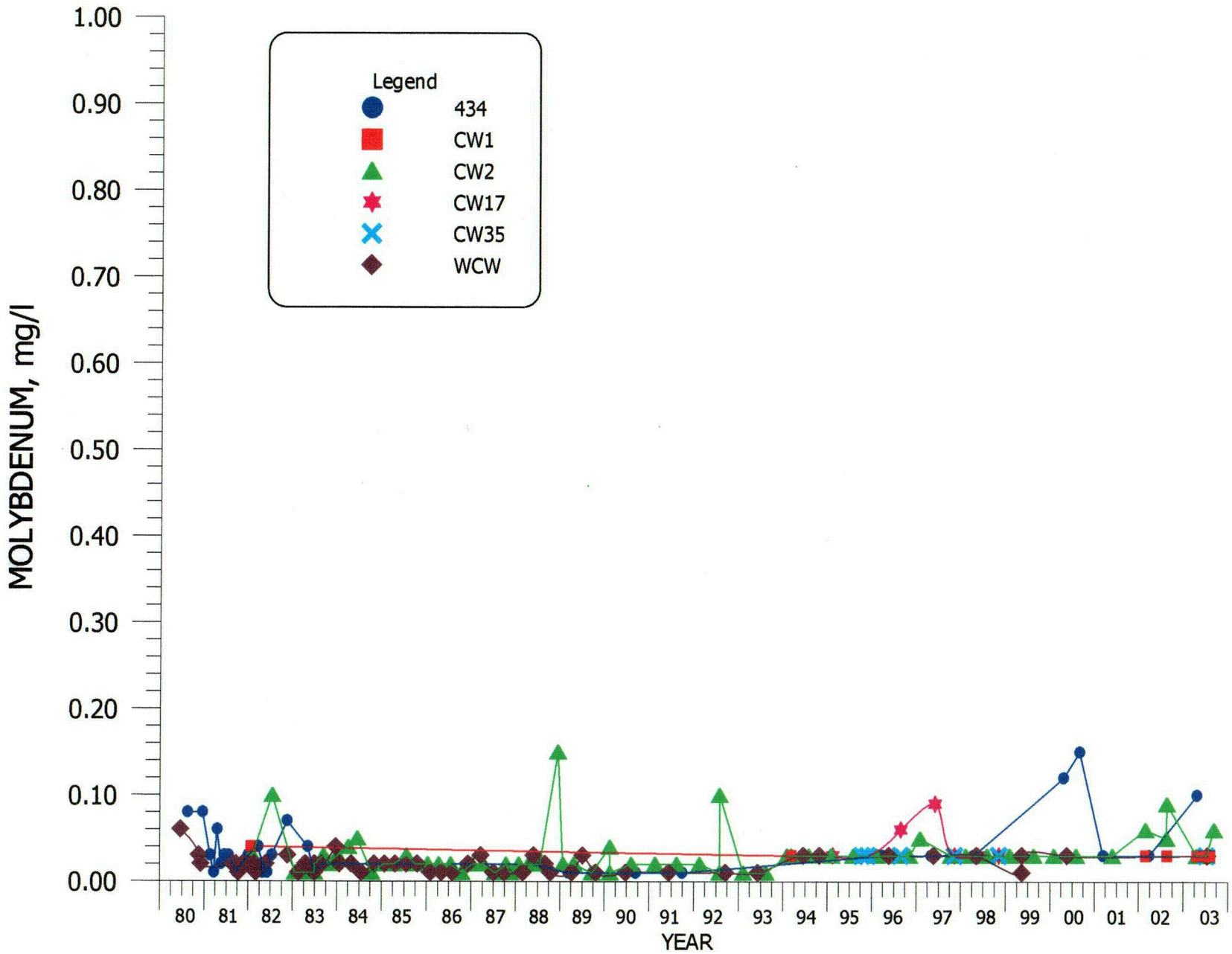
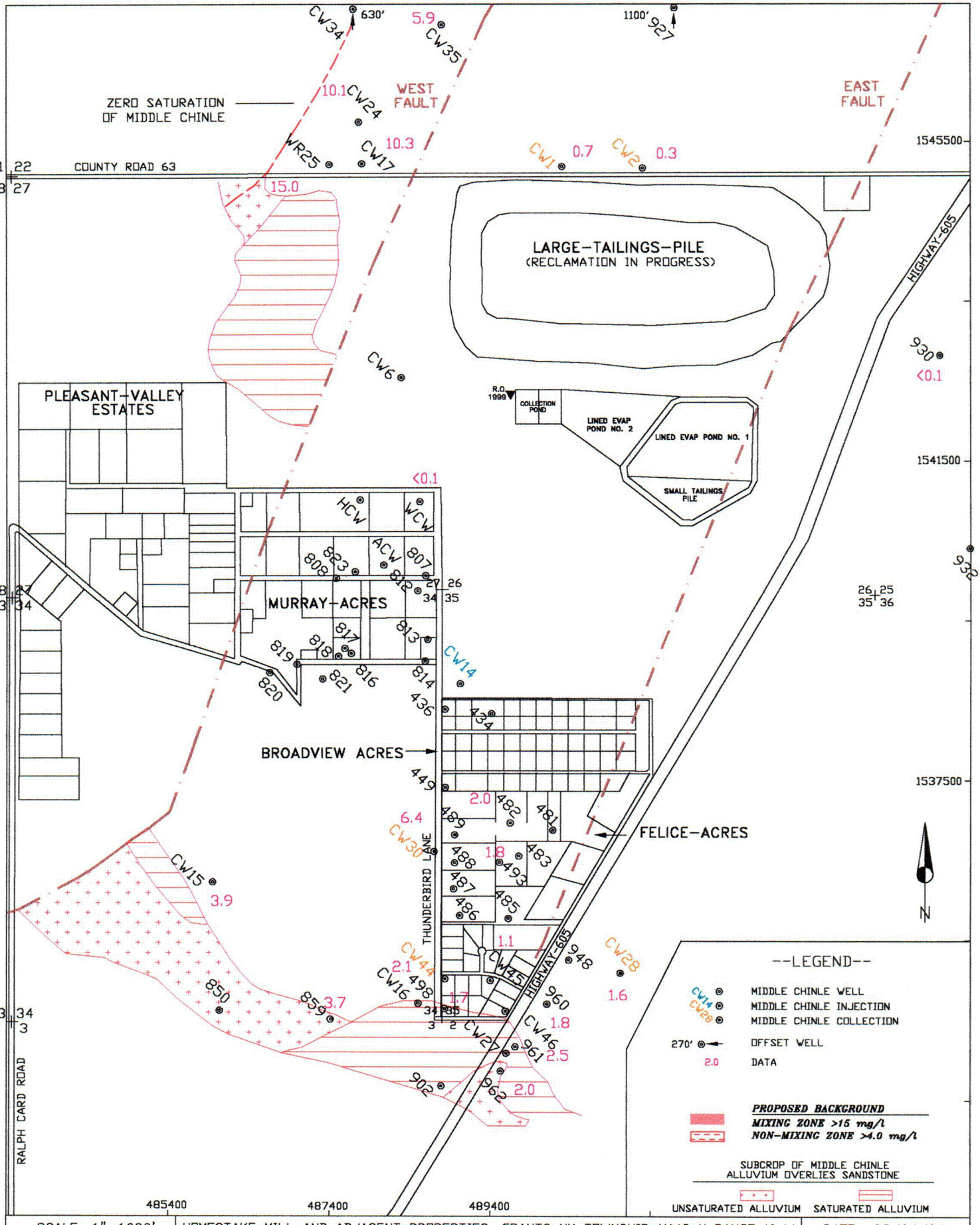


FIGURE 6.3-19. MOLYBDENUM CONCENTRATIONS FOR WELLS 434, CW1, CW2, CW17, CW35 AND WCW.

C202



SCALE: 1"=1600' | HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W | DATE: 03/04/04

FIGURE 6.3-20. NITRATE CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, mg/l

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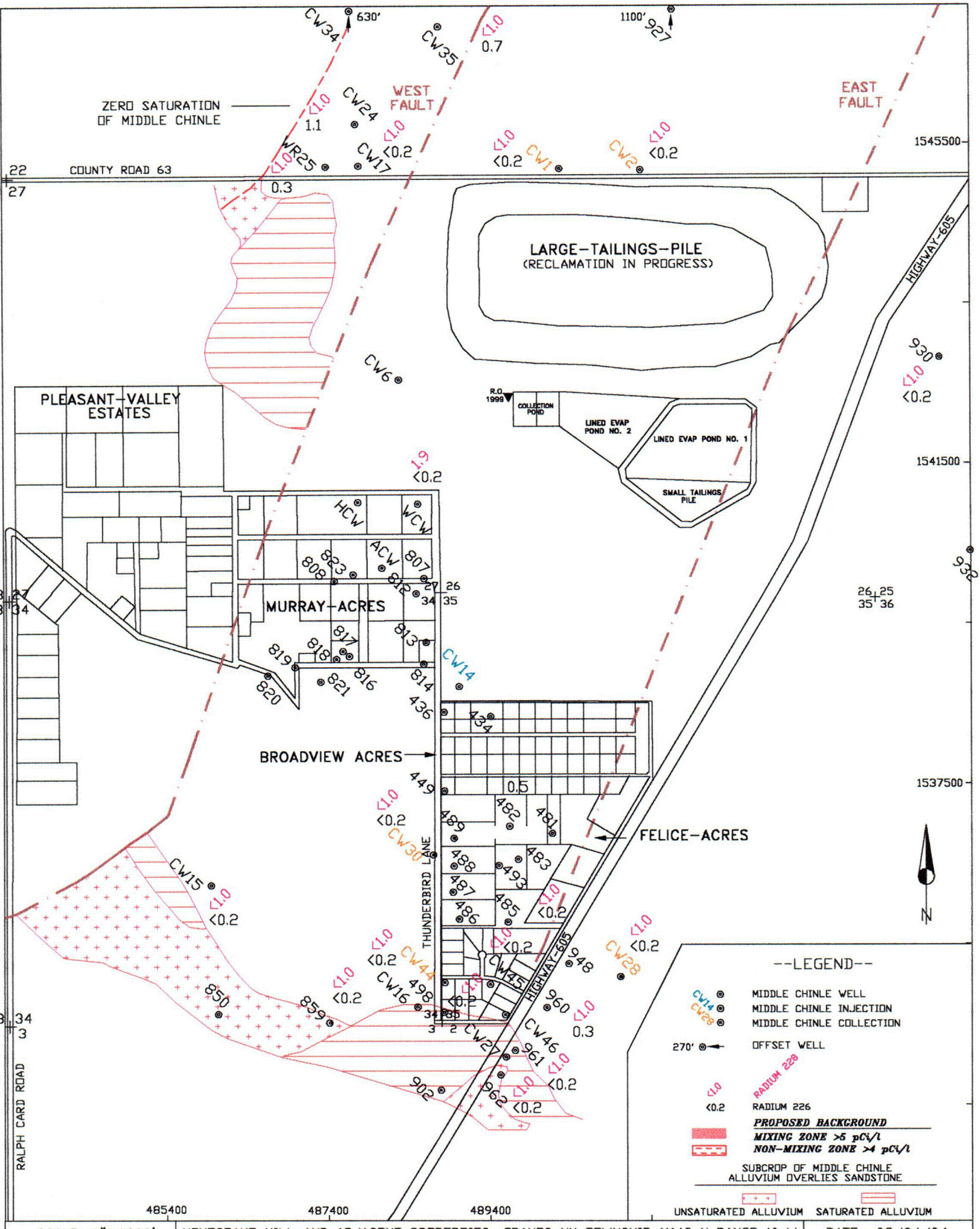

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FIGURE 6.3-21. RADIUM 226+228 CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, pCi/l

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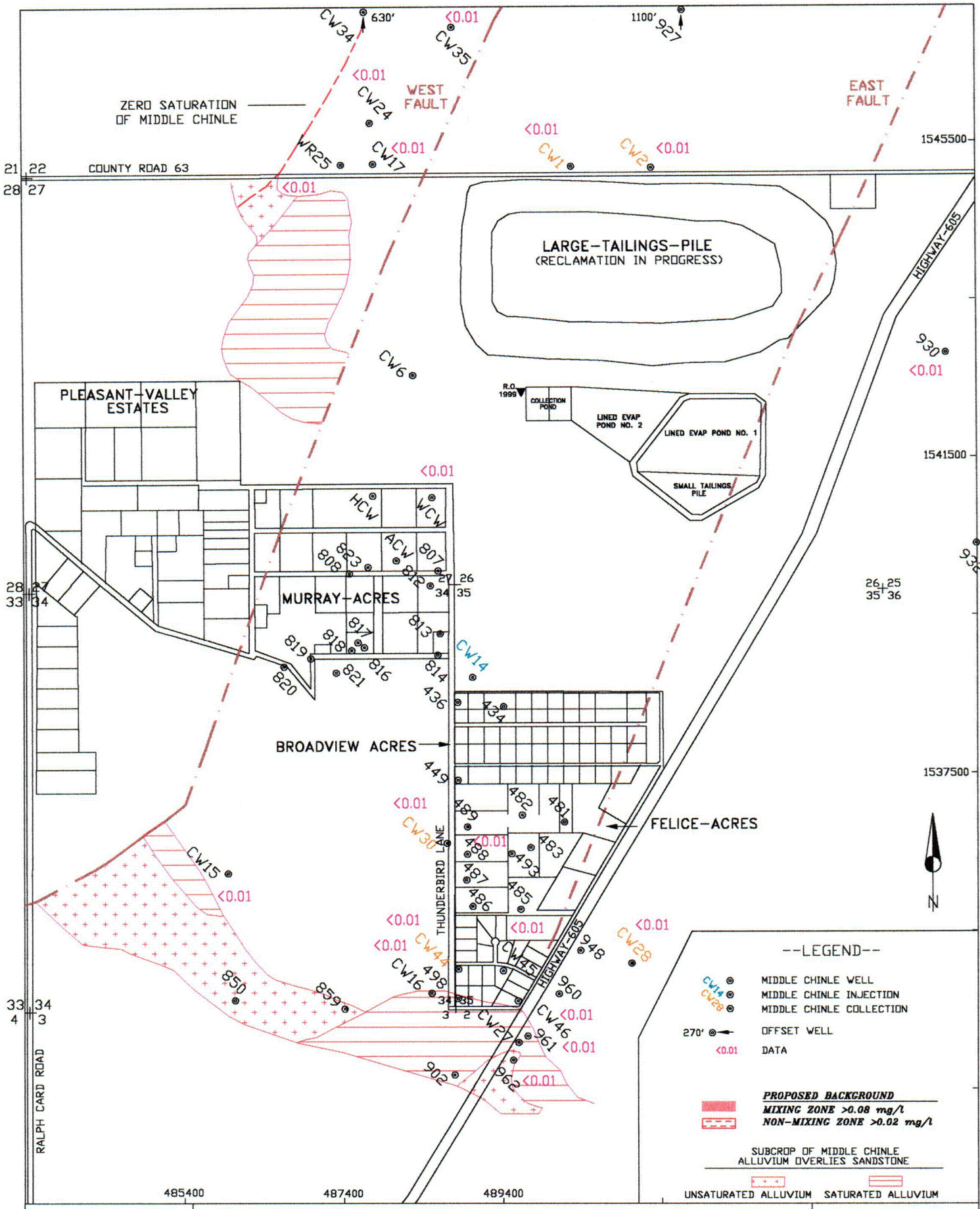

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FIGURE 6.3-22. VANADIUM CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, mg/l

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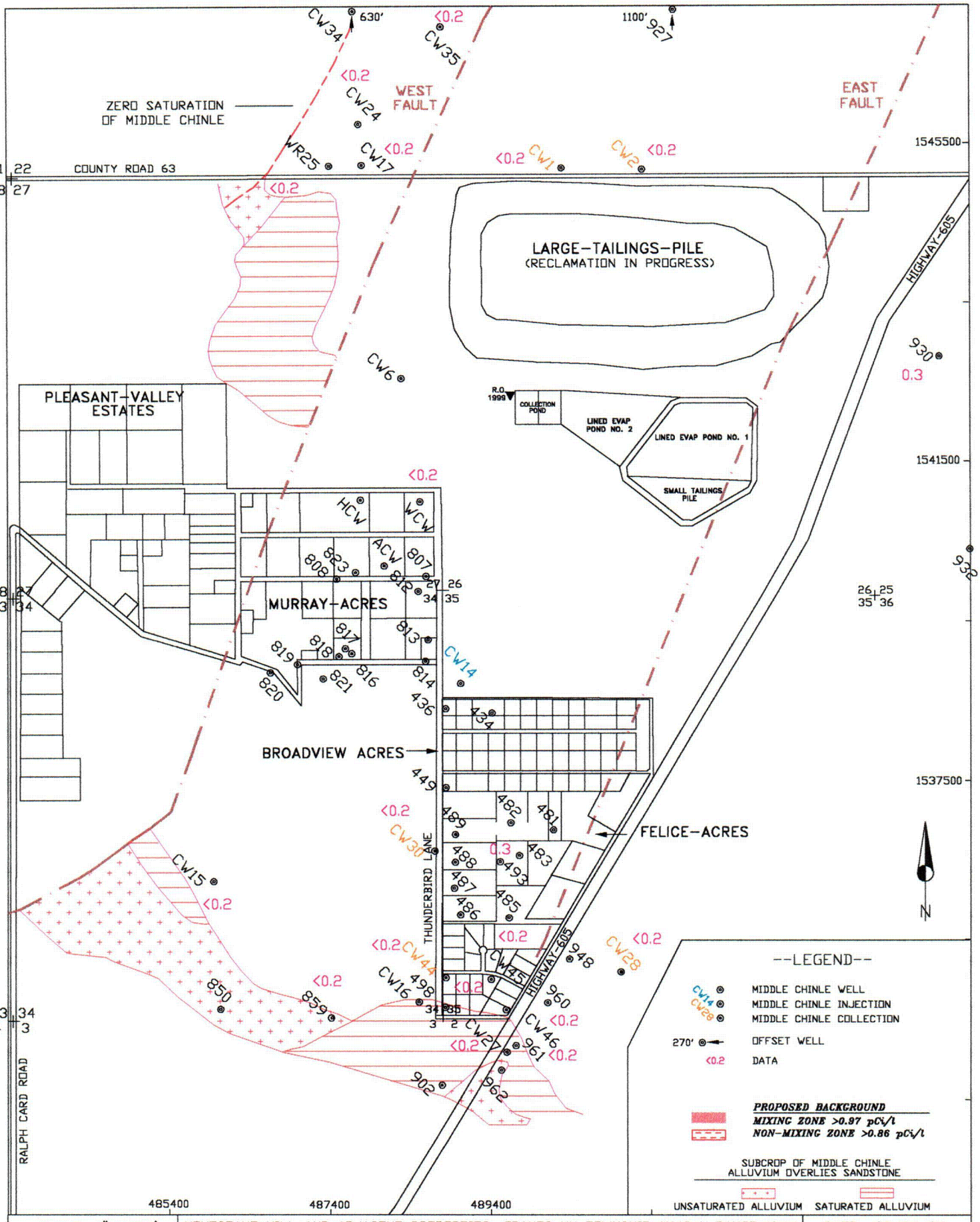

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FIGURE 6.3-23. THORIUM-230 CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2003, pCi/l

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SECTION 7

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GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES

SECTION 7

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GROUND WATER MONITORING
FOR HOMESTAKE'S GRANTS PROJECT

FIGURES
(continued)

7.0 LOWER CHINLE AQUIFER MONITORING

7.1 LOWER CHINLE WELL COMPLETION

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

Wells that are completed in the Lower Chinle aquifer are shown on Figure 7.1-1. Two new Lower Chinle wells were drilled in late 2003 in Section 3 for use in the restoration of this area. The two new wells 538 and 539 were sampled in early 2004 and included in this report. Chinle shale exists above the top of the Lower Chinle aquifer in the area with the dot pattern. This figure also shows the location of the Chinle shale subcrop. The cyan crosshatch pattern shows where the alluvium is saturated in the subcrop area, while the plus-sign pattern shows where the alluvium is not saturated in the subcrop area. Well CW29 was used as a fresh-water injection supply well beginning in February of 2003 while well 653 was used for the fourth year as an irrigation supply well.

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FIGURE 7.1-1. LIMITS OF LOWER CHINLE AQUIFER AND WELL LOCATIONS

C207

7.2 LOWER CHINLE WATER LEVELS

Water-level elevations in the Lower Chinle wells are presented along with the data for the Upper and Middle Chinle wells in Appendix A. Figure 7.2-1 presents water-level elevations in the Lower Chinle wells and the Fall of 2003 water-level elevation contours. The West and East Faults are also shown on this figure. The approximate alluvial-Lower Chinle subcrop areas are also shown on this figure. Flow west of the West Fault in the Lower Chinle is mainly to the northeast. Flow between the two faults is to the northeast in the area of the tailings. The flow is to the northwest in the southern portion of the Lower Chinle aquifer between the faults. The northwesterly flow direction in this area indicates that the Lower Chinle water moves across the West Fault in the area west of Broadview Acres. Lower Chinle water levels in 2003 were lower in Section 3 as a result of continued pumping for the purposes of providing irrigation and fresh-water supply, and because of the drought. A depression exists in the Lower Chinle piezometric surface around fresh-water supply well CW29 due to its pumping.

The Lower Chinle wells for which water-level time plots were prepared are shown on Figure 7.2-2. Water levels are presented for Lower Chinle wells 653, CW26, CW29, CW41 and CW42 on Figure 7.2-3. Water levels in Lower Chinle well 653, which has been used for an irrigation supply well, vary due to the variable pumping rate but have generally declined under static conditions during the last few years. Water levels gradually decreased in Lower Chinle well CW29 prior to its use as a fresh-water injection supply well in 2003. Small water-level decreases have been observed over the last few years in Lower Chinle wells CW26, CW41 and CW42, except that an increase was observed in well CW41 during late 2003.

Figure 7.2-4 presents water-level elevations versus time for Lower Chinle wells CW31, CW32, CW33, CW37 and CW43 (see Figure 7.2-2 for location of these wells). Water levels have gradually declined over the last few years in wells CW31, CW37 and CW43, while they have been fairly steady in well CW33. Water levels have decreased in Lower Chinle well CW32 for several years, and this overall trend continued in 2003. The rate and quantity of decrease in this Lower Chinle well is similar to those observed in the alluvial and San Andres aquifers to the west in Sections 29, 32 and 33. These declines are different than the steady alluvial water levels near well CW32. This indicates that the Lower Chinle aquifer near well

CW32 is hydrologically connected to the alluvial aquifer west of this area but not connected to the alluvial aquifer in its area.

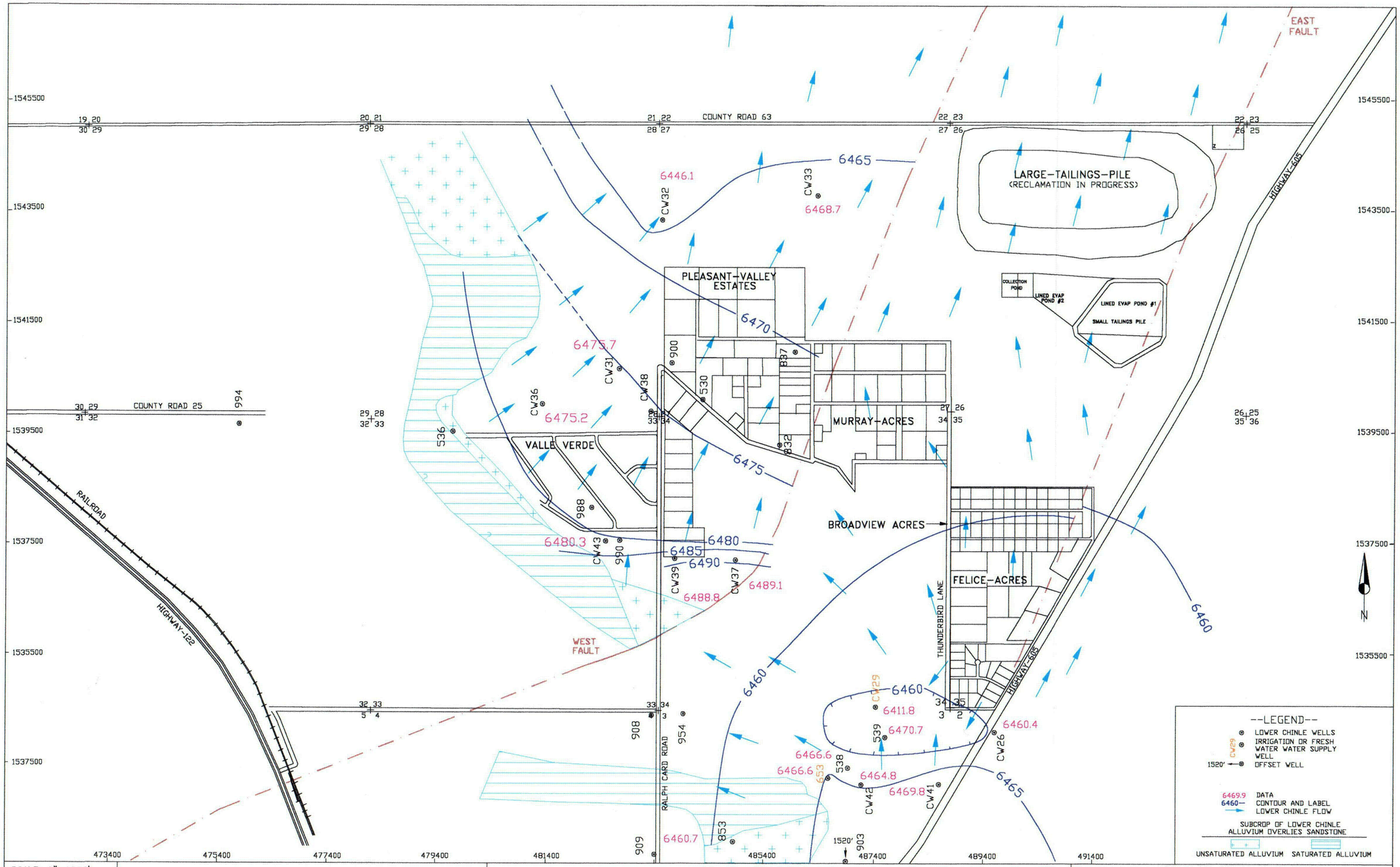

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FIGURE 7.2-1. WATER-LEVEL ELEVATIONS OF THE LOWER CHINLE AQUIFER, FALL 2003, FT-MSL

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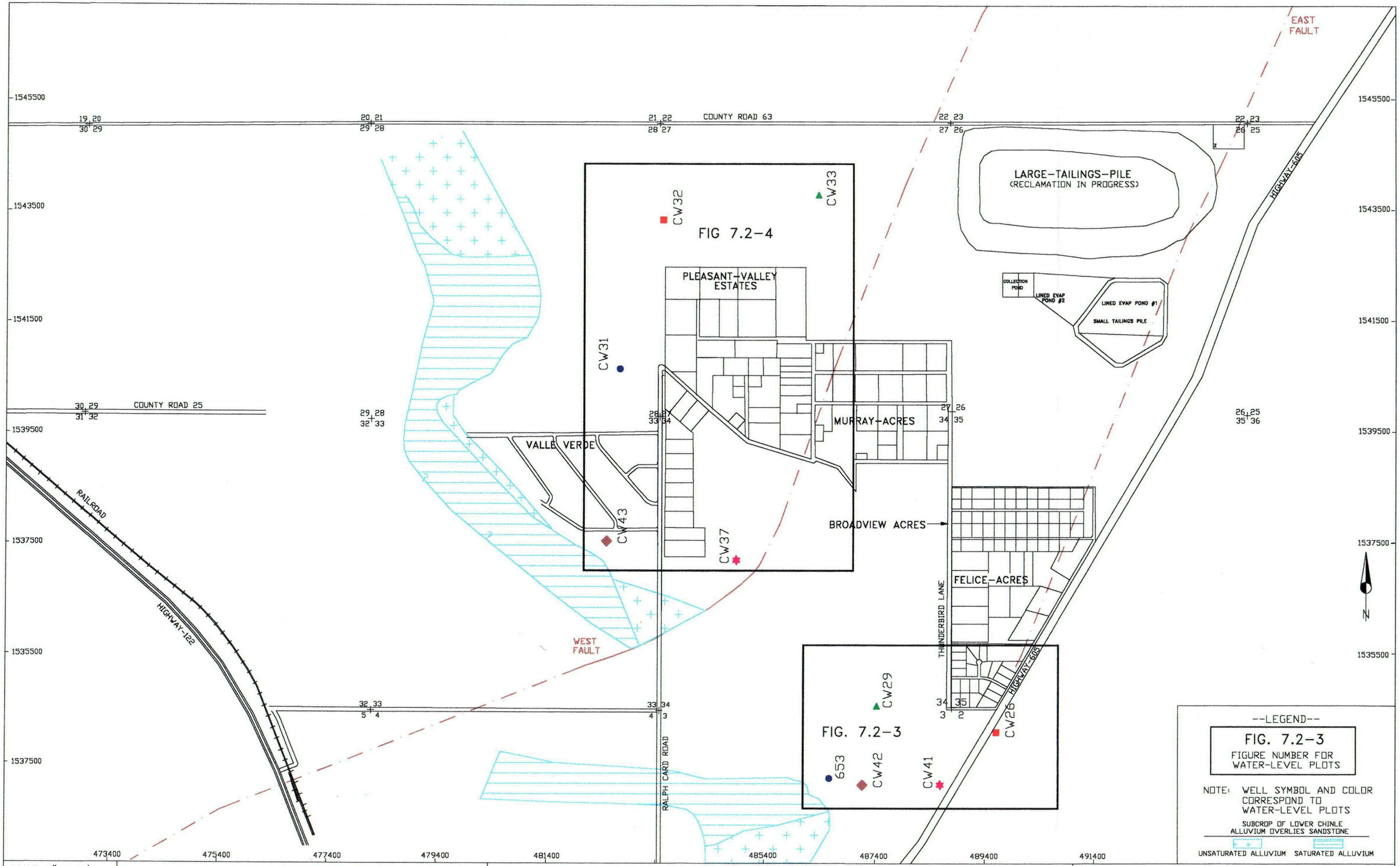

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FIGURE 7.2-2. LOCATION OF LOWER CHINLE WELLS WITH WATER-LEVEL PLOTS

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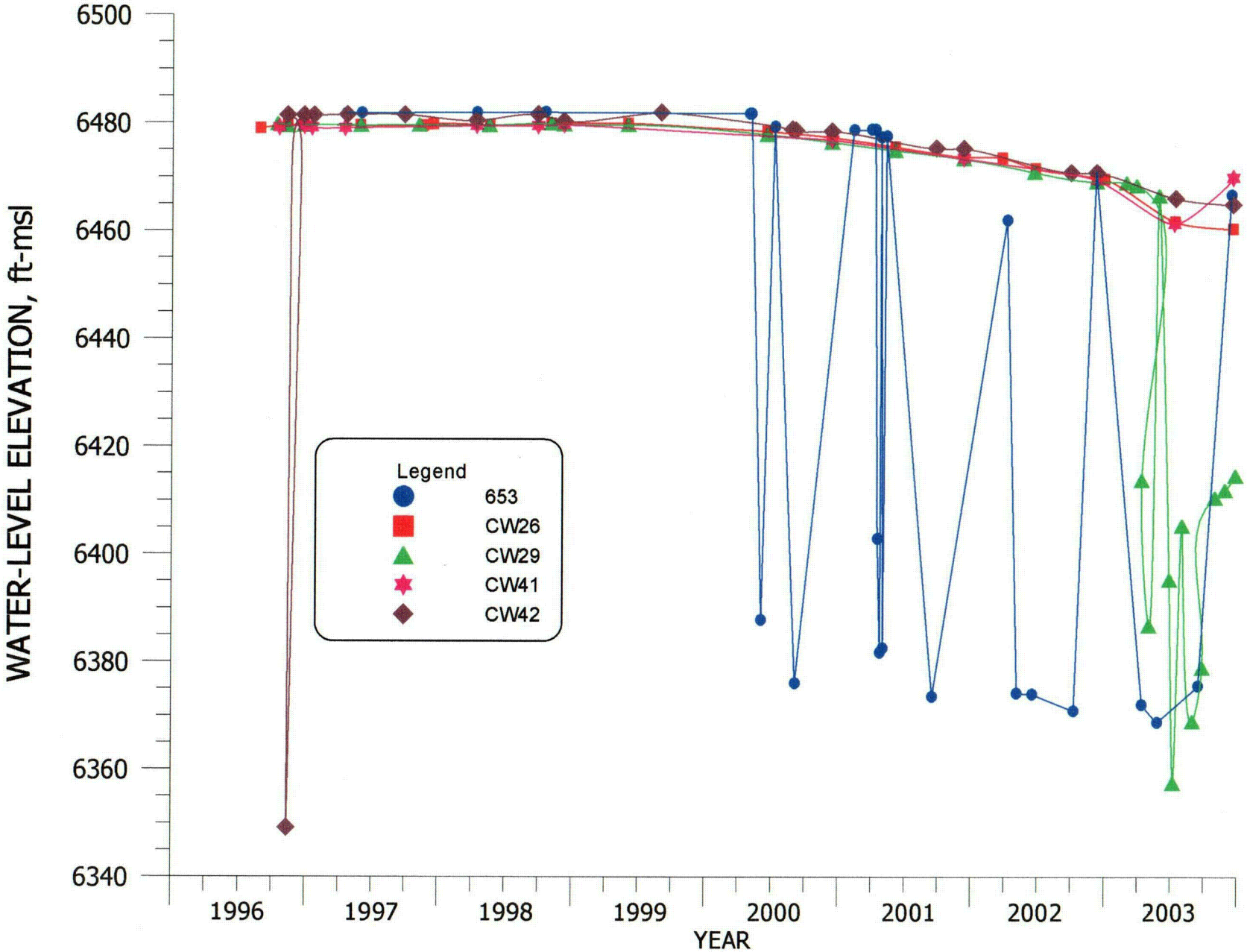

FIGURE 7.2-3. WATER-LEVEL ELEVATION FOR WELLS 653, CW26, CW29, CW41 AND CW42.

C210

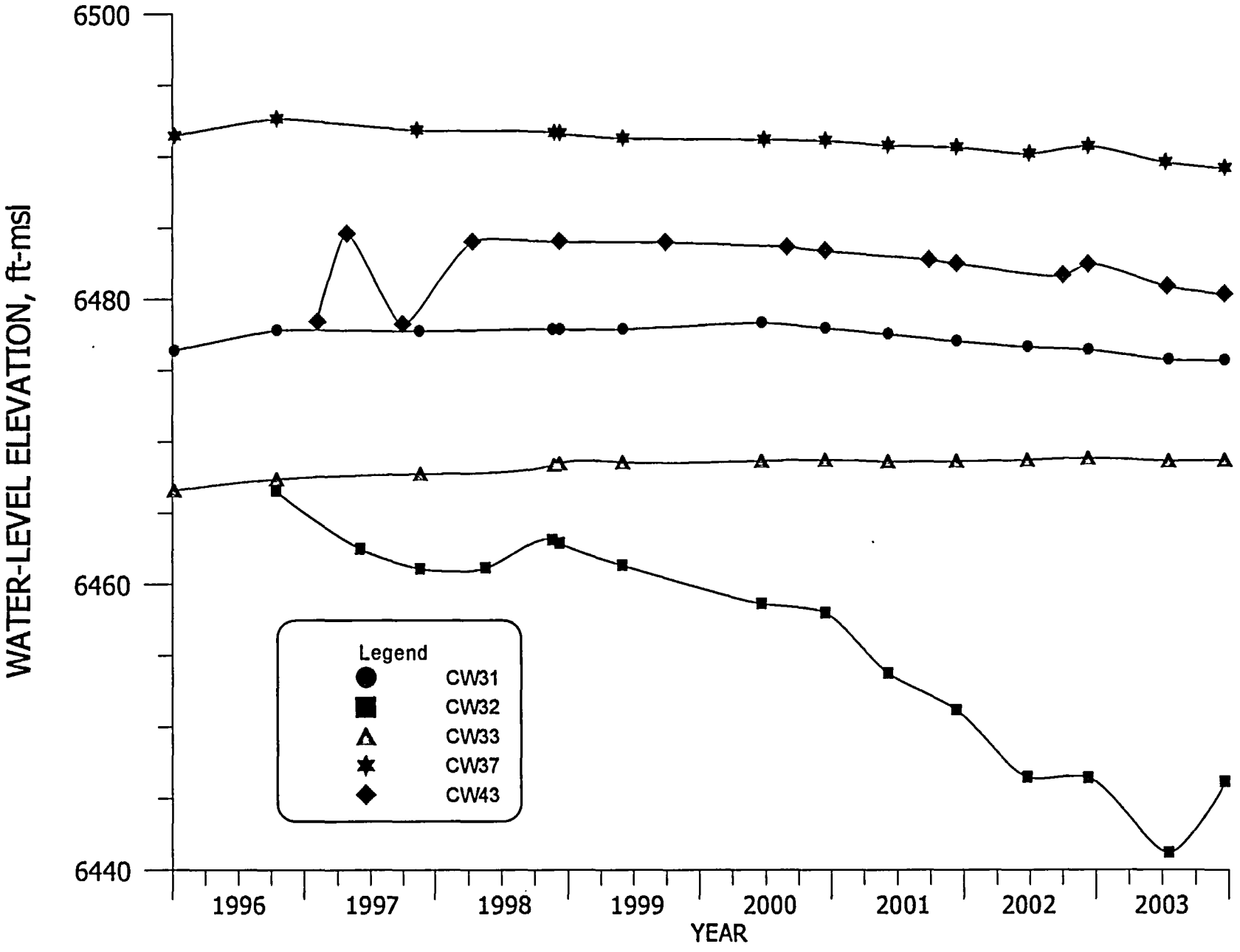

FIGURE 7.2-4. WATER-LEVEL ELEVATION FOR WELLS CW31, CW32, CW33, CW37 AND CW43.

7.3 LOWER CHINLE WATER QUALITY

Water-quality data for 2003 for the Lower Chinle aquifer is presented in Tables B.5-1 and B.5-2 of Appendix B along with water-quality data for the other Chinle aquifer wells. The basic well data presented in Tables 5.1-1 through 5.1-4, and the orientation of the well name on Figure 5.1-1 show which of the Chinle wells are completed in the Lower Chinle.

The water quality in the Lower Chinle aquifer exceeds background conditions only in Section 3, except for some natural exceedances in the far down-gradient wells. Sulfate concentrations in the Lower Chinle aquifer are within the proposed NRC standards except in far down-gradient well CW33, which only slightly exceeds the non-mixing background value. This concentration is thought to be of natural origin and only slightly exceeds the 95th percentile level of the data base. Uranium and selenium concentrations exceed the proposed NRC site standards only in the central portion of Section 3. Molybdenum concentrations in the Lower Chinle aquifer are all less than the limit of detection.

7.3.1 SULFATE – LOWER CHINLE

Figure 7.3-1 presents contours of sulfate concentrations in the Lower Chinle aquifer during 2003. The Lower Chinle concentrations varied from 254 to 2060 mg/l. Only the value from well CW33 exceeded the full range in non-mixing zone background concentration of 2000 mg/l. This concentration is thought to be naturally occurring and only slightly exceeds the full range of background. None of the Lower Chinle concentrations in the mixing zone (see Section 3 and Figure 7.3-2 for zone areas) exceeded the mixing-zone sulfate background value of 1750 mg/l. Proposed NRC Lower Chinle standards based on background data are presented for sulfate in the legend of Figure 7.3-1. Therefore, sulfate in this aquifer does not require any restoration.

The locations of wells used in the plots of water quality for the Lower Chinle are presented on Figure 7.3-2. Figure 7.3-2 shows that Lower Chinle wells 653, CW26, CW29, CW41 and CW42 are grouped together on the water-quality time plots, and wells CW31, CW32, CW33, CW37 and CW43 are grouped together on a separate second plot.

Figure 7.3-3 presents sulfate concentrations plotted versus time for the above listed Lower Chinle wells. The sulfate concentrations in water collected from each of these wells are

less than that in the mixing-zone background well, showing that restoration of the Lower Chinle is not needed in the southern portion of the aquifer.

Sulfate concentrations plotted for Lower Chinle wells CW31, CW32, CW33, CW37 and CW43 are presented on Figure 7.3-4 (see Figure 7.3-2 for location of these wells). There is not any significant trend in these Lower Chinle wells over the last few years, and only four values from well CW33 have exceeded the non-mixing zone background concentration of 2000 mg/l.

7.3.2 TOTAL DISSOLVED SOLIDS – LOWER CHINLE

Figure 7.3-5 presents the total dissolved solids (TDS) concentrations in the Lower Chinle aquifer during 2003. All concentrations are less than the non-mixing zone value of 4140 mg/l. Concentrations are thought to naturally exceed this level farther down-gradient as shown by the cyan pattern. The TDS concentration naturally increases down-gradient due to the low permeability, and thus the slow movement of water through this aquifer.

Figure 7.3-6 presents TDS concentrations for Upper Chinle wells 653, CW26, CW29, CW41 and CW42. In these wells TDS concentrations have been fairly steady. All of these concentrations are below the mixing-zone background level of 3140 mg/l except for one outlier from well CW26.

TDS concentrations for wells CW31, CW32, CW33, CW37 and CW43 are presented on Figure 7.3-7. This figure demonstrates that, overall, TDS concentrations have remained fairly stable during the last few years. Additionally, these TDS concentrations are well within the range of natural fluctuation in the Lower Chinle aquifer, except for the one outlier from well CW32 in 1999.

7.3.3 CHLORIDE – LOWER CHINLE

Chloride concentrations in the Lower Chinle aquifer during 2003 are presented on Figure 7.3-8. The range of observed chloride concentrations is from less than 100 to greater than 600 mg/l due to natural increase in levels as the water moves down-gradient. The chloride concentrations are all less than the proposed NRC standards except for those in water from well

CW32. This elevated concentration is thought to be natural, and is just slightly above the 95th percentile for this data set.

Chloride concentrations for Lower Chinle wells 653, CW26, CW29, CW41 and CW42 are plotted on Figure 7.3-9. The chloride concentrations in Lower Chinle wells CW26 and CW41 are gradually increasing with time but are well within the limits of natural variation in this aquifer.

Chloride concentrations with time in wells CW31, CW32, CW33, CW37 and CW43 are presented on Figure 7.3-10. This plot shows that chloride concentrations have been fairly consistent after initial variations were observed shortly after the wells were drilled.

7.3.4 URANIUM – LOWER CHINLE

Uranium concentration in the Lower Chinle aquifer is an important parameter for purposes of aquifer restoration in Section 3. Figure 7.3-11 presents the uranium concentrations in the Lower Chinle aquifer for 2003. Only three of the uranium concentrations in the Lower Chinle exceeded the mixing-zone background concentration, and three exceeded the non-mixing zone background concentration. The highest values are in the central portion of Section 3 in water collected from wells 538, 653 and CW42. These concentrations should gradually decrease to less than background concentrations with the continuing use of this water in the irrigation program.

Uranium concentrations plotted versus time for Lower Chinle wells 653, CW26, CW29, CW41 and CW42 are presented on Figure 7.3-12. The small decreases in uranium concentrations in wells 653 and CW42 are due to the pumping of well 653 to obtain a water supply for the irrigation system. This plot shows an outlier uranium concentration in well 653 in early 2003. Uranium concentrations in wells CW26, CW29 and CW41 have stayed low.

The uranium concentrations in all of the Lower Chinle wells with data plots on Figure 7.3-13 have remained at low levels. Also, there are no discernable trends in the data for these wells.

7.3.5 SELENIUM – LOWER CHINLE

Selenium concentrations in the Lower Chinle aquifer for 2003 are presented on Figure 7.3-14. Only the selenium concentration in water from well CW42 exceeded the mixing-zone site standard of 0.14 mg/l. The proposed non-mixing zone NRC site standard of 0.32 mg/l was not exceeded in any of the Lower Chinle wells.

Figure 7.3-15 presents selenium concentration versus time plots for wells 653, CW26, CW29, CW41 and CW42. The selenium concentrations in the Lower Chinle aquifer in wells 653 and CW26 decreased in 2003, while an increase was observed in wells CW29 and CW42.

Figure 7.3-16 presents selenium concentrations plotted versus time for Lower Chinle wells CW31, CW32, CW33, CW37 and CW43. Selenium concentrations during 2003 for each of these wells remained low.

7.3.6 MOLYBDENUM – LOWER CHINLE

Molybdenum concentrations in water samples collected from the Lower Chinle wells were measured during 2003. Molybdenum concentrations in all Lower Chinle wells were less than the detection limit and, therefore, an area molybdenum concentration figure or time plots were not prepared. The 2003 results are consistent with historical measurements of molybdenum in the Lower Chinle aquifer. Molybdenum is not an important parameter in the Lower Chinle aquifer.

7.3.7 NITRATE – LOWER CHINLE

Nitrate monitoring of the Lower Chinle aquifer was updated in 2003 to confirm that concentrations remain significantly below the proposed background levels of 15 mg/l for the mixing zone and 3.0 mg/l for the non-mixing zone. All nitrate concentrations measured in 2003 were significantly below these background levels. A nitrate concentration figure was not developed and this constituent does not warrant routine monitoring in the Lower Chinle aquifer.

Plots of nitrate concentrations versus time were not prepared, because historically, values measured in Lower Chinle wells contained very low concentrations, similar to those measured in 2003. Nitrate concentrations are not expected to be significant in the future in the

Lower Chinle aquifer due to the very limited extent of elevated concentrations in the alluvial aquifer and does not warrant establishment of a site standard.

7.3.8 RADIUM-226 AND RADUIM-228 – LOWER CHINLE

All radium concentrations have been low in past years in the Lower Chinle aquifer. Radium is not an important parameter relative to the Lower Chinle aquifer and an NRC site standard for radium for the Lower Chinle is not warranted. Radium concentrations were analyzed in all Lower Chinle wells in 2003 to update the database. All radium-226 concentrations were less than the detection limit, except in wells CW32 and CW37. The higher value in well CW32 water has not been previously observed. All of the radium-228 concentrations are less than 1 pCi/l except in wells CW37 and CW41. These low levels of radium do not warrant the development of a radium area figure. Radium-228 concentrations vary considerably as reported by the laboratory from time to time. The previous radium-228 concentrations for wells CW37 and CW41 were less than the limit of detection. All radium-226 plus radium-228 values are less than the background levels. This data shows that radium-226 and radium-228 are not significant constituents in the Lower Chinle aquifer at the Homestake site. No concentration versus time plots were developed for radium, because previous values are similar to the low values observed in 2003.

7.3.9 VANADIUM - LOWER CHINLE

Vanadium concentrations have always been low in the Lower Chinle aquifer. Significant concentrations in the Lower Chinle aquifer would not be expected because this constituent has only been slightly elevated in the alluvial aquifer near the tailings. Vanadium concentrations in the Lower Chinle aquifer have never supported the use of this constituent as a site standard. The vanadium concentration database was updated in 2003 for the Lower Chinle aquifer. All the measured vanadium concentrations were less than the limit of detection. A vanadium site standard for the Lower Chinle aquifer is not warranted based on all historical and current data.

7.3.10 THORIUM-230 – LOWER CHINLE

Thorium-230 concentrations have never been significant in the Lower Chinle aquifer and, therefore, should be dropped from the Lower Chinle monitoring list and not added as a Lower Chinle standard. The thorium-230 concentrations measured in the Lower Chinle aquifer during 2003 were all less than the proposed background levels of 0.97 and 0.72 pCi/l for the mixing and non-mixing zones, respectively. No plots of thorium-230 concentrations with time were prepared, because concentrations have historically been low and similar to the 2003 values.

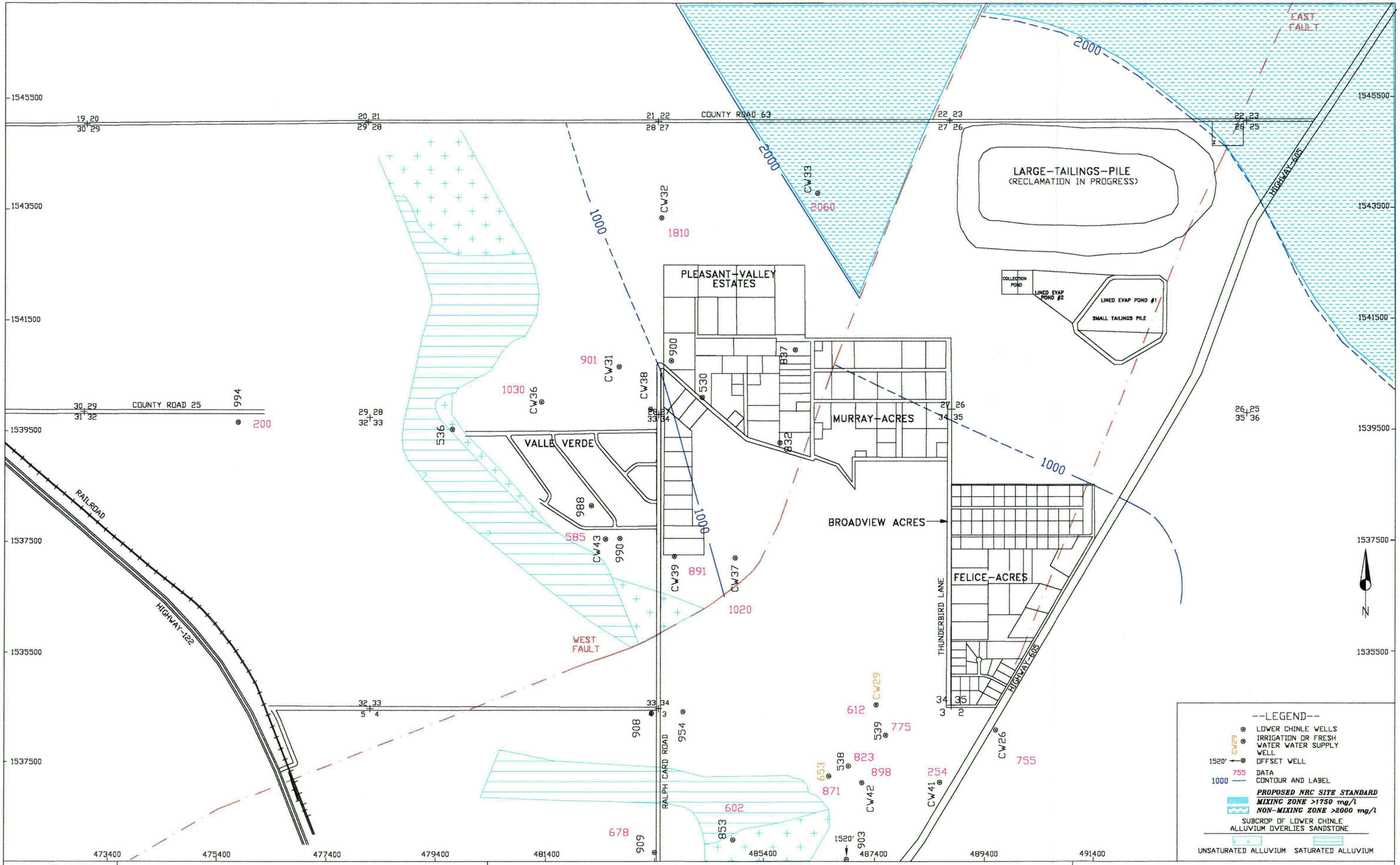

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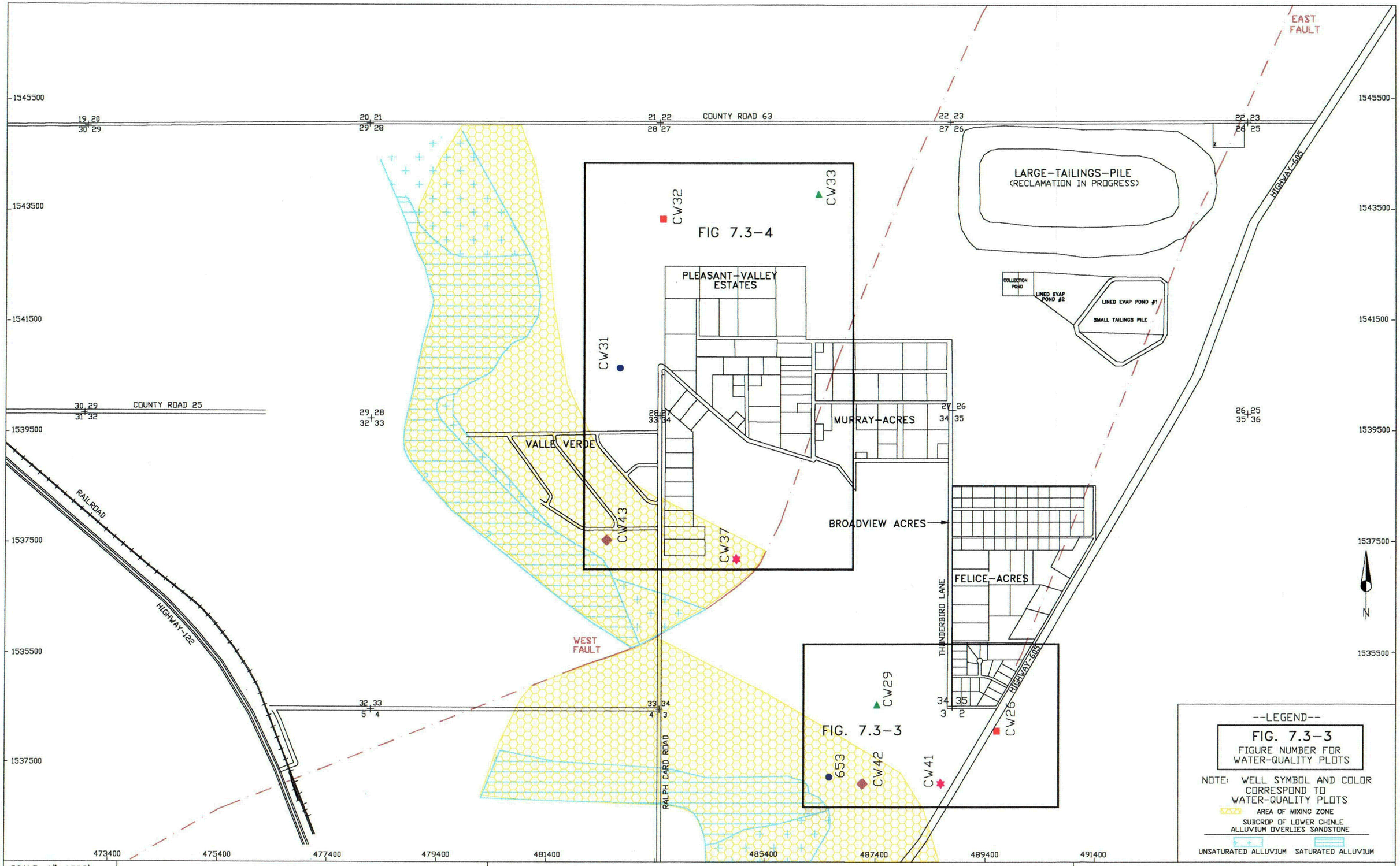
FIGURE 7.3-1 SULTATE CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2003, mg/l

C211



SCALE: 1"=1600'

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

FIGURE 7.3-2. LOCATION OF LOWER CHINLE WELLS WITH WATER-QUALITY PLOTS

C212

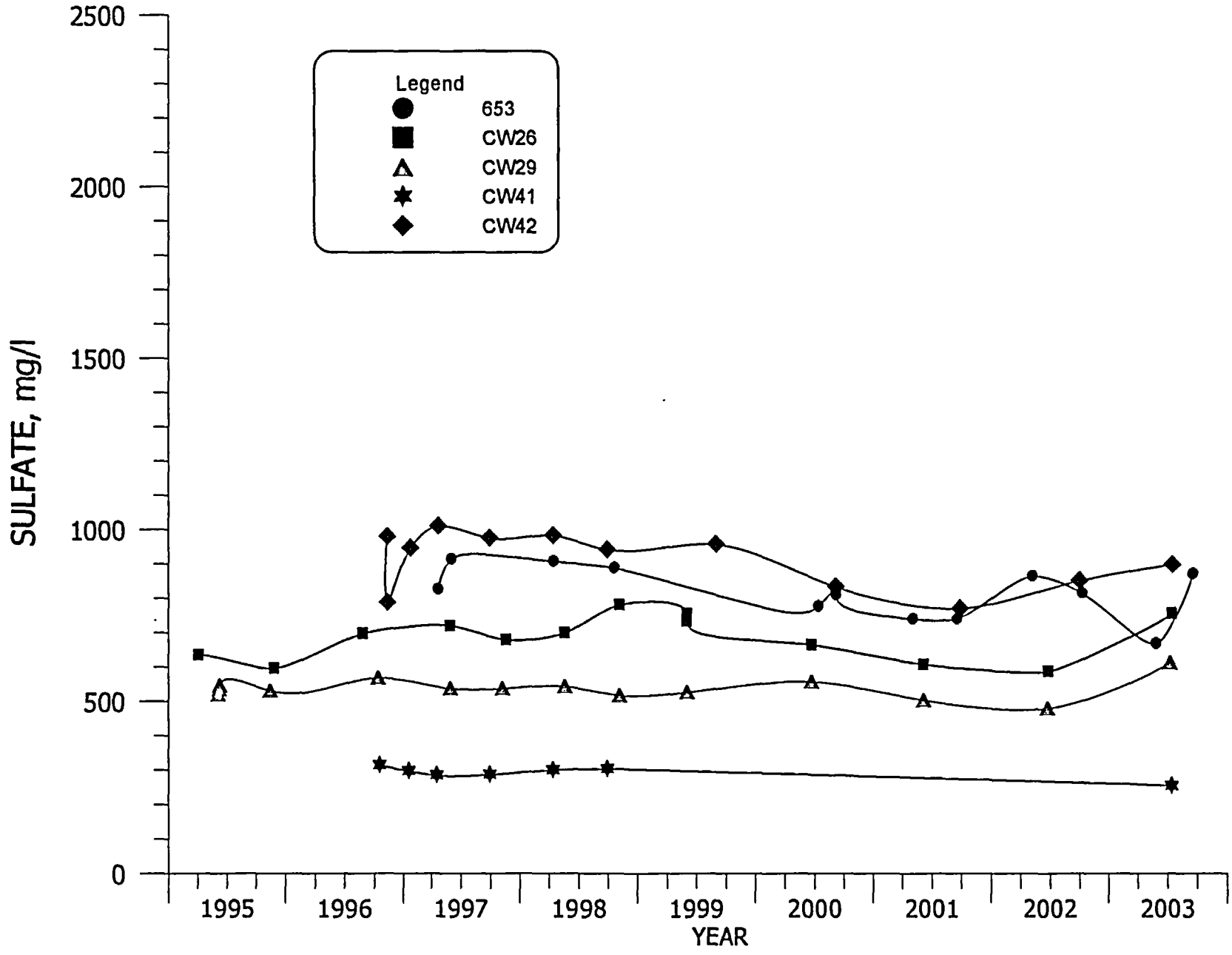


FIGURE 7.3-3. SULFATE CONCENTRATIONS FOR WELLS 653, CW26, CW29, CW41 AND CW42.

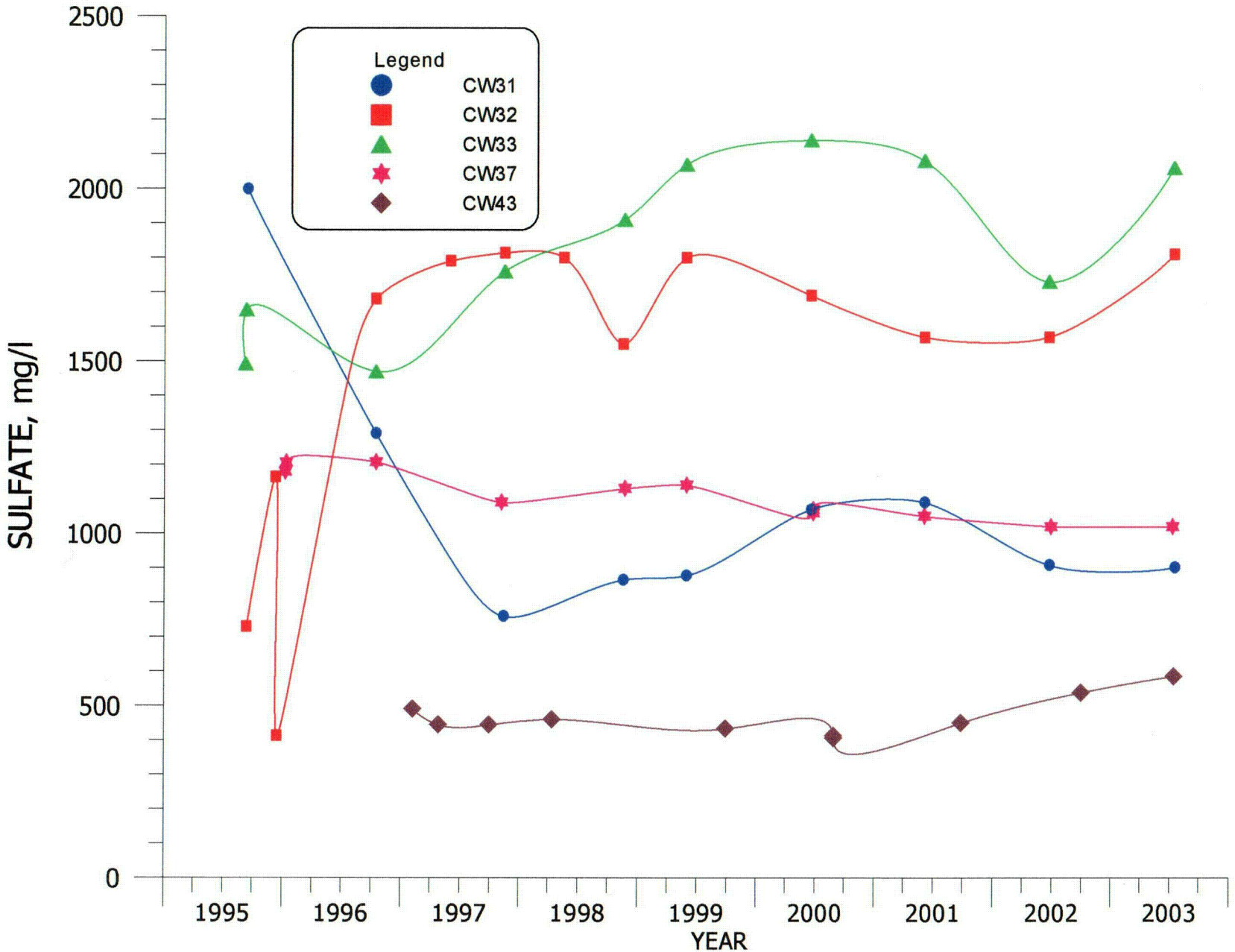
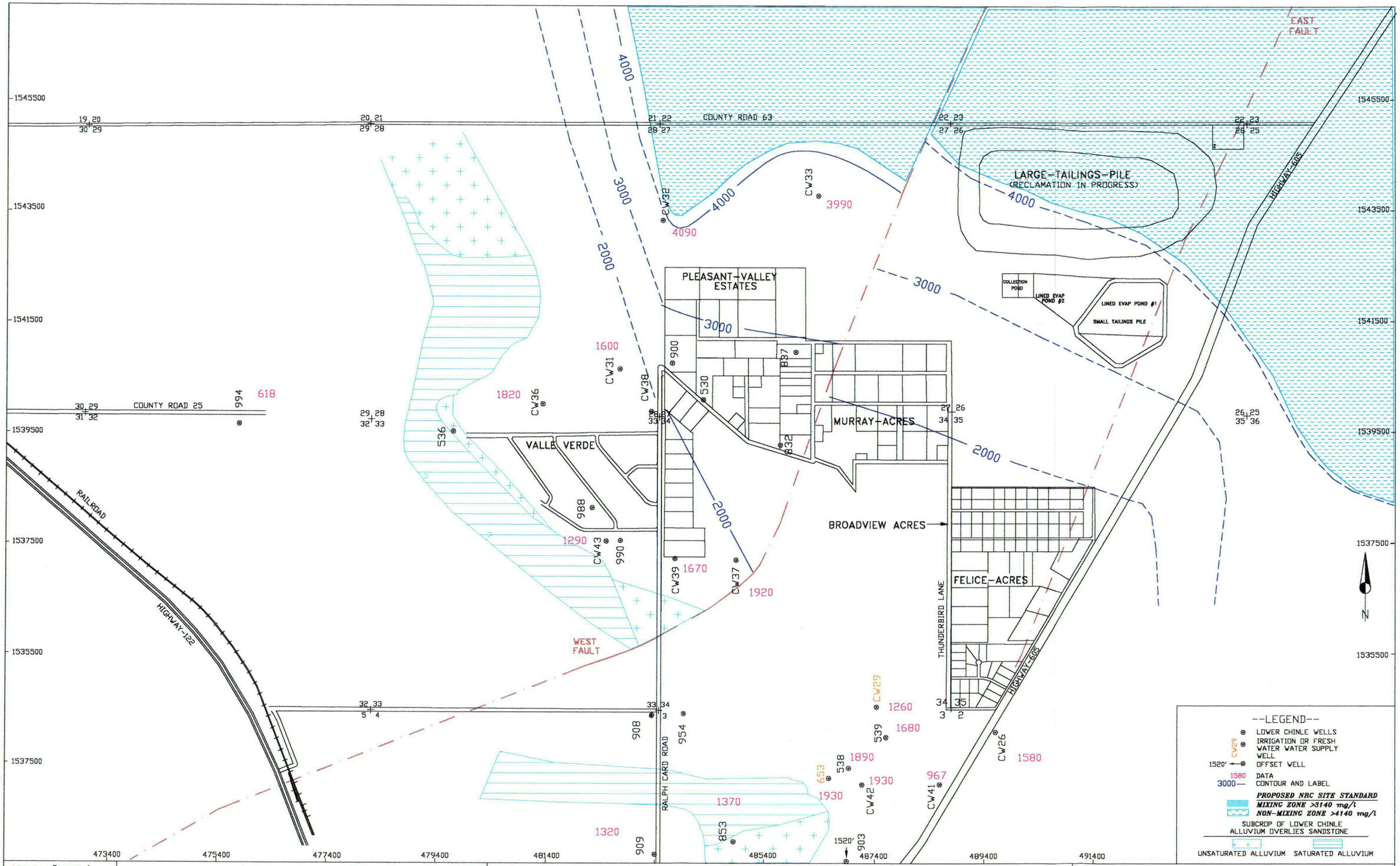


FIGURE 7.3-4. SULFATE CONCENTRATIONS FOR WELLS CW31, CW32, CW33, CW37 AND CW43.

CZ13



SCALE: 1"=1600'

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

FIGURE 7.3-5. TDS CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2003, mg/l

C214

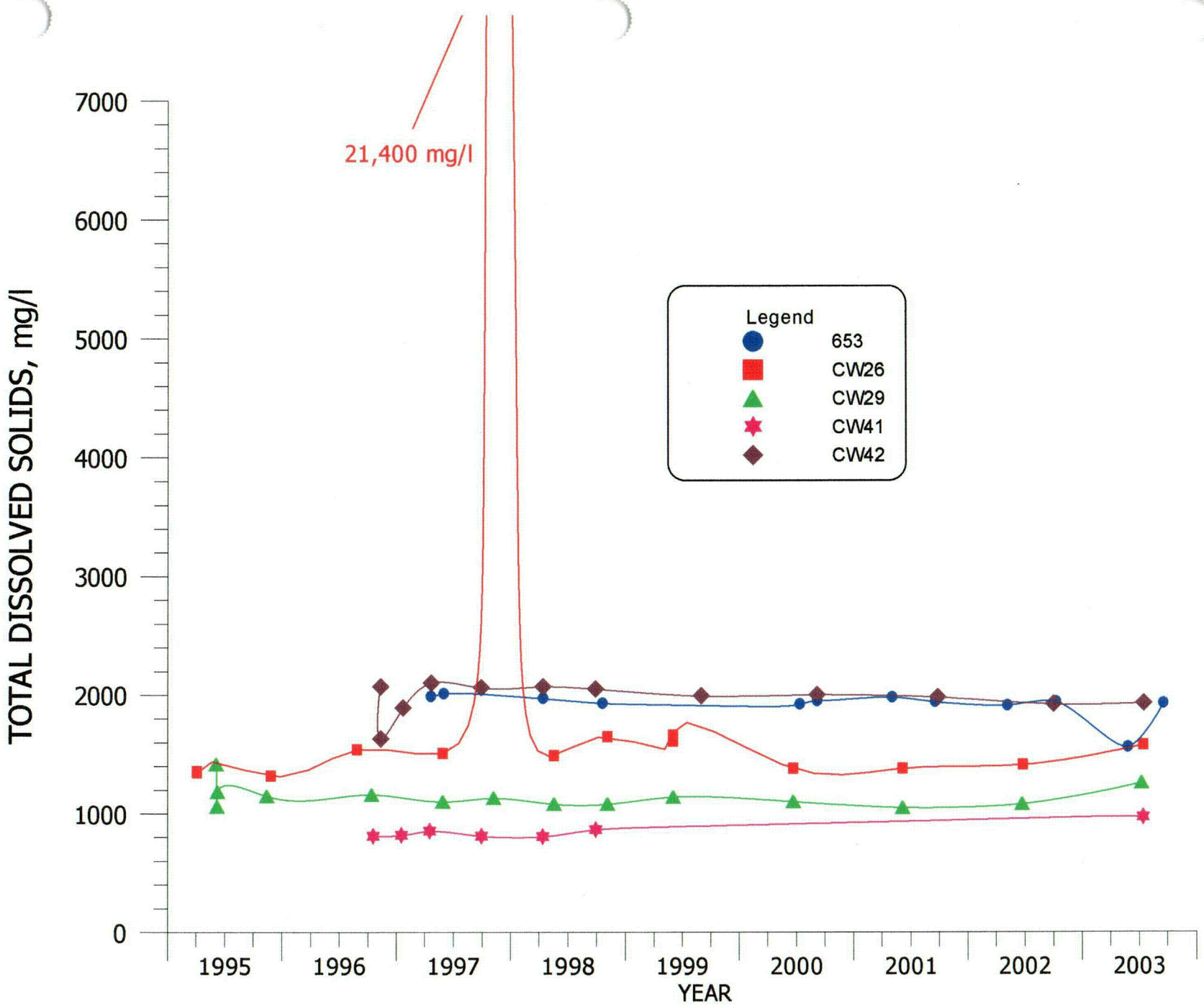


FIGURE 7.3-6. TDS CONCENTRATIONS FOR WELLS 653, CW26, CW29, CW41 AND CW42.

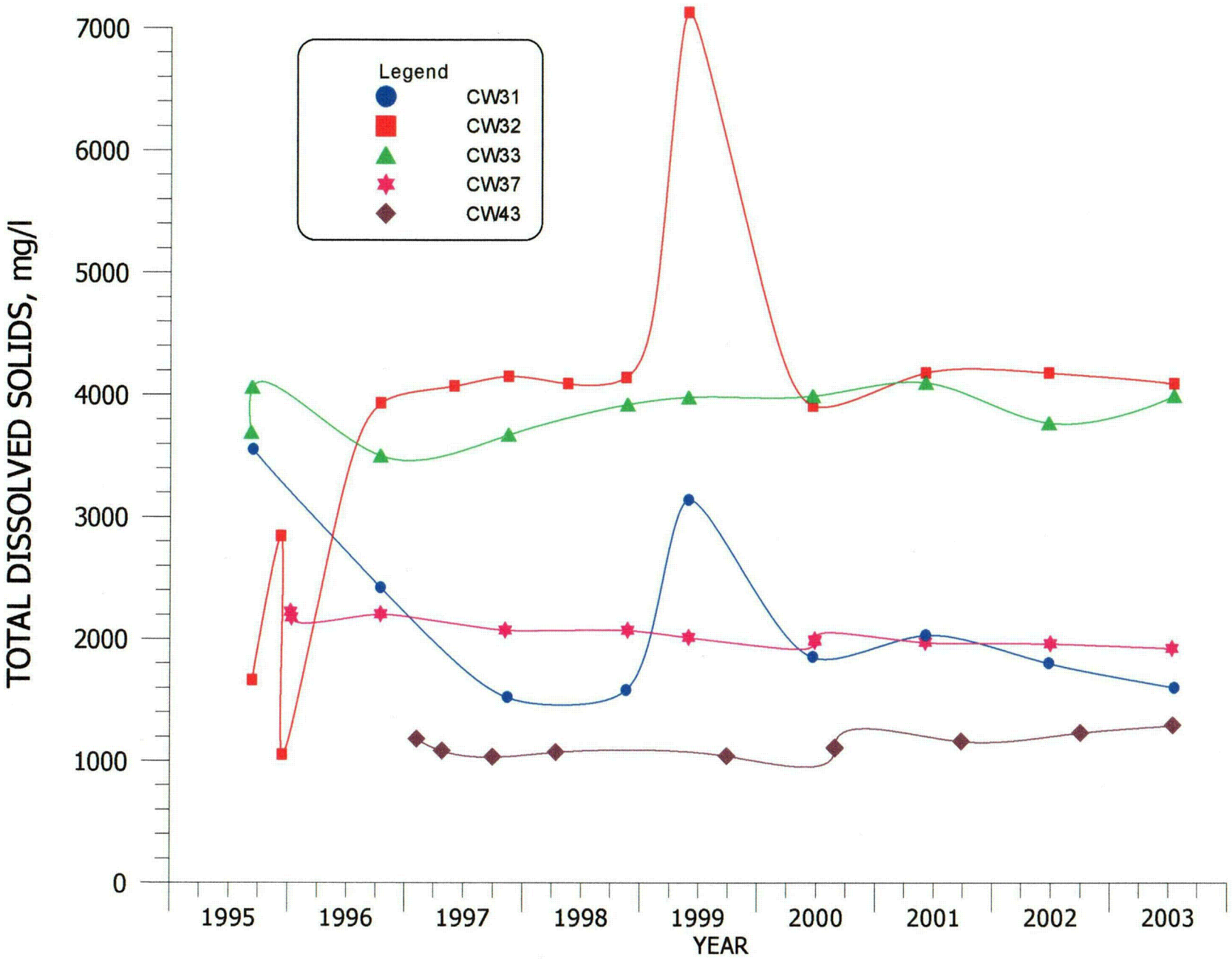
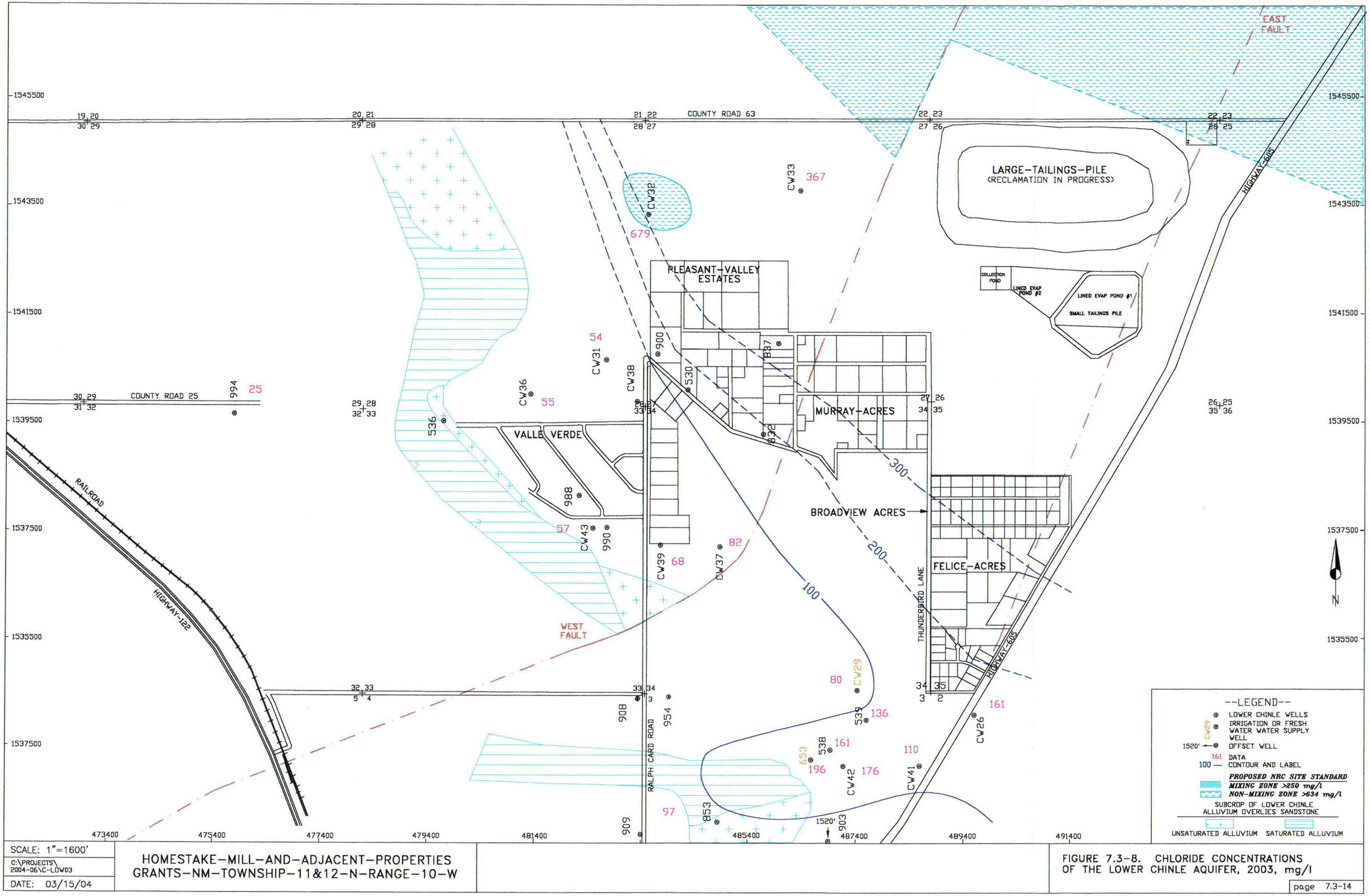


FIGURE 7.3-7. TDS CONCENTRATIONS FOR WELLS CW31, CW32, CW33, CW37 AND CW43.



SCALE: 1"=1600'

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

FIGURE 7.3-8. CHLORIDE CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2003, mg/l

C217

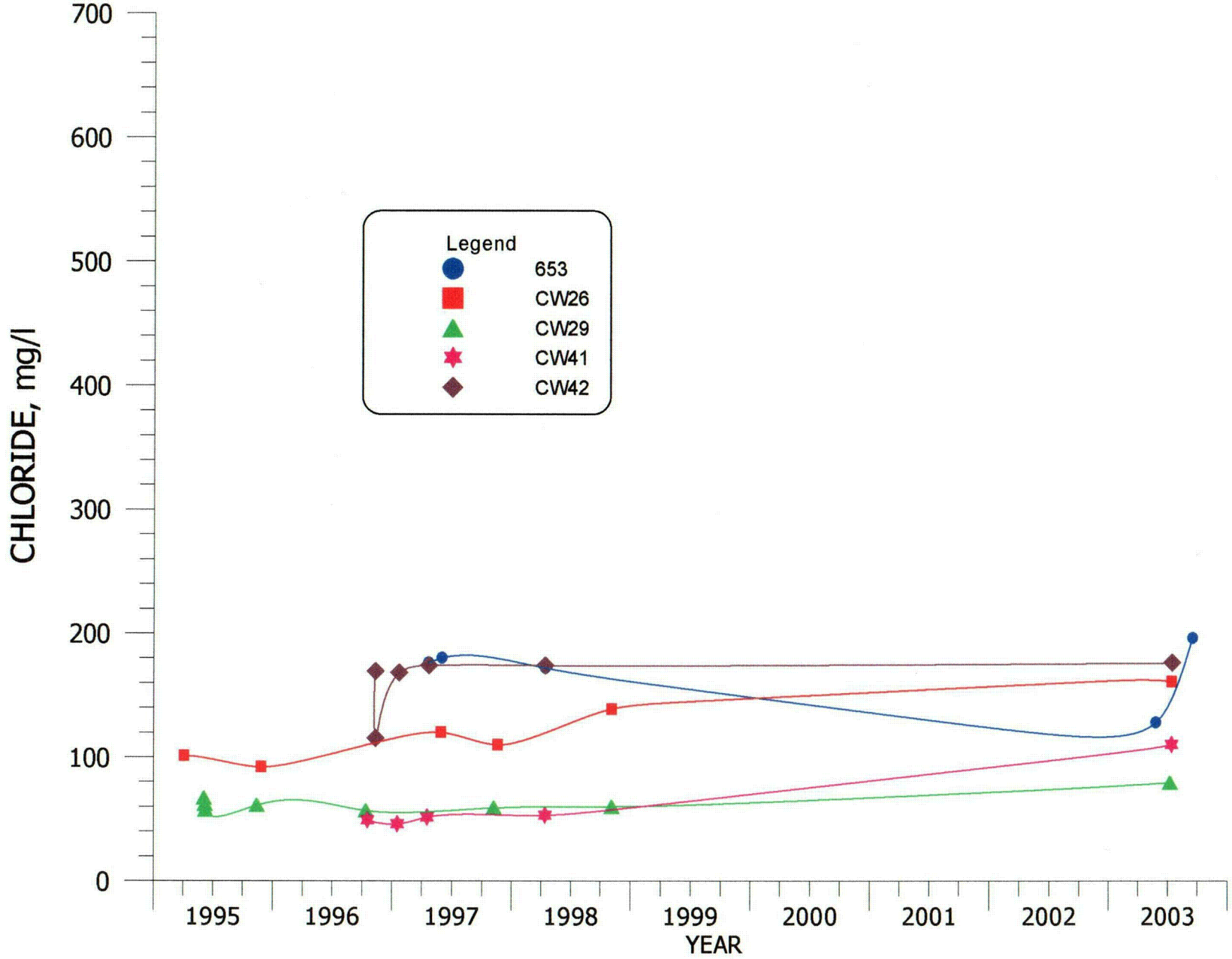


FIGURE 7.3-9. CHLORIDE CONCENTRATIONS FOR WELLS 653, CW26, CW29, CW41 AND CW42.

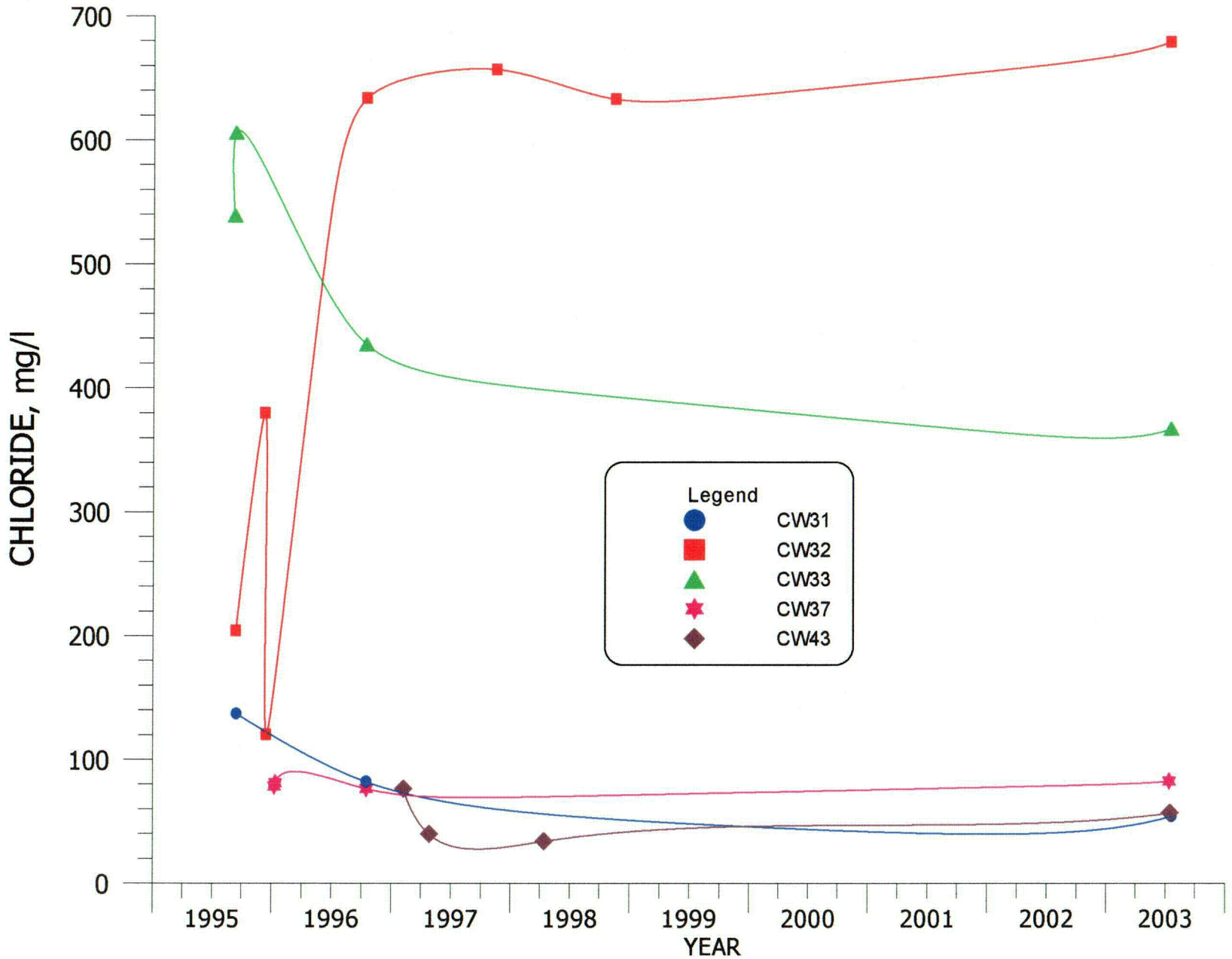
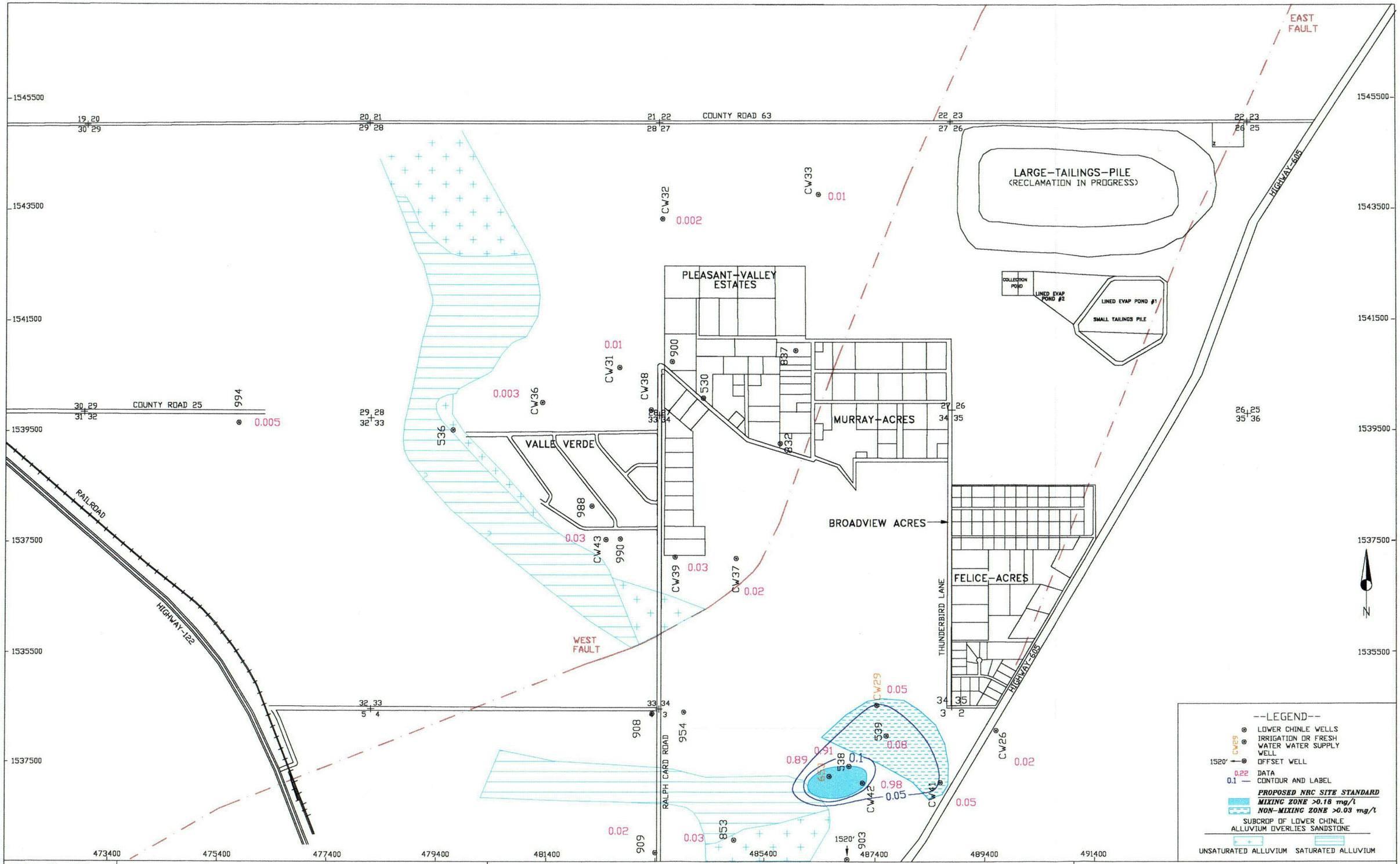


FIGURE 7.3-10. CHLORIDE CONCENTRATIONS FOR WELLS CW31, CW32, CW33, CW37 AND CW43.

C219



SCALE: 1"=1600'

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

FIGURE 7.3-11. URANIUM CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2003, mg/l

C220

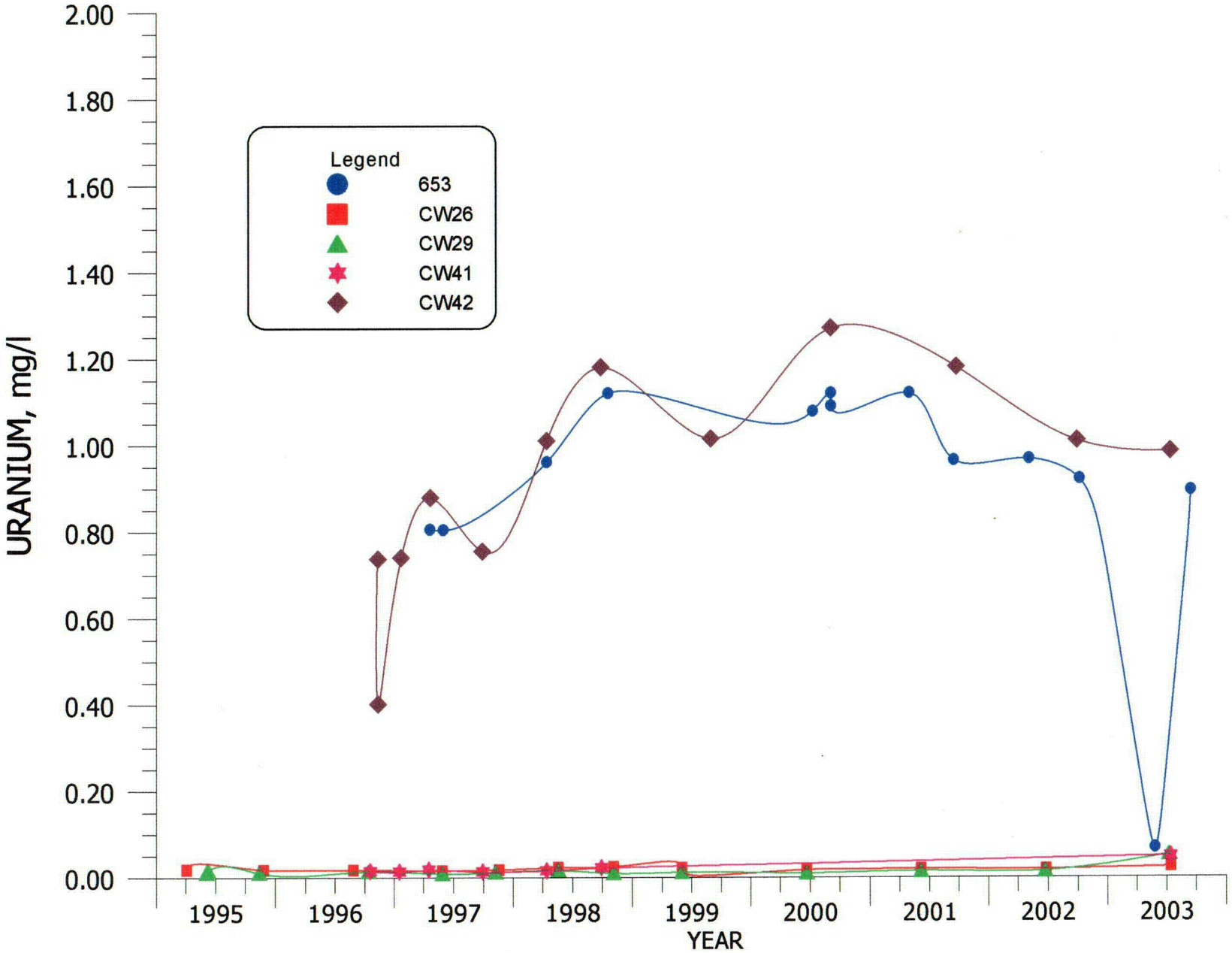


FIGURE 7.3-12. URANIUM CONCENTRATIONS FOR WELLS 653, CW26, CW29, CW41 AND CW42.

C221

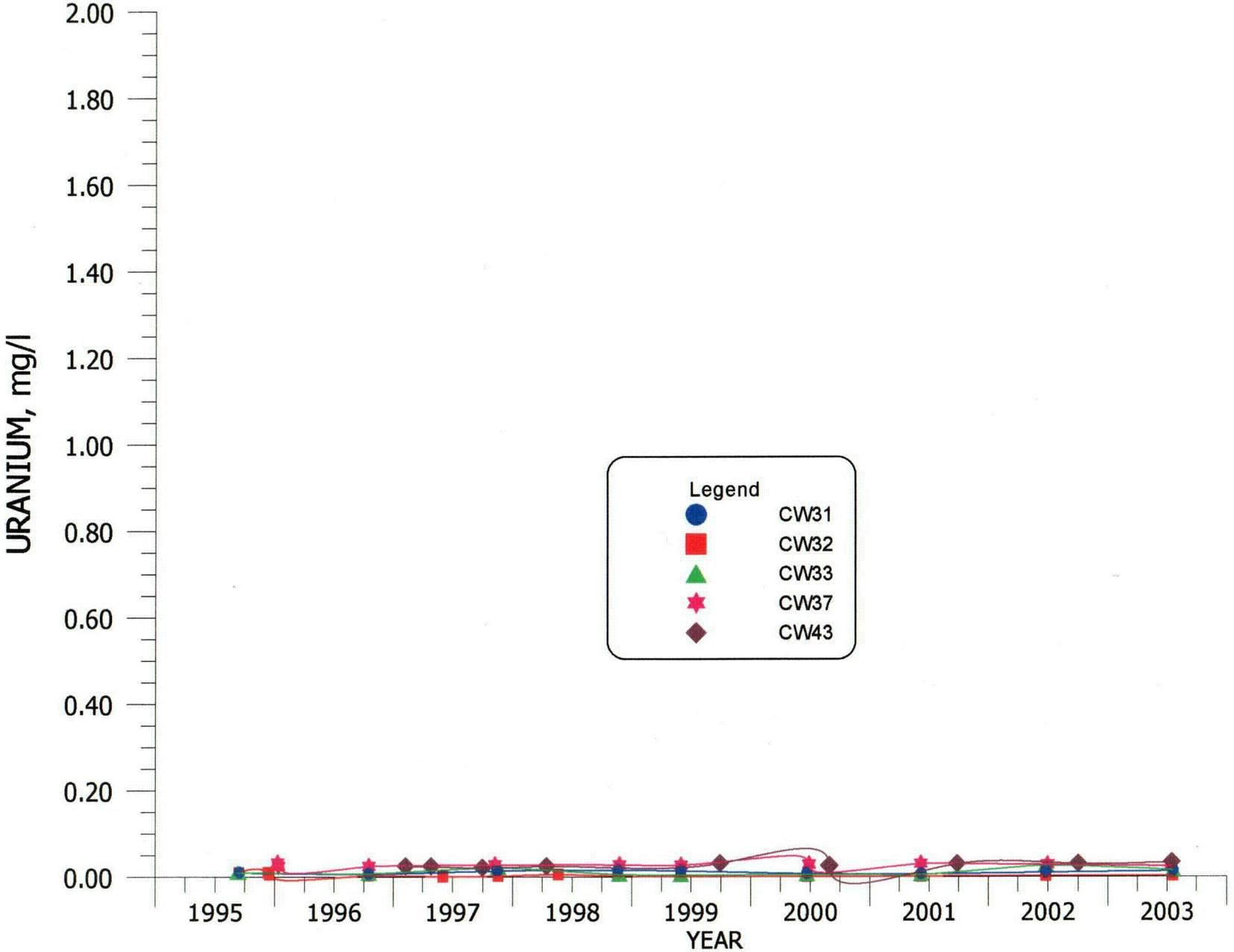
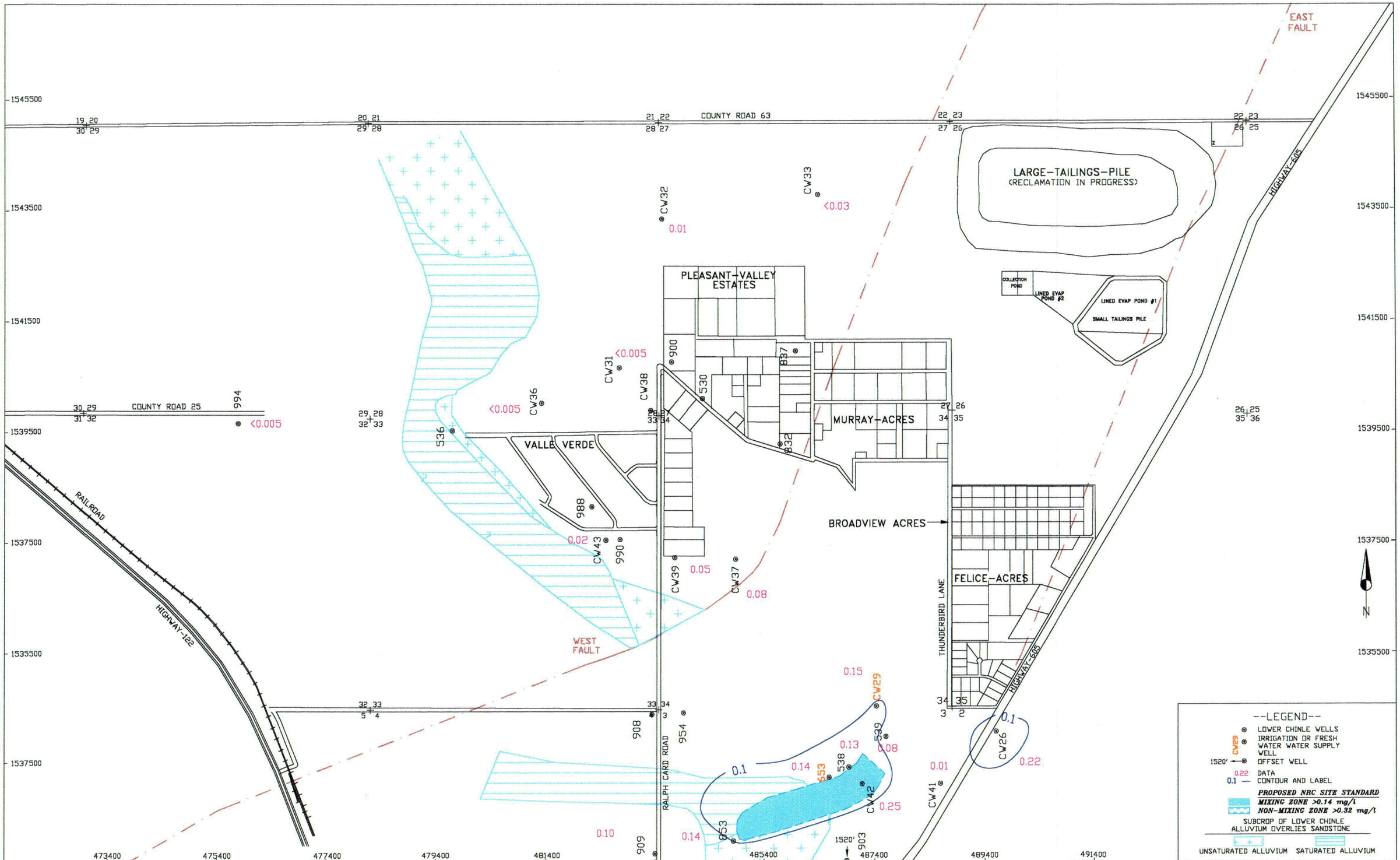


FIGURE 7.3-13. URANIUM CONCENTRATIONS FOR WELLS CW31, CW32, CW33, CW37 AND CW43.

C222



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

FIGURE 7.3-14. SELENIUM CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2003, mg/l

C223

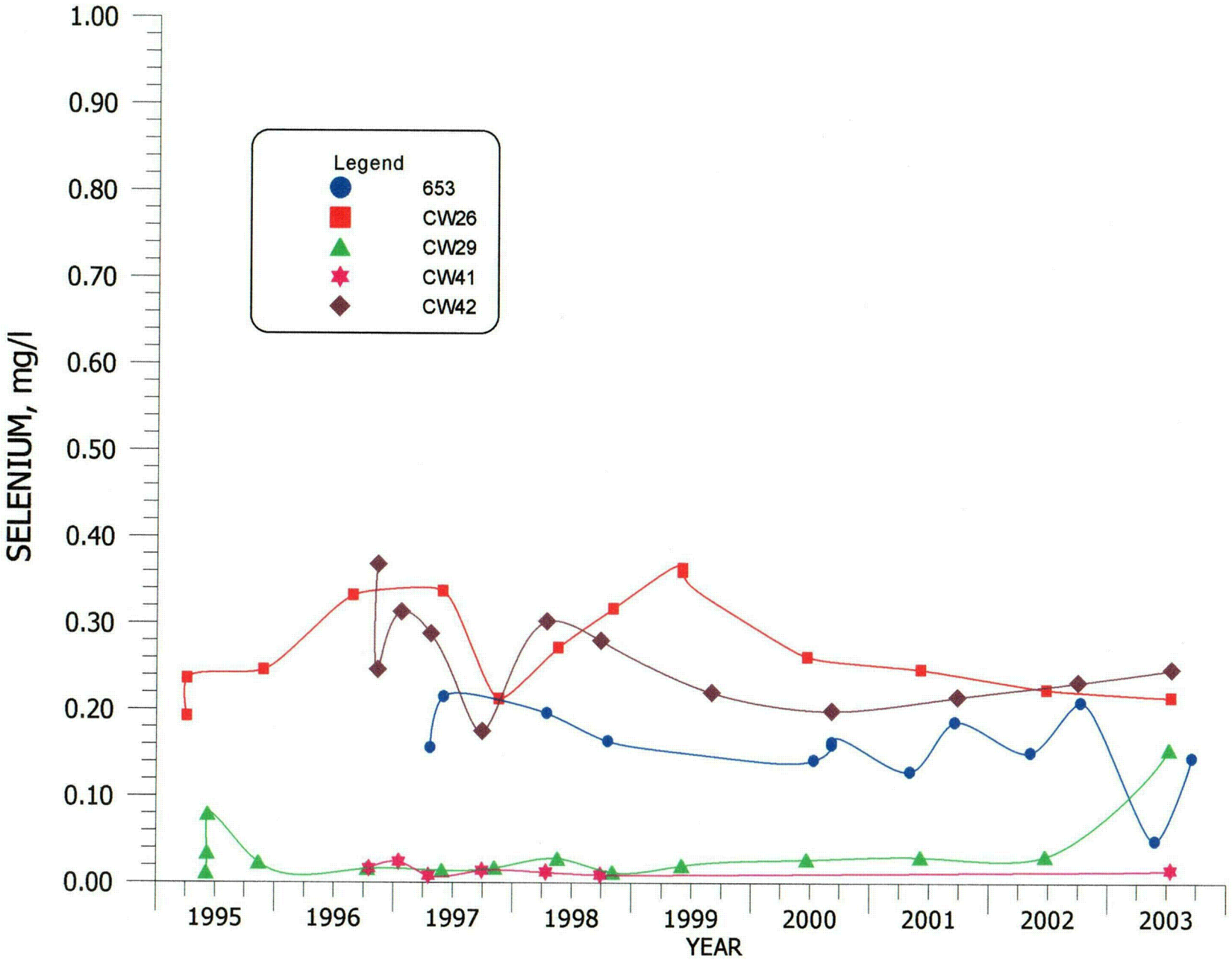

FIGURE 7.3-15. SELENIUM CONCENTRATIONS FOR WELLS 653, CW26, CW29, CW41 AND CW42.

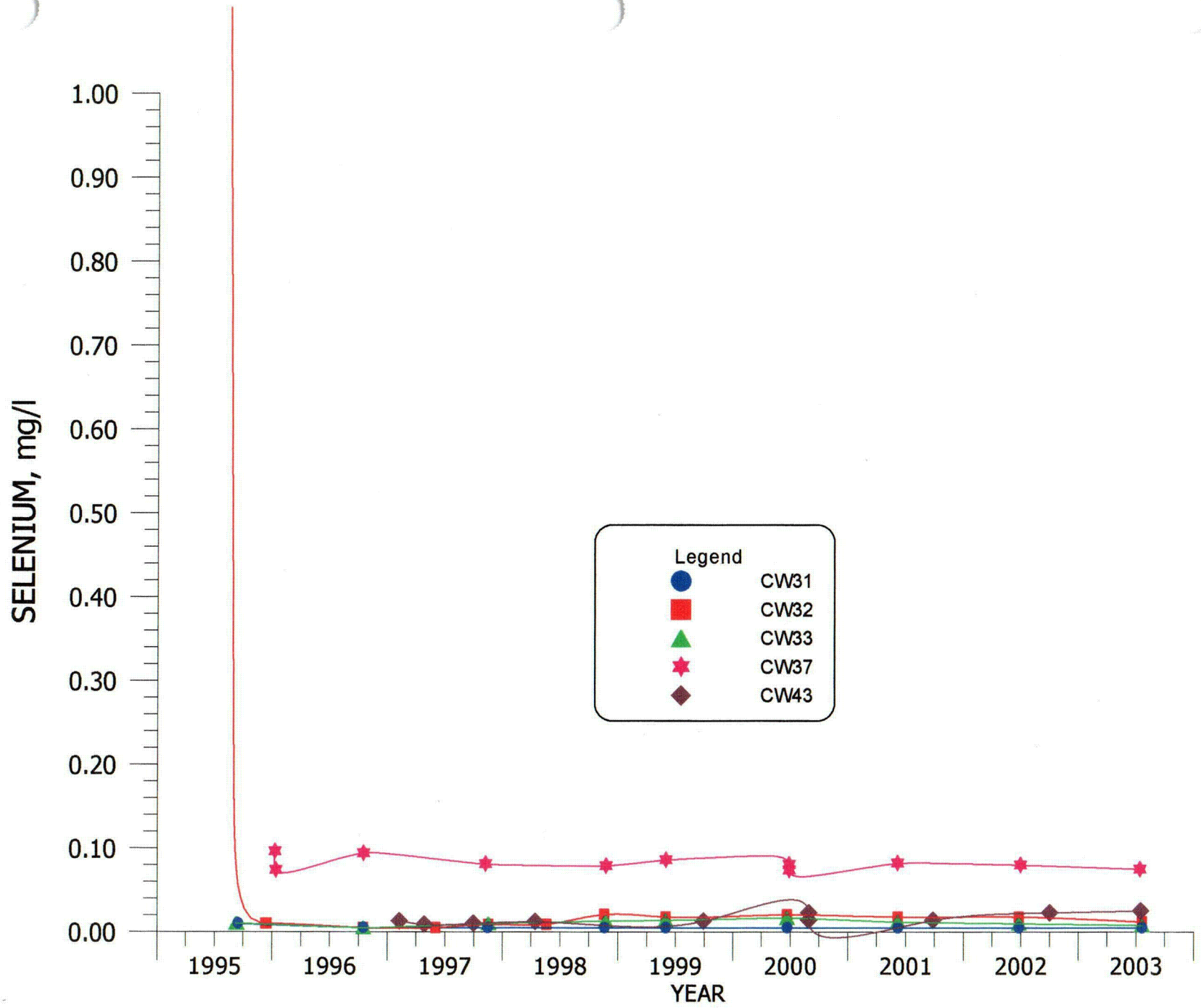

FIGURE 7.3-16. SELENIUM CONCENTRATIONS FOR WELLS CW31, CW32, CW33, CW37 AND CW43.

C225

SECTION 8

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GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES

TABLES

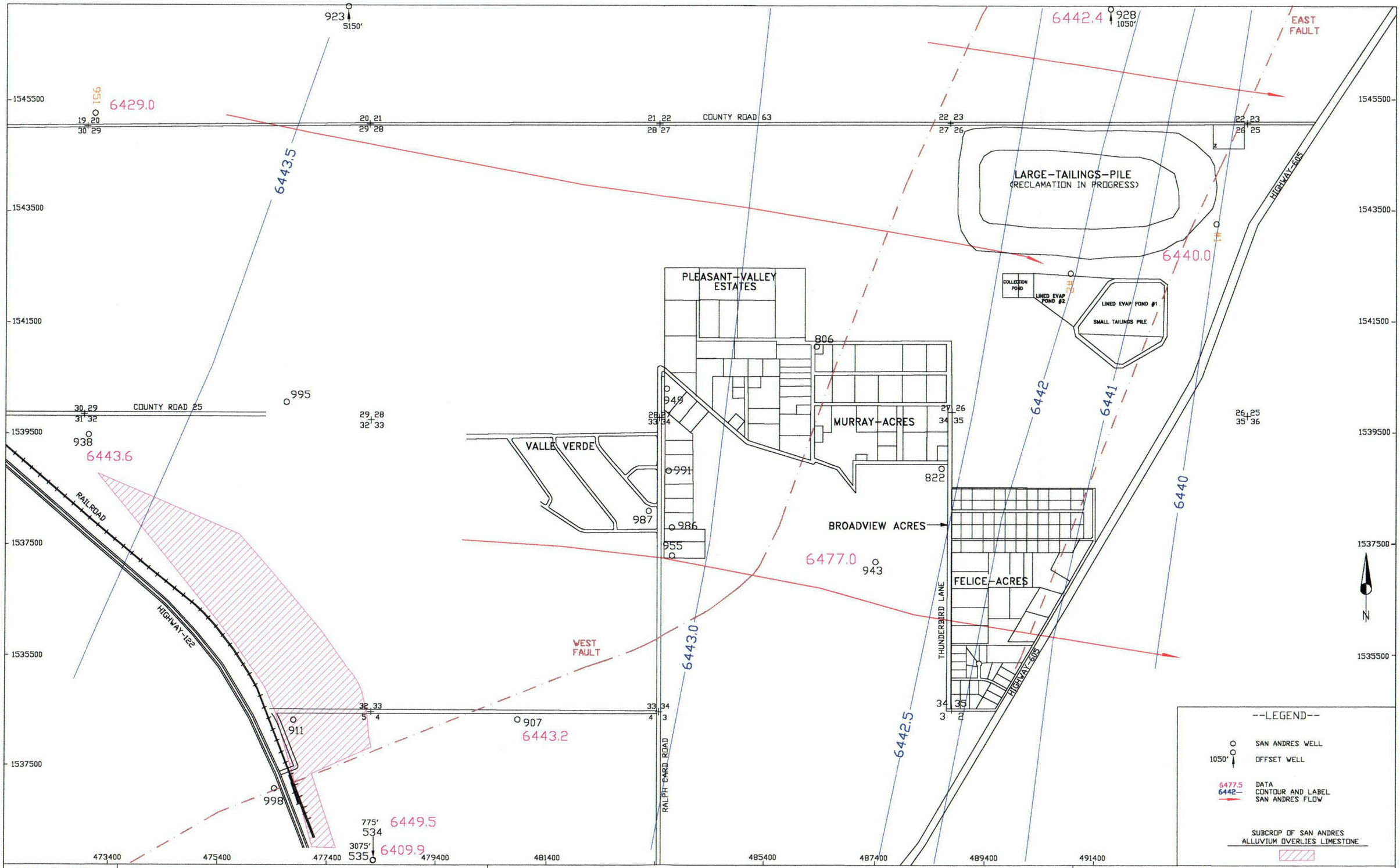
8.0 SAN ANDRES AQUIFER MONITORING

The San Andres aquifer is the most important regional aquifer in the Grants Project 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 are separated by a very thick aquitard. The difference in piezometric head between the alluvial and San Andres aquifers is in the range of 70 to 80 feet, which confirms that the flow between the two systems is restricted by the limited permeability of the Chinle Formation. The San Andres and alluvial aquifers are only in direct contact in the western portion of the area presented on Figure 8.0-1 (see magenta pattern area). With no areas of direct communication within the area where the alluvial aquifer is impacted and only very limited hydraulic communication through the Chinle shale, the San Andres aquifer is not affected by tailings seepage. The San Andres aquifer has been used as the source for fresh-water injection into the alluvium and Chinle aquifers at the Grants Project, and as a result, a monitoring program was established for the San Andres aquifer.

Table 8.0-1 presents well completion information for the San Andres wells in this area. Homestake's two deep wells within the project area are San Andres wells, #1 Deep and #2 Deep. These wells are used to supply the fresh-water injection systems within the collection area. San Andres well 951 is used as the fresh-water injection supply for the injection system in Sections 28 and 29. Figure 8.0-1 shows the locations of the San Andres wells relevant to this area. Recharge to the San Andres aquifer occurs mainly west of the area shown in the figure and in the far western portion of the figure. The structure of the San Andres aquifer dips to the east, and thus the ground water system becomes progressively deeper in the easterly direction. The water-level elevations measured during 2003 (Figure 8.0-1) show a very flat piezometric surface with the gradient being from the west-northwest to the east-southeast. The continuity of the gradient in this area indicates that the East and West faults do not significantly affect the ground water flow in the San Andres aquifer. The displacement at the faults is not large enough to completely displace the entire thickness of this aquifer system. The increase in gradient in the project area also indicates a decrease in transmissivity in the steeper gradient area. The faults may cause a decrease in the transmitting ability of the San Andres aquifer in this area.

Figure 8.0-2 presents 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 water-quality data for the San Andres aquifer. Figure 8.0-2 shows the 2003 data for sulfate, TDS, uranium and selenium concentrations in the San Andres aquifer. Sulfate concentrations vary from 342 mg/l to 1090 mg/l in the San Andres aquifer. Sulfate concentrations are typically near 700 mg/l for Homestake #1 Deep and #2 Deep wells. TDS concentrations have varied from 942 to 2030 mg/l and generally increase in a down-gradient direction. The higher concentrations of sulfate and TDS to the east are natural and typical of a limestone aquifer where the extended contact time with the formation results in ongoing dissolution of major constituents. This increase in concentrations from the recharge area toward down dip is expected. Uranium concentrations were small in all of the San Andres wells monitored during 2003. Selenium concentrations in the San Andres aquifer vary from less than 0.005 to 0.01 mg/l. All measured molybdenum concentrations are less than 0.03 mg/l.

Figure 8.0-3 presents sulfate concentrations with time for Homestake's well 951 and Deep #1 and #2 wells. This data shows that sulfate concentrations in 2003 in well 951 and the two Homestake deep wells were similar to their historical average.



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

FIGURE 8.0-1. LOCATION OF SAN ANDRES WELLS AND WATER-LEVEL ELEVATION FOR THE SAN ANDRES AQUIFER, 2003, mg/l

CZZ6

923
5150'

928
1050'

EAST FAULT

342 | 0.03
<0.005 | 942

951

COUNTY ROAD 63

LARGE-TAILINGS-PILE
(RECLAMATION IN PROGRESS)

713 | 0.01
0.007 | 1800

646 | 0.01
0.01 | 1770

HIGHWAY-605

PLEASANT-VALLEY ESTATES

589 | 0.02
<0.005 | 1570

806

COLLECTION POND

LINED EVAP POND #2

LINED EVAP POND #1

SMALL TAILINGS PILE

995

949

COUNTY ROAD 25

MURRAY-ACRES

938

VALLE VERDE

991

987

986

955

822

BROADVIEW ACRES

1090 | 0.005
<0.005 | 2030

943

FELICE-ACRES

THUNDERBIRD LANE

RAILROAD

HIGHWAY-122

WEST FAULT

907

911

998

RALPH CARD ROAD

775'
534

3075'
535

1545500
1543500
1541500
1539500
1537500
1535500

473400
475400
477400
479400
481400
485400
487400
489400
491400

N

--LEGEND--

SAN ANDRES WELL

1050' OFFSET WELL

SO4 | U
Se | TDS

SUBCROP OF SAN ANDRES ALLUVIUM OVERLIES LIMESTONE

SCALE: 1"=1600'	HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W	FIGURE 8.0-2. WATER QUALITY FOR THE SAN ANDRES AQUIFER, 2003, FT-MSL
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C227

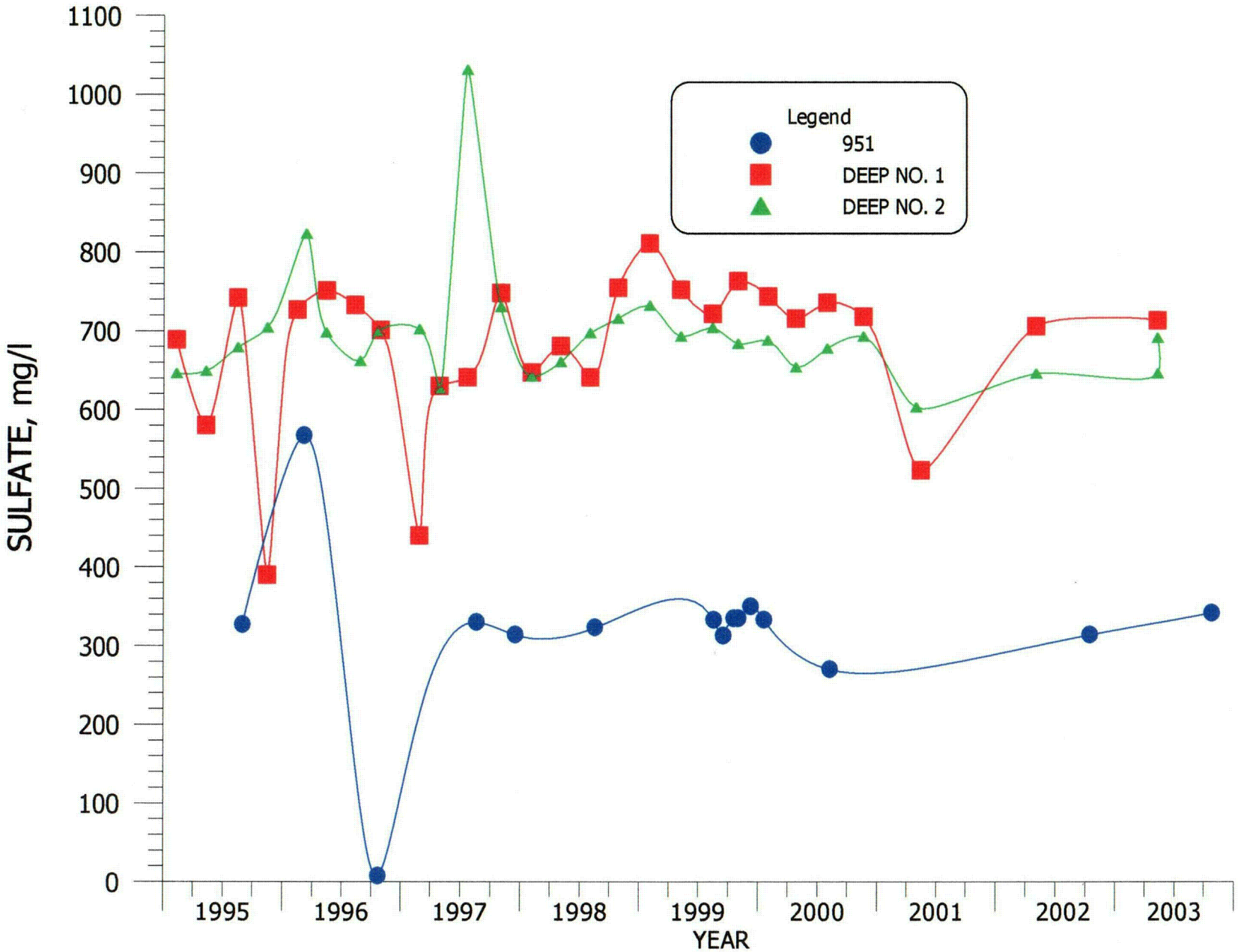

FIGURE 8.0-3. SULFATE CONCENTRATIONS FOR WELLS 951, DEEP NO. 1 AND DEEP NO. 2.

C228

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

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	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)
#1 Deep	1543307	493633	1000.0	10.0	5/13/2003	142.059	6441.70	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	—	5/13/2003	134.059	6441.60	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	12/23/2003	103.099	6449.47	0.0	6552.57	0	6553	S -
0535	1530100	478450	198.0	12.0	12/23/2003	130.100	6409.90	0.0	6540.00	—	—	S -
0907	1534250	480800	360.0	16.0	12/23/2003	102.379	6443.22	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	477900	330.0	5.0	4/6/1994	6464.97	157.63	0.0	6622.60	60	6563	A —
										229	6394	S 234-330
0928	1548250	491700	864.0	—	12/23/2003	155.149	6442.45	1.2	6597.60	138	6458	A —
										801	5795	S -
0938	1539500	473040	—	—	12/23/2003	125.230	6443.57	0.0	6568.80	95	6474	A —
										120	6449	S -
0943	1537222	487407	978.0	18.0	12/23/2003	78.8799	6477.03	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	12/29/2003	170.399	6403.30	0.9	6573.70	110	6463	A —
										227	6346	S 241-275
0955	1537300	483700	498.0	5.0	11/3/1995	78.0500	6471.95	0.2	6550.00	40	6510	A —
										420	6130	S 385-498
0986	1537860	483750	467.0	5.0	11/2/1995	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	11/3/1995	54.4799	6595.52	1.0	6650.00	70	6579	A —
										385	6264	S 425-470
0991	1538880	483630	500.0	—	11/8/1995	84.4100	6566.59	1.4	6651.00	—	—	S -
0995	1540115	476594	—	—	—	—	—	0.0	6474.00	—	—	S -

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

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	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)	
0998	1533080	476450	145.0	16.0	—	—	—	0.0	6650.00	—	—	S	-

NOTE: A = Base of Alluvium
U = Upper Chinle, Top
M = Middle Chinle, Top
L = Lower Chinle, Top
S = San Andres Aquifer, Top
* = Abandoned

SECTION 9

TABLE OF CONTENTS

GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

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APPENDIX A
WATER LEVELS

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GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

APPENDIX A

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0690		
12/18/2003	33.63	6548.43
1/12/2004	33.61	6548.45
0691		
12/18/2003	43.18	6545.63
1/12/2004	43.01	6545.80
1A		
3/10/2003	39.40	6546.03
1F		
1/8/2004	44.47	6542.91
1G		
1/8/2004	42.71	6544.36
1H		
1/8/2004	55.00	6531.39
1I		
2/24/2003	34.00	6564.35
1J		
3/20/2003	40.79	6544.61
5/21/2003	34.38	6551.02
1K		
5/21/2003	33.18	6550.95
1L		
1/8/2004	25.38	6553.23
1M		
1/8/2004	20.98	6554.55
1N		
2/24/2003	32.51	6558.34
1P		
2/24/2003	34.31	6550.93
1Q		
5/20/2003	33.82	6549.29
1R		
5/20/2003	34.92	6551.07
1S		
5/20/2003	32.61	6549.38
1T		
5/20/2003	33.80	6551.11
1U		
5/21/2003	35.10	6551.12
B		
1/6/2003	42.64	6528.26
1/13/2003	42.65	6528.25
1/20/2003	42.53	6528.37
1/27/2003	42.57	6528.33
2/3/2003	42.50	6528.40
2/10/2003	42.61	6528.29
2/17/2003	42.57	6528.33
2/24/2003	42.56	6528.34
3/3/2003	42.58	6528.32
3/10/2003	42.63	6528.27
3/17/2003	42.28	6528.62
3/24/2003	42.60	6528.30
3/31/2003	42.78	6528.12
4/7/2003	42.75	6528.15
4/14/2003	42.70	6528.20
4/21/2003	42.61	6528.29
4/28/2003	42.64	6528.26
5/5/2003	42.55	6528.35
5/12/2003	42.87	6528.03
5/19/2003	42.94	6527.96
5/27/2003	43.04	6527.86
6/2/2003	42.91	6527.99
6/9/2003	43.01	6527.89
6/16/2003	43.11	6527.79
6/23/2003	43.03	6527.87
6/25/2003	43.06	6527.84
6/30/2003	43.11	6527.79
7/7/2003	42.83	6528.07
7/14/2003	42.91	6527.99
7/21/2003	42.87	6528.03
7/28/2003	42.90	6528.00
8/4/2003	42.85	6528.05
8/11/2003	42.85	6528.05
8/18/2003	42.80	6528.10
8/25/2003	42.70	6528.20
9/2/2003	42.75	6528.15
9/8/2003	42.91	6527.99
9/15/2003	42.74	6528.16
9/22/2003	42.60	6528.30
9/29/2003	43.10	6527.80
10/6/2003	42.68	6528.22
10/13/2003	42.71	6528.19
10/20/2003	42.78	6528.12
10/27/2003	42.68	6528.22
11/3/2003	42.55	6528.35
11/10/2003	42.76	6528.14
11/17/2003	42.56	6528.34
11/24/2003	42.79	6528.11
12/1/2003	42.82	6528.08
12/8/2003	42.49	6528.41
12/15/2003	42.65	6528.25
12/22/2003	42.75	6528.15
12/29/2003	42.70	6528.20
1/5/2004	42.83	6528.07
1/12/2004	42.70	6528.20
1/19/2004	42.49	6528.41
1/26/2004	42.59	6528.31
B11		
2/24/2003	47.60	6529.79
10/14/2003	52.92	6524.47
B12		
12/12/2003	47.80	6525.20
B13		
12/12/2003	40.23	6527.77

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

BA

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/6/2003	44.27	6527.31
1/13/2003	44.24	6527.34
1/20/2003	44.30	6527.28
1/27/2003	44.11	6527.47
2/3/2003	44.02	6527.56
2/10/2003	44.07	6527.51
2/17/2003	43.98	6527.60
2/24/2003	44.04	6527.54
3/3/2003	43.90	6527.68
3/10/2003	43.72	6527.86
3/17/2003	43.66	6527.92
3/24/2003	44.25	6527.33
3/31/2003	44.58	6527.00
4/7/2003	43.86	6527.72
4/14/2003	44.15	6527.43
4/21/2003	43.91	6527.67
4/28/2003	43.77	6527.81
5/5/2003	43.71	6527.87
5/12/2003	44.61	6526.97
5/19/2003	44.64	6526.94
5/27/2003	44.81	6526.77
6/2/2003	44.73	6526.85
6/9/2003	44.82	6526.76
6/16/2003	45.08	6526.50
6/23/2003	44.58	6527.00
6/30/2003	44.51	6527.07
7/7/2003	44.28	6527.30
7/14/2003	44.19	6527.39
7/21/2003	44.15	6527.43
7/28/2003	44.07	6527.51
8/4/2003	44.08	6527.50
8/11/2003	44.00	6527.58
8/18/2003	43.80	6527.78
8/25/2003	43.80	6527.78
9/2/2003	43.98	6527.60
9/8/2003	44.11	6527.47
9/15/2003	43.80	6527.78
9/22/2003	43.80	6527.78
9/29/2003	44.00	6527.58
10/6/2003	44.08	6527.50
10/13/2003	44.12	6527.46
10/20/2003	43.80	6527.78
10/27/2003	43.78	6527.80
11/3/2003	44.10	6527.48
11/10/2003	44.56	6527.02
11/17/2003	44.26	6527.32
11/24/2003	44.07	6527.51
12/1/2003	44.40	6527.18
12/8/2003	44.16	6527.42
12/15/2003	44.50	6527.08
12/22/2003	44.18	6527.40
12/29/2003	43.98	6527.60
1/5/2004	44.09	6527.49
1/12/2004	43.90	6527.68
1/19/2004	43.34	6528.24
1/26/2004	43.59	6527.99

BC

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/24/2003	49.58	6525.03
12/12/2003	47.78	6526.83

BP

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/8/2004	44.49	6527.81

C1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	35.68	6536.18
8/28/2003	34.83	6537.03

C2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	32.00	6533.02
8/28/2003	31.00	6534.02

C5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/12/2004	30.41	6539.44

C6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/28/2003	57.90	6526.99
9/22/2003	58.50	6526.39
11/17/2003	51.87	6533.02

C7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/28/2003	73.80	6510.64
9/22/2003	61.22	6523.22
11/17/2003	59.18	6525.26

C8

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/28/2003	76.80	6507.69
9/22/2003	55.50	6528.99
11/17/2003	49.39	6535.10

C9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/28/2003	74.90	6509.65
9/22/2003	54.90	6529.65
11/17/2003	56.41	6528.14

C10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/28/2003	67.10	6518.16
9/22/2003	51.30	6533.96
11/17/2003	49.04	6536.22

C11

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/28/2003	41.00	6540.38
9/22/2003	63.50	6517.88
11/17/2003	63.00	6518.38

C12

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/28/2003	37.90	6542.65
9/22/2003	43.60	6536.95
11/17/2003	45.95	6534.60

D1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/24/2003	46.67	6524.23

DC

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/24/2003	44.08	6527.23
12/12/2003	44.38	6526.93

DD

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/3/2003	57.71	6534.88

DZ

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/6/2003	56.29	6534.24
1/13/2003	56.36	6534.17
1/20/2003	56.07	6534.46
1/27/2003	55.94	6534.59
2/3/2003	55.46	6535.07
2/10/2003	55.66	6534.87
2/17/2003	55.52	6535.01
2/24/2003	55.73	6534.80
3/3/2003	55.62	6534.91
3/10/2003	55.47	6535.06
3/17/2003	55.17	6535.36
3/24/2003	55.87	6534.66
3/31/2003	56.14	6534.39
4/7/2003	55.48	6535.05
4/14/2003	55.28	6535.25
4/21/2003	55.13	6535.40
4/28/2003	55.06	6535.47
5/5/2003	55.00	6535.53
5/12/2003	55.83	6534.70
5/19/2003	55.80	6534.73
5/27/2003	56.50	6534.03
6/2/2003	56.37	6534.16
6/9/2003	56.61	6533.92
6/16/2003	56.73	6533.80
6/23/2003	55.86	6534.67
6/30/2003	55.89	6534.64
7/7/2003	55.91	6534.62
7/14/2003	55.21	6535.32
7/21/2003	55.00	6535.53
7/28/2003	55.04	6535.49
8/4/2003	55.01	6535.52
8/11/2003	55.00	6535.53
8/18/2003	54.50	6536.03
8/25/2003	54.75	6535.78
9/2/2003	55.27	6535.26
9/8/2003	55.19	6535.34
9/15/2003	54.81	6535.72
9/22/2003	55.20	6535.33
9/29/2003	56.00	6534.53
10/6/2003	56.27	6534.26
10/13/2003	56.64	6533.89
10/20/2003	55.24	6535.29
10/27/2003	55.14	6535.39
11/3/2003	56.20	6534.33
11/10/2003	57.17	6533.36
11/17/2003	56.80	6533.73
11/24/2003	56.09	6534.44
12/1/2003	57.46	6533.07
12/8/2003	57.32	6533.21
12/15/2003	55.80	6534.73
12/22/2003	55.46	6535.07
12/29/2003	55.28	6535.25
1/5/2004	55.38	6535.15
1/12/2004	54.89	6535.64
1/19/2004	54.61	6535.92
1/26/2004	54.46	6536.07

F

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/15/2003	30.80	6534.02

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

FB

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/22/2003	35.20	6530.46
10/13/2003	35.11	6530.55
1/13/2004	35.53	6530.13

G

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	34.50	6528.59

GA

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	32.95	6529.84

GC

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	33.82	6531.35

GE

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	34.61	6531.66

GH

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/10/2003	32.44	6530.32

GK

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	33.24	6533.52

GV

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	48.48	6528.90
1/8/2004	48.98	6528.40

GW1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	29.35	6535.92

GW2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	30.73	6535.35

I

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/25/2003	30.97	6536.23

K4

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	60.60	6541.42
4/30/2003	55.58	6546.44
11/17/2003	49.31	6552.71
1/13/2004	66.11	6535.91

K5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	57.10	6544.63
4/30/2003	59.13	6542.60
11/17/2003	55.74	6545.99
1/13/2004	57.83	6543.90

K7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	55.60	6545.93
4/30/2003	51.48	6550.05
11/17/2003	54.61	6546.92
1/13/2004	53.72	6547.81

K8

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	70.07	6530.42
4/30/2003	51.70	6548.79
11/17/2003	56.33	6544.16
1/13/2004	63.18	6537.31

K9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	60.83	6539.51
4/30/2003	57.10	6543.24
11/17/2003	60.50	6539.84
1/13/2004	61.39	6538.95

K10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	61.10	6539.71
4/30/2003	68.08	6532.73
11/17/2003	61.88	6538.93
1/13/2004	56.34	6544.47

K11

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/24/2003	60.66	6539.95
4/30/2003	62.04	6538.57
11/17/2003	63.48	6537.13
1/13/2004	62.29	6538.32

KEB

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/20/2003	18.64	6551.09

KF

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/6/2003	23.78	6546.43
1/13/2003	23.67	6546.54
1/20/2003	23.70	6546.51
1/27/2003	23.95	6546.26
3/20/2003	24.83	6545.38

KZ

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/6/2003	27.28	6544.44
1/13/2003	27.19	6544.53
1/20/2003	26.96	6544.76
1/27/2003	27.24	6544.48
2/3/2003	27.11	6544.61
2/10/2003	27.26	6544.46
2/17/2003	27.05	6544.67
2/24/2003	27.31	6544.41
3/3/2003	27.74	6543.98
3/10/2003	28.09	6543.63
3/17/2003	27.98	6543.74
3/20/2003	28.06	6543.66
3/24/2003	27.95	6543.77
3/31/2003	27.90	6543.82
4/7/2003	28.39	6543.33
4/14/2003	28.45	6543.27
4/21/2003	28.43	6543.29
4/28/2003	28.58	6543.14
5/5/2003	28.63	6543.09
5/12/2003	28.34	6543.38
5/19/2003	27.84	6543.88
5/27/2003	27.65	6544.07
6/2/2003	27.39	6544.33
6/9/2003	27.02	6544.70
6/16/2003	26.72	6545.00
6/23/2003	26.70	6545.02
6/30/2003	26.94	6544.78
7/7/2003	26.50	6545.22
7/14/2003	26.46	6545.26
7/21/2003	26.82	6544.90
7/28/2003	26.70	6545.02
8/4/2003	26.70	6545.02
8/11/2003	26.68	6545.04
8/18/2003	26.50	6545.22
8/25/2003	26.65	6545.07
9/2/2003	26.21	6545.51
9/8/2003	26.06	6545.66
9/15/2003	26.50	6545.22
9/22/2003	26.20	6545.52
9/29/2003	25.80	6545.92
10/6/2003	25.68	6546.04
10/13/2003	25.65	6546.07
10/20/2003	26.35	6545.37
10/27/2003	26.31	6545.41
11/3/2003	25.80	6545.92
11/10/2003	25.88	6545.84
11/17/2003	26.08	6545.64
11/24/2003	26.89	6544.83
12/1/2003	26.85	6544.87
12/8/2003	26.38	6545.34
12/15/2003	26.53	6545.19
12/22/2003	26.58	6545.14
12/29/2003	26.67	6545.05
1/5/2004	26.90	6544.82
1/12/2004	26.60	6545.12
1/19/2004	26.67	6545.05
1/26/2004	26.68	6545.04

L

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/18/2003	49.18	6525.79
1/13/2004	49.63	6525.34

L5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/18/2003	39.39	6536.68
1/13/2004	39.23	6536.84

L6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/18/2003	21.36	6553.28
1/8/2004	22.01	6552.63

L7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/18/2003	41.74	6534.87
1/13/2004	42.81	6533.80

L8

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/18/2003	46.41	6530.08
1/13/2004	44.26	6532.23

L9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/18/2003	44.98	6532.25
1/13/2004	43.78	6533.45

L10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/18/2003	48.21	6528.62
1/13/2004	46.50	6530.33

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
M5		
1/12/2004	49.61	6525.73
M6		
12/12/2003	65.10	6509.94
M7		
12/12/2003	60.33	6512.52
M9		
12/8/2003	64.90	6511.91
12/12/2003	65.10	6511.71
M10		
12/8/2003	56.68	6516.68
12/12/2003	65.10	6508.26
M11		
12/8/2003	53.98	6519.24
MA		
12/12/2003	46.15	6526.07
MF		
12/12/2003	49.95	6522.33
MH		
12/12/2003	55.20	6518.72
ML		
12/12/2003	49.21	6523.49
MO		
3/10/2003	65.68	6507.21
10/13/2003	66.22	6506.67
MQ		
12/12/2003	66.58	6507.72
1/12/2004	66.60	6507.70
MR		
1/19/2004	70.19	6496.07
MS		
1/19/2004	63.49	6507.18
MT		
1/19/2004	69.94	6497.49
MU		
12/12/2003	43.96	6530.23
1/15/2004	44.31	6529.88
MW		
12/12/2003	63.53	6511.38
MX		
12/12/2003	53.50	6515.11
1/15/2004	53.58	6515.03
MY		
12/12/2003	59.30	6514.26
1/15/2004	59.32	6514.24
MZ		
12/8/2003	67.83	6508.81
N		
8/28/2003	51.46	6532.51
NA		
9/2/2003	55.49	6535.49
NB		
8/28/2003	48.72	6544.58
NC		
8/28/2003	51.38	6534.45
ND		
5/22/2003	47.51	6545.38
O		
8/28/2003	48.10	6539.73
1/15/2004	47.58	6540.25
P		
7/15/2003	52.61	6534.65
P2		
4/23/2003	53.88	6535.91
12/9/2003	59.41	6530.38
P3		
4/23/2003	54.13	6535.82
12/9/2003	66.14	6523.81
P4		
4/23/2003	50.90	6538.62
12/9/2003	50.78	6538.74
PM		
1/12/2004	12.33	6555.09
Q		
5/15/2003	49.81	6544.01
R		
5/15/2003	43.08	6560.95
S		
1/12/2004	53.96	6527.21

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
S1		
1/6/2003	52.31	6522.88
1/13/2003	52.26	6522.93
1/20/2003	52.14	6523.05
1/27/2003	52.05	6523.14
2/3/2003	51.93	6523.26
2/10/2003	51.92	6523.27
2/17/2003	51.83	6523.36
2/24/2003	51.84	6523.35
3/3/2003	51.80	6523.39
3/10/2003	51.92	6523.27
3/17/2003	51.82	6523.37
3/24/2003	52.00	6523.19
3/31/2003	52.11	6523.08
4/7/2003	52.11	6523.08
4/14/2003	52.19	6523.00
4/21/2003	52.14	6523.05
4/28/2003	52.21	6522.98
5/5/2003	52.14	6523.05
5/12/2003	52.24	6522.95
5/19/2003	52.33	6522.86
5/27/2003	52.51	6522.68
6/2/2003	52.63	6522.56
6/9/2003	52.71	6522.48
6/16/2003	52.86	6522.33
6/23/2003	52.99	6522.20
6/30/2003	52.89	6522.30
7/7/2003	52.62	6522.57
7/14/2003	52.64	6522.55
7/21/2003	52.62	6522.57
7/28/2003	52.56	6522.63
8/4/2003	52.44	6522.75
8/11/2003	52.35	6522.84
8/18/2003	52.20	6522.99
8/25/2003	52.10	6523.09
9/2/2003	52.31	6522.88
9/8/2003	52.27	6522.92
9/15/2003	52.18	6523.01
9/22/2003	51.90	6523.29
9/29/2003	51.70	6523.49
10/6/2003	51.75	6523.44
10/13/2003	51.70	6523.49
10/20/2003	51.21	6523.98
10/27/2003	50.91	6524.28
11/3/2003	50.75	6524.44
11/10/2003	50.71	6524.48
11/17/2003	50.58	6524.61
11/24/2003	50.63	6524.56
12/1/2003	50.42	6524.77
12/8/2003	50.29	6524.90
12/15/2003	50.00	6525.19
12/22/2003	50.01	6525.18
12/29/2003	50.10	6525.09
1/5/2004	50.19	6525.00
1/12/2004	50.13	6525.06
1/19/2004	50.01	6525.18
1/26/2004	49.93	6525.26
S2		
1/6/2003	50.03	6523.69
1/13/2003	50.02	6523.70
1/20/2003	49.88	6523.84
1/21/2003	49.86	6523.86
1/27/2003	49.84	6523.88
2/3/2003	49.74	6523.98
2/10/2003	49.77	6523.95
2/17/2003	49.71	6524.01
2/24/2003	49.79	6523.93
3/3/2003	49.68	6524.04
3/10/2003	49.76	6523.96
3/17/2003	49.63	6524.09
3/24/2003	49.79	6523.93
3/31/2003	49.88	6523.84
4/7/2003	49.91	6523.81
4/14/2003	49.97	6523.75
4/21/2003	49.88	6523.84
4/28/2003	49.95	6523.77
5/5/2003	49.91	6523.81
5/12/2003	50.01	6523.71
5/19/2003	50.06	6523.64
5/27/2003	50.21	6523.51
6/2/2003	50.26	6523.46
6/9/2003	50.38	6523.34
6/16/2003	50.44	6523.28
6/23/2003	50.52	6523.20
6/30/2003	50.47	6523.25
7/7/2003	50.24	6523.48
7/14/2003	50.28	6523.44
7/15/2003	50.21	6523.51
7/21/2003	50.35	6523.37
7/28/2003	50.35	6523.37
8/4/2003	50.27	6523.45
8/11/2003	50.20	6523.52
8/18/2003	50.10	6523.62
8/25/2003	49.99	6523.73
9/2/2003	50.11	6523.61
9/8/2003	50.00	6523.72
9/15/2003	49.95	6523.77
9/22/2003	49.60	6524.12
9/29/2003	49.40	6524.32
10/6/2003	49.26	6524.46
10/13/2003	49.21	6524.51
10/20/2003	48.92	6524.80
10/27/2003	48.64	6525.08
11/3/2003	48.42	6525.30
11/10/2003	48.35	6525.37
11/17/2003	48.21	6525.51
11/24/2003	48.27	6525.45
12/1/2003	48.08	6525.64
12/8/2003	47.98	6525.74
12/15/2003	47.85	6525.87
12/22/2003	47.89	6525.83
12/29/2003	48.00	6525.72
1/5/2004	48.13	6525.59
1/12/2004	48.07	6525.65
1/13/2004	48.00	6525.72
1/19/2004	48.00	6525.72
1/26/2004	47.92	6525.80
S3		
1/12/2004	49.82	6524.96
S4		
3/10/2003	51.60	6523.69
7/15/2003	52.32	6522.97
S11		
12/12/2003	48.80	6529.59
1/12/2004	48.42	6529.97
S12		
12/12/2003	55.56	6523.29
SM		
5/28/2003	55.61	6523.13

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

SO

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/6/2003	55.38	6523.41
1/13/2003	55.17	6523.62
1/20/2003	55.06	6523.73
1/27/2003	55.02	6523.77
2/3/2003	54.90	6523.89
2/10/2003	54.84	6523.95
2/17/2003	54.71	6524.08
2/24/2003	54.76	6524.03
3/3/2003	54.84	6523.95
3/10/2003	54.86	6523.93
3/17/2003	54.79	6524.00
3/24/2003	54.95	6523.84
3/31/2003	55.13	6523.66
4/7/2003	55.21	6523.58
4/14/2003	55.23	6523.56
4/21/2003	55.20	6523.59
4/28/2003	55.16	6523.63
5/5/2003	55.12	6523.67
5/12/2003	55.23	6523.56
5/19/2003	55.43	6523.36
5/27/2003	55.70	6523.09
5/28/2003	55.68	6523.11
6/2/2003	55.94	6522.85
6/9/2003	56.14	6522.65
6/16/2003	56.35	6522.44
6/23/2003	56.27	6522.52
6/30/2003	56.20	6522.59
7/7/2003	55.88	6522.91
7/14/2003	55.89	6522.90
7/21/2003	55.89	6522.90
7/28/2003	55.80	6522.99
8/4/2003	55.52	6523.27
8/11/2003	55.50	6523.29
8/18/2003	55.20	6523.59
8/25/2003	55.30	6523.49
9/2/2003	55.40	6523.39
9/8/2003	55.35	6523.44
9/15/2003	55.36	6523.43
9/22/2003	55.20	6523.59
9/29/2003	55.00	6523.79
10/6/2003	55.08	6523.71
10/13/2003	55.00	6523.79
10/20/2003	54.55	6524.24
10/27/2003	54.31	6524.48
11/3/2003	54.15	6524.64
11/10/2003	54.25	6524.54
11/17/2003	54.03	6524.76
11/24/2003	54.21	6524.58
12/1/2003	54.00	6524.79
12/8/2003	53.77	6525.02
12/15/2003	53.63	6525.16
12/22/2003	53.80	6524.99
12/29/2003	53.70	6525.09
1/5/2004	53.71	6525.08
1/12/2004	53.46	6525.33
1/19/2004	53.22	6525.57
1/26/2004	53.19	6525.60

SP

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/6/2003	55.49	6523.17
1/13/2003	55.31	6523.35
1/20/2003	55.17	6523.49
1/27/2003	55.14	6523.52
2/3/2003	55.00	6523.66
2/10/2003	54.93	6523.73
2/17/2003	54.77	6523.89
2/24/2003	54.84	6523.82
3/3/2003	55.07	6523.59
3/10/2003	55.03	6523.63
3/17/2003	55.00	6523.66
3/24/2003	55.25	6523.41
3/31/2003	55.42	6523.24
4/7/2003	55.56	6523.10
4/14/2003	55.57	6523.09
4/21/2003	55.53	6523.13
4/28/2003	55.41	6523.25
5/5/2003	55.47	6523.19
5/12/2003	55.49	6523.17
5/19/2003	55.94	6522.72
5/27/2003	56.27	6522.39
6/2/2003	56.44	6522.22
6/9/2003	56.66	6522.00
6/16/2003	56.86	6521.80
6/23/2003	56.81	6521.85
6/30/2003	56.62	6522.04
7/7/2003	56.18	6522.48
7/14/2003	56.21	6522.45
7/21/2003	56.15	6522.51
7/28/2003	56.00	6522.66
8/4/2003	55.59	6523.07
8/11/2003	55.35	6523.31
8/18/2003	55.13	6523.53
8/25/2003	55.38	6523.28
9/2/2003	55.52	6523.14
9/8/2003	55.50	6523.16
9/15/2003	55.55	6523.11
9/22/2003	55.40	6523.26
9/29/2003	55.20	6523.46
10/6/2003	55.31	6523.35
10/13/2003	55.28	6523.38
10/20/2003	54.62	6524.04
10/27/2003	54.50	6524.16
11/3/2003	54.35	6524.31
11/10/2003	54.44	6524.22
11/17/2003	54.30	6524.36
11/24/2003	54.51	6524.15
12/1/2003	54.25	6524.41
12/8/2003	54.06	6524.60
12/15/2003	53.88	6524.78
12/22/2003	53.93	6524.73
12/29/2003	53.90	6524.76
1/5/2004	54.03	6524.63
1/12/2004	53.86	6524.80
1/19/2004	53.79	6524.87
1/26/2004	53.66	6525.00

SW

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/28/2003	60.54	6520.75

T

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
9/22/2003	35.30	6543.93

T2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	133.20	6531.62
1/22/2004	131.28	6533.54

T4

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	129.80	6527.94
1/22/2004	129.74	6528.00

T5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	120.88	6536.45
1/22/2004	120.65	6536.68

T6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	106.47	6552.30

T7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	124.35	6535.32

T8

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	123.65	6537.96

T9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	92.90	6571.05

T10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	106.12	6553.84

T11

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	124.30	6532.51

T12

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	63.34	6593.89

T18

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	131.95	6533.21
1/22/2004	133.00	6532.16

T41

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2003	125.72	6534.24

TA

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
9/22/2003	39.20	6541.10

W

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/12/2004	48.53	6523.61

WR10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/29/2003	14.84	6558.35

WR11

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/29/2003	14.88	6559.61

WR12

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2003	42.90	6525.29

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
WR14		
5/28/2003	15.50	6551.41
WR15		
5/28/2003	10.90	6560.29
WR16		
1/29/2003	6.54	6566.24
WR17		
1/29/2003	2.45	6570.64
WR18		
1/29/2003	2.97	6569.94
WR19		
1/29/2003	3.31	6571.62
WR20		
1/29/2003	3.98	6570.49
WR21		
1/29/2003	6.28	6569.77
WR22		
1/29/2003	3.44	6574.45
WR23		
1/29/2003	1.72	6574.75
WR24		
1/29/2003	2.04	6586.63
X		
2/3/2003	15.90	6555.71
2/18/2003	14.91	6556.70
3/3/2003	16.74	6554.87
3/31/2003	16.24	6555.37
4/21/2003	18.60	6553.01
5/5/2003	18.45	6553.16
6/2/2003	16.31	6555.30
6/30/2003	15.77	6555.84
7/15/2003	15.65	6555.96
8/4/2003	16.28	6555.33
9/2/2003	15.39	6556.22
9/29/2003	14.60	6557.01
10/9/2003	15.11	6556.50
11/3/2003	15.40	6556.21
12/1/2003	17.60	6554.01
12/29/2003	18.00	6553.61

* Drawdown Tube Pressure, # Transducer Reading

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

WATER-LEVEL ELEVATION (FT-MSL)

0410

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
8/26/2003	36.60	6523.06

0435

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/25/2003	34.48	6526.52

0482

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2003	40.00	6522.66

0490

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/4/2003	37.18	6525.24

0491

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
9/4/2003	37.86	6524.78
12/12/2003	42.68	6519.94

0496

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
8/21/2003	80.84	6481.68
12/18/2003	55.24	6507.28

0497

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
8/25/2003	58.71	6503.91
12/18/2003	55.07	6507.55

0498

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/19/2004	57.80	6502.20

0688

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/4/2003	62.42	6500.20

0844

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/15/2003	34.54	6521.59

0845

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/13/2004	34.70	6522.35

CW44

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/15/2003	142.80	6417.94
5/27/2003	157.82	6402.92
7/9/2003	178.70	6382.04
12/23/2003	61.50	6499.24

SUB1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/22/2003	33.78	6527.22
1/15/2004	33.74	6527.26

SUB2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/15/2004	40.80	6526.77

SUB3

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/22/2003	28.80	6528.27
1/15/2004	28.60	6528.47

* Drawdown Tube Pressure, # Transducer Reading

0410 - SUB3

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0520		
10/13/2003	53.65	6532.37
12/18/2003	54.05	6531.97
0521		
1/28/2003	64.38	6520.06
10/13/2003	56.18	6528.26
1/13/2004	55.89	6528.55
0522		
1/28/2003	51.45	6529.08
10/13/2003	49.46	6531.07
10/29/2003	51.90	6528.63
1/12/2004	51.65	6528.88
1/13/2004	51.90	6528.63
0524		
1/28/2003	3.47	6586.88
0538		
1/19/2004	80.40	6467.60
0539		
1/22/2004	82.26	6471.74
0540		
1/20/2004	67.81	6489.19
0631		
4/15/2003	10.54	6530.56
5/27/2003	106.36	6434.74
9/18/2003	105.42	6435.68
12/18/2003	87.35	6453.75
0632		
9/18/2003	102.11	6439.19
12/18/2003	86.97	6454.33
0633		
12/18/2003	74.53	6483.03
0634		
4/15/2003	84.60	6475.47
12/18/2003	72.25	6487.82
0636		
1/6/2004	99.08	6474.36
0637		
1/6/2004	105.07	6470.13
0638		
10/13/2003	54.14	6531.42
12/18/2003	53.03	6532.53
0639		
1/28/2003	60.73	6527.15
10/13/2003	60.76	6527.12
1/13/2004	60.00	6527.88
0640		
12/18/2003	51.70	6528.27
1/7/2004	51.65	6528.32
0641		
1/28/2003	1.85	6571.51
1/29/2003	2.23	6571.13
0642		
1/28/2003	1.69	6570.19
1/29/2003	1.69	6570.19
0643		
1/5/2004	72.18	6479.15
0644		
1/7/2004	81.02	6462.88
0646		
1/7/2004	82.49	6460.86
0647		
4/15/2003	104.65	6447.26
8/21/2003	110.04	6441.87
12/18/2003	96.57	6455.34
0648		
5/27/2003	108.51	6439.28
8/21/2003	104.53	6443.26
12/18/2003	101.40	6446.39
0649		
4/15/2003	108.20	6435.09
8/21/2003	112.68	6430.61
12/18/2003	94.55	6448.74
0652		
1/7/2004	85.11	6453.04
0653		
4/15/2003	173.00	6371.97
5/27/2003	176.24	6368.73
9/18/2003	169.54	6375.43
12/18/2003	78.35	6466.62
0654		
12/18/2003	72.23	6478.27
1/5/2004	72.21	6478.29
0657		
4/15/2003	104.70	6447.11
5/27/2003	106.42	6445.39
9/18/2003	106.92	6444.89
12/18/2003	93.05	6458.76
0658		
4/15/2003	116.52	6433.66
9/18/2003	118.11	6432.07
12/18/2003	98.43	6451.75
0659		
4/15/2003	79.48	6480.69
12/18/2003	72.30	6487.87
1/5/2004	72.26	6487.91
0683		
1/6/2004	86.04	6470.00
0684		
1/6/2004	83.00	6470.28
0685		
9/18/2003	92.96	6463.61
12/18/2003	91.33	6465.24
0686		
1/6/2004	107.26	6471.54
0687		
9/18/2003	94.80	6461.16
12/18/2003	90.43	6465.53
0689		
1/7/2004	73.34	6468.68
0692		
1/7/2004	65.73	6519.09
0846		
7/14/2003	44.27	6504.65
0848		
1/28/2003	13.25	6559.24
1/29/2003	13.22	6559.27
0851		
8/25/2003	77.96	6468.48
0855		
4/15/2003	86.28	6454.83
8/21/2003	92.60	6448.51

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0861		
8/25/2003	73.16	6486.69
0862		
4/15/2003	80.40	6475.78
8/21/2003	89.00	6467.18
12/18/2003	64.68	6491.50
0863		
8/21/2003	8.00	6548.56
0864		
8/25/2003	77.43	6469.29
0866		
8/21/2003	2.60	6555.52
0867		
8/22/2003	71.06	6484.84
12/18/2003	70.23	6485.67
0868		
1/28/2003	5.31	6569.43
1/29/2003	5.38	6569.36
0869		
4/15/2003	92.70	6451.79
8/21/2003	92.68	6451.81
12/18/2003	80.56	6463.93
0876		
8/25/2003	80.64	6463.62
12/18/2003	80.92	6463.34
0879		
12/18/2003	69.24	6475.31
0881		
4/15/2003	81.36	6483.68
12/18/2003	68.80	6496.24
1/5/2004	76.13	6488.91
0882		
1/5/2004	68.11	6493.05
0883		
1/5/2004	61.56	6495.57
0884		
1/5/2004	76.38	6489.72
0885		
12/18/2003	75.65	6488.99
1/5/2004	68.71	6495.93
0886		
12/18/2003	72.11	6492.44
1/5/2004	72.00	6492.55
0888		
1/6/2004	76.61	6480.72
0890		
4/15/2003	91.60	6466.83
1/5/2004	74.68	6483.75
0893		
12/18/2003	72.21	6491.76
1/5/2004	72.10	6491.87
0895		
1/6/2004	80.86	6472.98
0896		
1/6/2004	81.91	6473.70
0899		
1/6/2004	95.50	6475.34
0914		
5/15/2003	40.42	6601.58
0921		
5/15/2003	38.38	6585.62
0922		
5/15/2003	52.00	6569.70
0935		
9/18/2003	89.90	6468.22
0994		
3/25/2003	88.55	6466.45
4/21/2003	88.54	6466.46
5/14/2003	89.07	6465.93
6/24/2003	89.85	6465.15
7/17/2003	90.23	6464.77
8/12/2003	90.36	6464.64
9/16/2003	90.70	6464.30
10/27/2003	90.90	6464.10
12/2/2003	90.52	6464.48
0996		
9/18/2003	113.00	6439.52
12/18/2003	94.37	6458.15

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

0434

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/22/2003	36.41	6527.27

0482

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2003	40.00	6522.66

0488

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
8/13/2003	124.90	6437.10
8/14/2003	112.23	6449.77
8/15/2003	113.88	6448.12
8/19/2003	113.80	6448.20

0493

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/20/2003	106.80	6453.48
6/4/2003	114.50	6445.78
12/23/2003	111.60	6448.68

0494

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/4/2003	34.71	6525.43
12/23/2003	34.30	6525.84

0498

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/19/2004	57.80	6502.20

0538

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/19/2004	80.40	6467.60

0539

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/22/2004	82.26	6471.74

0653

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/15/2003	173.00	6371.97
5/27/2003	176.24	6368.73
9/18/2003	169.54	6375.43
12/18/2003	78.35	6466.62

0853

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/17/2003	79.02	6462.36
12/23/2003	80.68	6460.70

0859

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/10/2003	75.70	6477.06
12/23/2003	75.85	6476.91

0929

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	73.62	6518.95
3/3/2003	75.02	6517.55
4/1/2003	72.44	6520.13
4/28/2003	193.90	6398.67
5/5/2003	194.17	6398.40
6/2/2003	194.30	6398.27
6/30/2003	194.85	6397.72
7/7/2003	194.00	6398.57
8/4/2003	193.30	6399.27
8/21/2003	188.53	6404.04
9/2/2003	118.60	6473.97
9/29/2003	193.35	6399.22
11/3/2003	147.05	6445.52
12/1/2003	115.02	6477.55
12/29/2003	163.09	6429.48

0930

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/8/2003	136.18	6462.36

0931

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/8/2003	204.30	6406.26
12/23/2003	192.94	6417.62

0934

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	64.35	6521.24
3/3/2003	65.62	6519.97
4/1/2003	83.55	6502.04
4/28/2003	194.00	6391.59
5/5/2003	197.81	6387.78
6/2/2003	183.52	6402.07
6/30/2003	194.18	6391.41
7/7/2003	188.93	6396.66
8/4/2003	191.88	6393.71
8/21/2003	179.31	6406.28
9/2/2003	123.32	6462.27
9/29/2003	198.27	6387.32
11/3/2003	177.30	6408.29
12/1/2003	107.33	6478.26
12/29/2003	198.38	6387.21

0944

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/3/2003	0.55	6588.06
4/1/2003	1.00	6587.61
5/5/2003	35.00	6553.61
6/2/2003	37.10	6551.51
6/30/2003	184.25	6404.36
8/4/2003	57.30	6531.31
9/2/2003	7.15	6581.46
9/29/2003	108.80	6479.81
11/3/2003	34.85	6553.76
12/1/2003	6.20	6582.41
12/29/2003	182.33	6406.28

0965

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
8/21/2003	3.00	6572.00

0994

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/25/2003	88.55	6466.45
4/21/2003	88.54	6466.46
5/14/2003	89.07	6465.93
6/24/2003	89.85	6465.15
7/17/2003	90.23	6464.77
8/12/2003	90.36	6464.64
9/16/2003	90.70	6464.30
10/27/2003	90.90	6464.10
12/2/2003	90.52	6464.48

CE1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/26/2003	50.70	6519.49
12/23/2003	49.58	6520.61

CE2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	58.92	6517.43
3/3/2003	58.48	6517.87
3/31/2003	66.93	6509.42
4/28/2003	66.41	6509.94
5/5/2003	66.34	6510.01
6/2/2003	66.21	6510.14
6/26/2003	66.20	6510.15
6/30/2003	65.58	6510.77
8/4/2003	64.48	6511.87
9/2/2003	63.60	6512.75
9/29/2003	63.90	6512.45
11/3/2003	67.90	6508.45
12/1/2003	64.80	6511.55
12/29/2003	61.56	6514.79

CE5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/8/2003	41.03	6527.52
12/23/2003	40.46	6528.09

CW1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	147.91	6437.31
3/3/2003	142.63	6442.59
3/31/2003	160.73	6424.49
4/23/2003	151.90	6433.32
5/5/2003	157.80	6427.42
6/2/2003	159.15	6426.07
6/30/2003	166.30	6418.92
7/10/2003	172.51	6412.71
8/4/2003	174.55	6410.67
8/11/2003	162.00	6423.22
9/2/2003	139.80	6445.42
9/29/2003	160.35	6424.87
11/3/2003	157.80	6427.42
12/1/2003	153.35	6431.87
12/29/2003	154.83	6430.39

CW2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	140.62	6444.86
3/3/2003	158.05	6427.43
3/31/2003	148.50	6436.98
4/23/2003	152.51	6432.97
5/5/2003	158.30	6427.18
6/2/2003	157.87	6427.61
6/30/2003	166.10	6419.38
7/10/2003	172.24	6413.24
8/4/2003	174.30	6411.18
9/2/2003	126.20	6459.28
9/9/2003	156.00	6429.48
9/29/2003	159.90	6425.58
11/3/2003	157.50	6427.98
12/1/2003	161.38	6424.10
12/29/2003	162.15	6423.33

CW2-1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/23/2003	61.00	6524.48

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

CW3

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	174.32	6412.86
3/3/2003	43.25	6543.93
3/31/2003	46.40	6540.78
4/22/2003	134.78	6452.40
5/5/2003	134.15	6453.03
6/2/2003	134.58	6452.60
6/30/2003	134.31	6452.87
7/7/2003	133.52	6453.66
8/4/2003	134.00	6453.18
8/11/2003	143.70	6443.48
9/2/2003	145.15	6442.03
9/29/2003	132.05	6455.13
11/3/2003	132.80	6454.38
12/1/2003	141.50	6445.68
12/29/2003	138.18	6449.00

CW4R

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	40.73	6528.00
3/3/2003	39.60	6529.13
7/8/2003	41.10	6527.63
9/29/2003	0.50	6568.23
11/3/2003	0.60	6568.13
12/29/2003	8.15	6560.58

CW5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	0.60	6568.74
3/3/2003	1.40	6567.94
3/31/2003	5.00	6564.34
5/5/2003	0.50	6568.84
6/2/2003	1.00	6568.34
6/30/2003	0.80	6568.54
8/4/2003	0.60	6568.74
9/29/2003	0.50	6568.84
11/3/2003	1.50	6567.84
12/1/2003	1.20	6568.14
12/29/2003	12.58	6556.76

CW6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/23/2003	121.90	6453.74

CW9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/8/2003	65.63	6526.20

CW13

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	1.50	6575.20
3/3/2003	5.45	6571.25
3/31/2003	1.00	6575.70
5/5/2003	15.87	6560.83
6/2/2003	1.00	6575.70
6/30/2003	1.50	6575.20
8/4/2003	4.00	6572.70
9/29/2003	120.00	6456.70
11/3/2003	4.85	6571.85
12/29/2003	17.69	6559.01

CW14

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	15.82	6550.27
3/3/2003	128.00	6438.09
3/31/2003	35.22	6530.87
5/5/2003	2.80	6563.29
5/28/2003	11.30	6554.79
6/2/2003	16.26	6549.83
6/30/2003	31.20	6534.89
8/4/2003	52.90	6513.19
9/29/2003	14.00	6552.09
11/3/2003	6.10	6559.99
12/1/2003	19.91	6546.18
12/29/2003	49.71	6516.38

CW15

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/14/2003	78.76	6472.56
12/23/2003	76.25	6475.07

CW17

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/10/2003	59.49	6529.83
12/23/2003	60.65	6528.67

CW18

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2003	54.36	6518.29
1/29/2003	53.81	6518.84
2/3/2003	55.08	6517.57
3/3/2003	57.30	6515.35
4/1/2003	53.28	6519.37
4/28/2003	132.00	6440.65
5/5/2003	130.74	6441.91
6/2/2003	83.29	6489.36
6/30/2003	92.96	6479.69
7/7/2003	90.88	6481.77
8/4/2003	98.83	6473.82
8/21/2003	95.61	6477.04
9/2/2003	75.02	6497.63
9/29/2003	118.10	6454.55
11/3/2003	98.90	6473.75
12/1/2003	74.52	6498.13
12/29/2003	113.17	6459.48

CW24

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
7/10/2003	57.26	6531.41
12/23/2003	57.30	6531.37

CW25

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/3/2003	2.25	6564.95
3/3/2003	2.35	6564.85
3/31/2003	8.00	6559.20
5/5/2003	3.00	6564.20
6/2/2003	3.00	6564.20
6/30/2003	3.00	6564.20
7/17/2003	3.00	6564.20
8/4/2003	2.40	6564.80
9/2/2003	4.41	6562.79
9/29/2003	3.50	6563.70
11/3/2003	2.60	6564.60
12/1/2003	2.50	6564.70
12/29/2003	14.69	6552.51

CW26

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2003	91.85	6469.58
7/16/2003	99.79	6461.64
12/23/2003	101.05	6460.38

CW27

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2003	73.78	6489.10
7/16/2003	75.89	6486.99
12/23/2003	74.00	6488.88

CW28

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2003	223.85	6347.83
1/28/2003	225.96	6345.72
1/29/2003	230.28	6341.40
2/3/2003	232.80	6338.88
3/3/2003	192.49	6379.19
4/1/2003	89.60	6482.08
4/28/2003	161.49	6410.19
5/5/2003	164.86	6406.82
6/2/2003	195.90	6375.78
6/30/2003	188.58	6383.10
7/7/2003	190.44	6381.24
8/4/2003	188.14	6383.54
8/21/2003	217.18	6354.50
9/2/2003	218.25	6353.43
9/29/2003	165.35	6406.33
11/3/2003	157.20	6414.48
12/1/2003	208.00	6363.68
12/23/2003	212.28	6359.40
12/29/2003	212.15	6359.53

CW29

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/3/2003	83.32	6468.90
3/31/2003	83.86	6468.36
4/15/2003	138.56	6413.66
5/5/2003	165.56	6386.66
6/2/2003	85.71	6466.51
6/30/2003	157.05	6395.17
7/10/2003	194.82	6357.40
8/4/2003	146.95	6405.27
9/2/2003	183.33	6368.89
9/29/2003	173.35	6378.87
11/3/2003	141.84	6410.38
12/1/2003	140.40	6411.82
12/29/2003	137.74	6414.48

CW30

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/3/2003	96.65	6461.66
3/31/2003	95.28	6463.03
5/5/2003	102.86	6455.45
6/2/2003	103.09	6455.22
6/30/2003	131.41	6426.90
7/9/2003	159.00	6399.31
8/4/2003	133.00	6425.31
8/13/2003	142.29	6416.02
8/14/2003	109.04	6449.27
8/15/2003	110.80	6447.51
9/2/2003	91.22	6467.09
9/29/2003	108.95	6449.36
11/3/2003	100.10	6458.21
12/1/2003	99.33	6458.98
12/23/2003	100.23	6458.08
12/29/2003	100.60	6457.71

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
CW31		
7/21/2003	84.53	6475.73
12/23/2003	84.60	6475.66
CW32		
7/21/2003	126.09	6441.19
12/23/2003	121.15	6446.13
CW33		
7/21/2003	106.24	6468.65
12/23/2003	106.21	6468.68
CW35		
7/10/2003	59.00	6532.17
12/23/2003	49.95	6541.22
CW36		
7/17/2003	75.54	6475.55
12/23/2003	75.85	6475.24
CW37		
7/14/2003	61.61	6489.56
12/23/2003	62.05	6489.12
CW39		
7/14/2003	63.00	6487.71
12/23/2003	61.88	6488.83
CW40		
7/7/2003	85.96	6492.98
12/23/2003	102.18	6476.76
CW41		
7/14/2003	94.13	6461.28
12/23/2003	85.65	6469.76
CW42		
7/17/2003	82.80	6465.98
12/23/2003	83.95	6464.83
CW43		
7/17/2003	67.91	6480.88
12/23/2003	68.50	6480.29
CW44		
4/15/2003	142.80	6417.94
5/27/2003	157.82	6402.92
7/9/2003	178.70	6382.04
12/23/2003	61.50	6499.24
CW45		
7/16/2003	62.03	6499.28
12/23/2003	57.45	6503.86
CW46		
7/16/2003	75.81	6486.45
12/23/2003	72.75	6489.51
CW50		
5/29/2003	61.61	6525.39
6/24/2003	61.71	6525.29
7/1/2003	61.79	6525.21
8/14/2003	62.04	6524.96
12/23/2003	62.15	6526.41
CW52		
6/11/2003	94.14	6503.86
6/24/2003	89.44	6508.56
7/1/2003	86.38	6511.62
8/14/2003	80.04	6517.96
12/23/2003	82.80	6509.60
WCW		
7/17/2003	138.16	6429.21
WR25		
7/10/2003	56.29	6530.17
12/23/2003	55.40	6531.06

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL)

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
#1 Deepwell		
5/13/2003	142.06	6441.70
11/3/2003	135.50	6438.20
12/1/2003	184.70	6389.00
12/29/2003	170.40	6403.30
#2 Deepwell		
5/13/2003	134.06	6441.60
0534		
12/23/2003	103.10	6449.47
0535		
12/23/2003	130.10	6409.90
0907		
6/3/2003	101.60	6444.00
10/27/2003	103.28	6442.32
12/23/2003	102.38	6443.22
0928		
6/3/2003	154.48	6443.12
10/27/2003	156.74	6440.86
12/23/2003	155.15	6442.45
0938		
6/3/2003	124.83	6443.97
10/27/2003	126.40	6442.40
12/23/2003	125.23	6443.57
0943		
10/27/2003	79.98	6475.93
12/23/2003	78.88	6477.03
0951		
2/3/2003	131.32	6442.38
3/3/2003	131.28	6442.42
3/31/2003	132.80	6440.90
5/5/2003	134.61	6439.09
6/2/2003	184.70	6389.00
6/30/2003	187.44	6386.26
8/4/2003	136.10	6437.60
9/2/2003	137.60	6436.10
9/29/2003	136.45	6437.25
10/27/2003	135.81	6437.89

* Drawdown Tube Pressure, # Transducer Reading

APPENDIX B

WATER QUALITY

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GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

APPENDIX B

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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.) (µmhos/cm)	Ion_B (ratio)
CS2	8/13/2003	ENER	—	—	—	—	—	—	221	806	1830	*2340	—
CS3	8/13/2003	ENER	—	—	—	—	—	—	158	621	1590	*2150	—
EC4	8/14/2003	ENER	—	—	—	—	—	—	2080	9490	25000	*26000	—
ED1	9/3/2003	ENER	3.60	1.20	25.0	6050	4760	2130	835	5620	17400	*20966	0.912
EN4A	8/14/2003	ENER	—	—	—	—	—	—	112	766	1530	*2170	—
EN4B	8/14/2003	ENER	—	—	—	—	—	—	373	2070	5460	*7130	—
EN12	8/14/2003	ENER	—	—	—	—	—	—	385	2540	6340	*8840	—
ES2	8/13/2003	ENER	—	—	—	—	—	—	199	812	1910	*2630	—
ES3	8/13/2003	ENER	—	—	—	—	—	—	162	592	1490	*2020	—
PW2	8/13/2003	ENER	—	—	—	—	—	—	313	1980	4480	*5960	—
WA3	9/2/2003	ENER	5.40	1.50	20.1	5480	4520	1930	620	5030	15900	*18966	0.918
WD3	8/14/2003	ENER	—	—	—	—	—	—	2510	8440	18100	*21400	—
WE2	9/3/2003	ENER	2.30	< 1.000	21.0	5620	3910	1710	955	5620	16400	*19630	0.925
WE13	8/14/2003	ENER	—	—	—	—	—	—	524	2520	6620	*8910	—
WN5A	8/14/2003	ENER	—	—	—	—	—	—	2940	17800	33100	*29100	—

* 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)	V (mg/l)	Th230 (pCi/l)
CS2	8/13/2003	ENER	—	0.304	0.570	0.0100	—	—	—	—	—
CS3	8/13/2003	ENER	—	1.98	0.880	0.0140	—	—	—	—	—
EC4	8/14/2003	ENER	—	31.6	108	0.0630	—	—	—	—	—
ED1	9/3/2003	ENER	9.90	35.5	70.0	0.415	3.30	212	—	—	—
EN4A	8/14/2003	ENER	—	0.490	0.870	0.0110	—	—	—	—	—
EN4B	8/14/2003	ENER	—	6.09	13.7	0.0930	—	—	—	—	—
EN12	8/14/2003	ENER	—	12.3	23.0	0.0310	—	—	—	—	—
ES2	8/13/2003	ENER	—	0.643	1.32	< 0.0050	—	—	—	—	—
ES3	8/13/2003	ENER	—	0.789	0.650	0.158	—	—	—	—	—
PW2	8/13/2003	ENER	—	8.28	3.13	3.00	—	—	—	—	—
WA3	9/2/2003	ENER	9.88	20.2	71.6	0.483	< 0.100	203	—	—	—
WD3	8/14/2003	ENER	—	29.3	19.7	3.55	—	—	—	—	—
WE2	9/3/2003	ENER	9.89	19.8	63.4	0.227	1.000	168	—	—	—
WE13	8/14/2003	ENER	—	6.57	16.6	0.0960	—	—	—	—	—
WN5A	8/14/2003	ENER	—	80.7	46.3	0.571	—	—	—	—	—

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.) (µmhos/cm)	Ion_B (ratio)
East 1 Sump	3/27/2003	ENER	—	—	—	—	—	—	—	12200	26800	*44296	—
	9/2/2003	ENER	6.30	16.5	42.7	9880	5460	1090	1720	13100	29300	*32300	0.968
East 2 Sump	3/27/2003	ENER	—	—	—	—	—	—	—	12500	28900	*43901	—
	9/2/2003	ENER	5.90	23.0	40.5	9960	7030	1140	2040	12830	29900	*32730	0.913
East Reclaim	3/27/2003	ENER	—	—	—	—	—	—	—	5790	13000	*25027	—
	9/2/2003	ENER	3.10	5.50	23.4	4420	2940	692	989	5190	12100	*15800	0.934
	1/21/2004	ENER	3.50	4.40	22.0	4590	3390	1180	812	5130	13700	—	0.894
North 1 Sump	3/27/2003	ENER	—	—	—	—	—	—	—	8540	19300	*32456	—
	9/2/2003	ENER	15.6	27.8	40.0	7670	5400	878	1350	10020	14700	*25730	0.927
South 1 Sump	3/27/2003	ENER	—	—	—	—	—	—	—	8970	24000	*38159	—
	9/2/2003	ENER	6.90	26.1	42.5	8990	6280	1780	1090	11400	28200	*29420	0.917
West 1 Sump	3/27/2003	ENER	—	—	—	—	—	—	—	10600	21100	*35610	—
	9/2/2003	ENER	16.8	73.5	39.7	7460	4020	385	1520	11040	23500	*25740	0.946
West Reclaim	3/27/2003	ENER	—	—	—	—	—	—	—	6900	16700	*28716	—
	9/2/2003	ENER	14.0	29.5	18.2	5950	4940	840	938	7180	18000	*21020	0.921

* 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)	V (mg/l)	Th230 (pCi/l)
East 1 Sump	3/27/2003	ENER	—	43.4	101	1.22	—	—	—	—	—
	9/2/2003	ENER	9.55	37.2	108	2.96	< 0.100	177	—	—	—
East 2 Sump	3/27/2003	ENER	—	98.6	117	0.690	—	—	—	—	—
	9/2/2003	ENER	9.46	62.9	123	0.300	3.90	10.7	—	—	—
East Reclaim	3/27/2003	ENER	—	24.3	55.5	0.640	—	—	—	—	—
	9/2/2003	ENER	9.62	23.5	49.7	0.780	4.60	49.9	—	—	—
	1/21/2004	ENER	9.79	22.7	53.9	0.620	0.470	99.7	< 1.000	0.160	< 0.200
North 1 Sump	3/27/2003	ENER	—	33.4	71.1	3.02	—	—	—	—	—
	9/2/2003	ENER	9.53	39.2	84.3	5.33	3.70	77.9	—	—	—
South 1 Sump	3/27/2003	ENER	—	28.2	135	1.01	—	—	—	—	—
	9/2/2003	ENER	9.70	24.0	110	5.71	0.500	315	—	—	—
West 1 Sump	3/27/2003	ENER	—	33.8	60.5	1.87	—	—	—	—	—
	9/2/2003	ENER	9.23	40.1	60.2	6.57	0.500	9.00	—	—	—
West Reclaim	3/27/2003	ENER	—	27.1	76.0	0.170	—	—	—	—	—
	9/2/2003	ENER	9.48	25.7	85.1	0.694	2.40	32.1	—	—	—

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.) (µmhos/cm)	Ion_B (ratio)
E Coll Pond	2/13/2003	ENER	18.5	192	79.2	7580	3110	149	1210	11100	19600	—	1.09
	4/21/2003	ENER	—	—	—	—	—	—	1390	11700	22000	*34832	—
	8/11/2003	ENER	—	—	—	—	—	—	1510	12000	23200	*26060	—
	10/8/2003	ENER	—	—	—	—	—	—	1380	10800	20800	*24110	—
Evap Pond 1	2/13/2003	ENER	12.4	474	153	23600	9930	1940	5080	34400	65100	*84487	0.985
	4/21/2003	ENER	—	—	—	—	—	—	5250	38100	71700	*89398	—
	8/11/2003	ENER	—	—	—	—	—	—	6600	45600	88400	*74500	—
	10/8/2003	ENER	—	—	—	—	—	—	6210	50500	102000	*79500	—
Evap Pond 2	2/13/2003	ENER	16.9	302	84.4	13500	5450	828	2560	20200	35000	*57165	1.01
	4/21/2003	ENER	—	—	—	—	—	—	3020	19800	40300	*57719	—
	8/11/2003	ENER	—	—	—	—	—	—	4390	29600	57500	*54100	—
	10/8/2003	ENER	—	—	—	—	—	—	3050	27700	65000	*52000	—
W Coll Pond	1/22/2003	ENER	3.00	—	—	—	—	—	482	3530	8000	—	—
	2/13/2003	ENER	5.30	64.7	38.2	2620	1330	128	490	3840	7900	*14938	1.01
	4/21/2003	ENER	—	—	—	—	—	—	446	3050	4300	*10805	—
	8/11/2003	ENER	—	—	—	—	—	—	587	3680	7160	*9530	—
	10/8/2003	ENER	—	—	—	—	—	—	300	2910	5620	*7580	—

* 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)	V (mg/l)	Th230 (pCi/l)
E Coll Pond	2/13/2003	ENER	8.93	36.1	50.3	2.16	8.60	27.3	< 1.000	< 0.0100	103
	4/21/2003	ENER	—	36.0	81.5	2.79	—	—	—	—	—
	8/11/2003	ENER	—	47.9	80.9	2.64	—	—	—	—	—
	10/8/2003	ENER	—	43.0	71.2	3.08	—	—	—	—	—
Evap Pond 1	2/13/2003	ENER	9.54	173	258	0.960	< 0.100	44.5	< 1.000	0.370	267
	4/21/2003	ENER	—	111	232	0.860	—	—	—	—	—
	8/11/2003	ENER	—	220	292	0.830	—	—	—	—	—
	10/8/2003	ENER	—	240	296	0.480	—	—	—	—	—
Evap Pond 2	2/13/2003	ENER	9.43	78.3	134	1.65	1.30	21.3	< 1.000	0.420	175
	4/21/2003	ENER	—	64.5	134	1.65	—	—	—	—	—
	8/11/2003	ENER	—	97.4	127	1.14	—	—	—	—	—
	10/8/2003	ENER	—	132	151	0.950	—	—	—	—	—
W Coll Pond	1/22/2003	ENER	9.40	19.0	29.4	0.898	—	—	—	—	—
	2/13/2003	ENER	9.23	17.5	28.4	0.960	1.70	< 0.200	< 1.000	0.0900	0.300
	4/21/2003	ENER	—	13.3	21.7	0.624	—	—	—	—	—
	8/11/2003	ENER	—	14.0	25.4	0.496	—	—	—	—	—
	10/8/2003	ENER	—	11.0	21.0	0.629	—	—	—	—	—

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.) (µmhos/cm)	Ion_B (ratio)
0690	1/12/2004	ENER	—	—	—	—	—	—	—	345	1650	* 1534	—
0691	1/12/2004	ENER	—	—	—	—	—	—	—	466	1260	* 1862	—
1A	3/10/2003	ENER	—	—	—	—	—	—	201	1040	2670	* 4107	—
1F	1/8/2004	ENER	—	—	—	—	—	—	274	1260	2680	* 3586	—
1G	1/8/2004	ENER	—	—	—	—	—	—	337	1040	2400	* 3360	—
1J	3/20/2003	ENER	—	—	—	—	—	—	—	1580	6050	* 9810	—
	5/21/2003	ENER	810	149	10.3	888	473	< 1.000	1620	1600	5910	* 8033	1.06
1K	5/21/2003	ENER	92.4	20.0	3.20	476	533	< 1.000	200	659	1690	* 2404	0.961
1L	1/8/2004	ENER	—	—	—	—	—	—	144	409	1160	* 1742	—
1M	1/8/2004	ENER	—	—	—	—	—	—	26.0	92.0	409	* 610	—
1N	2/24/2003	ENER	—	—	—	—	—	—	—	730	2030	* 3890	—
1P	2/24/2003	ENER	—	—	—	—	—	—	—	783	2800	* 5308	—
1Q	5/20/2003	ENER	801	148	10.2	914	401	< 1.000	1770	1420	6060	* 8450	1.07
1R	5/20/2003	ENER	185	35.5	4.70	492	371	< 1.000	531	651	2120	—	0.972
1S	5/20/2003	ENER	739	158	10.9	1800	775	< 1.000	1940	2720	8780	* 10160	1.04
1T	5/20/2003	ENER	659	122	9.80	804	423	< 1.000	1490	1310	5070	* 7170	1.02
1U	5/21/2003	ENER	697	159	11.4	1690	612	< 1.000	1950	2530	8260	* 10490	1.03
B	6/25/2003	ENER	—	—	—	—	—	—	213	933	2180	* 2882	—
B3	7/24/2003	ENER	—	—	—	—	—	—	433	2410	4800	—	—
B4	7/17/2003	ENER	—	—	—	—	—	—	528	3030	6260	—	—
B5	7/24/2003	ENER	—	—	—	—	—	—	329	3530	7410	—	—
B6	7/24/2003	ENER	—	—	—	—	—	—	310	2460	5300	—	—
B7	7/24/2003	ENER	—	—	—	—	—	—	282	3050	6500	—	—

* Signifies Specific Conductivity from HMC

TABLE B.4-1. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)
B8	7/24/2003	ENER	—	—	—	—	—	—	353	2150	5160	—	—
B9	7/24/2003	ENER	—	—	—	—	—	—	327	2490	5650	—	—
B10	7/24/2003	ENER	—	—	—	—	—	—	352	3070	6750	—	—
B11	2/24/2003	ENER	—	—	—	—	—	—	197	1780	3500	*5957	—
	2/24/2003	ENER	—	—	—	—	—	—	# 194	# 1790	# 3470	—	—
	7/24/2003	ENER	—	—	—	—	—	—	194	1790	6180	—	—
	10/14/2003	ENER	—	—	—	—	—	—	300	2710	5120	*6328	—
BC	6/24/2003	ENER	—	—	—	—	—	—	70.6	1100	2100	*2559	—
BP	1/8/2004	ENER	—	—	—	—	—	—	204	990	2130	*2850	—
C1	2/24/2003	ENER	—	—	—	—	—	—	44.6	276	894	*1674	—
	8/28/2003	ENER	—	—	—	—	—	—	26.2	197	652	*928	—
C2	2/24/2003	ENER	—	—	—	—	—	—	79.9	325	1060	*1976	—
	8/28/2003	ENER	—	—	—	—	—	—	70.6	337	1010	*1478	—
C5	1/12/2004	ENER	—	—	—	—	—	—	31.0	89.0	422	*640	—
C6	4/28/2003	ENER	—	—	—	—	—	—	113	992	2290	*3930	—
	9/22/2003	ENER	—	—	—	—	—	—	59.7	716	1700	*2368	—
C7	4/28/2003	ENER	—	—	—	—	—	—	478	2210	5100	*6836	—
	9/22/2003	ENER	—	—	—	—	—	—	381	2080	4570	*5710	—
C8	4/28/2003	ENER	—	—	—	—	—	—	582	1700	4070	*6836	—
	9/22/2003	ENER	—	—	—	—	—	—	576	1770	4160	*5320	—
C9	4/28/2003	ENER	—	—	—	—	—	—	490	2120	4800	*7862	—
	9/22/2003	ENER	—	—	—	—	—	—	382	2050	4300	*5410	—
C10	4/28/2003	ENER	—	—	—	—	—	—	586	2600	5970	*9629	—
	9/22/2003	ENER	—	—	—	—	—	—	537	2320	5090	*6440	—
C11	4/28/2003	ENER	—	—	—	—	—	—	259	1780	3810	*6483	—

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

TABLE B.4-1. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)
C11	9/22/2003	ENER	—	—	—	—	—	—	281	2120	4380	*5630	—
C12	4/28/2003	ENER	—	—	—	—	—	—	180	906	2350	*4450	—
	9/22/2003	ENER	—	—	—	—	—	—	178	1130	2600	*3643	—
D1	6/24/2003	ENER	219	52.1	4.40	330	533	< 1.000	197	730	1950	*2605	1.01
DA3	7/17/2003	ENER	—	—	—	—	—	—	472	2910	6130	—	—
DA4	7/24/2003	ENER	—	—	—	—	—	—	977	6560	14700	—	—
DC	6/24/2003	ENER	—	—	—	—	—	—	56.6	801	1630	*1909	—
DD	6/3/2003	ENER	352	89.4	6.90	313	381	< 1.000	74.0	1460	2680	*3118	0.999
DQ	7/25/2003	ENER	—	—	—	—	—	—	340	2500	5670	—	—
DR	7/24/2003	ENER	—	—	—	—	—	—	907	5930	13300	—	—
DT	7/17/2003	ENER	—	—	—	—	—	—	486	3470	7250	—	—
DV	7/25/2003	ENER	—	—	—	—	—	—	650	4940	10800	—	—
F	7/15/2003	ENER	—	—	—	—	—	—	208	684	1800	*2429	—
FB	1/22/2003	ENER	—	—	—	—	—	—	—	778	1740	*2723	—
	10/13/2003	ENER	—	—	—	—	—	—	196	706	1720	*2293	—
	1/13/2004	ENER	—	—	—	—	—	—	—	362	1720	*2252	—
GH	3/10/2003	ENER	—	—	—	—	—	—	—	558	1610	*2846	—
GV	1/8/2004	ENER	—	—	—	—	—	—	211	678	1790	*2443	—
I	6/25/2003	ENER	—	—	—	—	—	—	130	443	1330	*1856	—
K4	2/24/2003	ENER	—	—	—	—	—	—	88.1	600	1500	*2459	—
	4/30/2003	ENER	—	—	—	—	—	—	76.1	570	1370	*2524	—
	7/17/2003	ENER	—	—	—	—	—	—	56.6	363	1010	—	—
	1/13/2004	ENER	—	—	—	—	—	—	61.0	276	813	*1238	—
K5	2/24/2003	ENER	—	—	—	—	—	—	83.6	1580	2950	*4943	—
	4/30/2003	ENER	—	—	—	—	—	—	86.2	1580	2750	*4352	—

* Signifies Specific Conductivity from HMC

TABLE B.4-1. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)
K5	7/17/2003	ENER	—	—	—	—	—	—	80.1	1430	2580	—	—
	11/17/2003	ENER	—	—	—	—	—	—	87.0	1450	2420	*3252	—
	1/13/2004	ENER	—	—	—	—	—	—	78.0	1330	2370	*3202	—
K7	2/24/2003	ENER	—	—	—	—	—	—	66.6	615	1380	*2527	—
	4/30/2003	ENER	—	—	—	—	—	—	35.5	286	705	*1368	—
	7/17/2003	ENER	—	—	—	—	—	—	70.1	651	1390	—	—
	11/17/2003	ENER	—	—	—	—	—	—	81.4	716	1430	*2110	—
	1/13/2004	ENER	—	—	—	—	—	—	98.0	963	1860	*2674	—
K8	2/24/2003	ENER	—	—	—	—	—	—	64.4	797	1680	*3080	—
	7/17/2003	ENER	—	—	—	—	—	—	48.4	618	1370	—	—
	11/17/2003	ENER	—	—	—	—	—	—	71.8	1020	1800	*2546	—
	1/13/2004	ENER	—	—	—	—	—	—	64.0	941	1780	*2502	—
K9	2/24/2003	ENER	—	—	—	—	—	—	73.4	916	1970	*3539	—
	4/30/2003	ENER	—	—	—	—	—	—	67.4	1170	1940	*3719	—
	7/17/2003	ENER	—	—	—	—	—	—	65.8	832	1780	—	—
	11/17/2003	ENER	—	—	—	—	—	—	70.1	754	1480	*2120	—
	1/13/2004	ENER	—	—	—	—	—	—	62.0	687	1440	*2080	—
K10	2/24/2003	ENER	—	—	—	—	—	—	48.1	474	1300	*2339	—
	4/30/2003	ENER	—	—	—	—	—	—	84.7	759	1710	*3103	—
	11/17/2003	ENER	—	—	—	—	—	—	58.5	598	1300	*1908	—
K11	2/24/2003	ENER	—	—	—	—	—	—	46.7	430	1220	*2239	—
	2/24/2003	ENER	—	—	—	—	—	—	# 45.8	# 429	# 1220	—	—
	4/30/2003	ENER	—	—	—	—	—	—	40.7	431	1120	*2142	—
	7/17/2003	ENER	—	—	—	—	—	—	34.1	287	924	—	—
	11/17/2003	ENER	—	—	—	—	—	—	52.7	438	1070	*1588	—
	1/13/2004	ENER	—	—	—	—	—	—	49.0	464	1130	*1673	—
KEB	3/20/2003	ENER	—	—	—	—	—	—	19.4	199	680	*1342	—

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

TABLE B.4-1. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)
KF	3/20/2003	ENER	—	—	—	—	—	—	19.6	74.2	283	*579	—
KZ	3/20/2003	ENER	—	—	—	—	—	—	20.7	112	384	*2603	—
L	11/18/2003	ENER	—	—	—	—	—	—	169	664	1590	*2210	—
L5	11/18/2003	ENER	—	—	—	—	—	—	147	475	1190	*1720	—
L6	11/18/2003	ENER	—	—	—	—	—	—	93.6	243	852	*1242	—
	1/8/2004	ENER	—	—	—	—	—	—	83.2	224	752	*1213	—
L7	11/18/2003	ENER	—	—	—	—	—	—	125	442	1150	*1680	—
L8	11/18/2003	ENER	—	—	—	—	—	—	126	446	1110	*1620	—
L9	11/18/2003	ENER	—	—	—	—	—	—	80.5	312	851	*1290	—
L10	11/18/2003	ENER	—	—	—	—	—	—	82.3	305	926	*1395	—
M3	7/17/2003	ENER	—	—	—	—	—	—	283	1480	3130	—	—
M5	1/12/2004	ENER	—	—	—	—	—	—	210	759	1930	*2565	—
M9	12/8/2003	ENER	—	—	—	—	—	—	84.5	1610	2970	*3670	—
M10	12/8/2003	ENER	—	—	—	—	—	—	87.5	1880	3470	*3943	—
M11	12/8/2003	ENER	—	—	—	—	—	—	110	817	1900	*25.2	—
MO	3/10/2003	ENER	—	—	—	—	—	—	—	1140	2530	*3971	—
	3/10/2003	ENER	—	—	—	—	—	—	—	# 1100	# 2520	—	—
	10/13/2003	ENER	—	—	—	—	—	—	204	1190	2530	*3127	—
MQ	1/12/2004	ENER	—	—	—	—	—	—	203	1420	2820	*3471	—
MR	1/19/2004	ENER	—	—	—	—	—	—	191	1080	2390	*3005	—
MS	1/19/2004	ENER	—	—	—	—	—	—	193	725	1880	*2509	—
MT	1/19/2004	ENER	—	—	—	—	—	—	90.0	1130	2140	*2686	—
MU	1/15/2004	ENER	—	—	—	—	—	—	236	1790	3470	*3850	—
MX	1/15/2004	ENER	—	—	—	—	—	—	196	698	1850	*2478	—

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

TABLE B.4-1. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)
MY	1/15/2004	ENER	—	—	—	—	—	—	190	688	1790	*2390	—
MZ	12/8/2003	ENER	—	—	—	—	—	—	72.0	1930	3350	*3766	—
N	8/28/2003	ENER	—	—	—	—	—	—	80.2	1360	2440	*2915	—
NA	9/2/2003	ENER	—	—	—	—	—	—	716	4930	11200	*13850	—
NB	8/28/2003	ENER	—	—	—	—	—	—	1760	13400	27000	*28980	—
NC	8/28/2003	ENER	—	—	—	—	—	—	46.9	701	1280	*1708	—
ND	5/22/2003	ENER	46.2	12.4	1.30	471	353	< 1.000	161	729	1530	*2243	0.934
O	8/28/2003	ENER	—	—	—	—	—	—	180	1030	1980	*2620	—
	1/15/2004	ENER	—	—	—	—	—	—	—	953	1930	*2547	—
P	7/15/2003	ENER	259	54.3	5.50	250	253	< 1.000	54.6	1070	1860	*2296	1.01
P2	4/23/2003	ENER	310	62.3	6.90	274	237	< 1.000	62.0	1270	2210	*3387	1.02
P4	4/23/2003	ENER	192	35.4	3.50	223	191	< 1.000	46.2	838	1470	*2486	1.02
Q	5/15/2003	ENER	354	67.3	7.30	268	237	< 1.000	66.6	1390	2340	*3587	1.01
R	5/15/2003	ENER	324	54.8	4.40	279	146	< 1.000	60.5	1350	2220	*3419	1.02
S	1/12/2004	ENER	—	—	—	—	—	—	737	10600	21800	*24630	—
S2	1/21/2003	ENER	—	—	—	—	—	—	—	2130	4400	*5886	—
	7/15/2003	ENER	—	—	—	—	—	—	210	2230	4220	*5140	—
	1/13/2004	ENER	—	—	—	—	—	—	—	1590	3150	*3970	—
	1/13/2004	ENER	—	—	—	—	—	—	—	# 1580	# 3170	—	—
S3	1/12/2004	ENER	—	—	—	—	—	—	218	1340	2820	*3699	—
S4	3/10/2003	ENER	—	—	—	—	—	—	—	1370	2950	*4497	—
	7/15/2003	ENER	392	95.7	6.90	411	393	< 1.000	151	1700	3010	*3530	0.986
S5	7/17/2003	ENER	—	—	—	—	—	—	397	3500	4170	—	—
S6	7/23/2003	ENER	—	—	—	—	—	—	538	4490	9530	—	—

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

TABLE B.4-1. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)
S7	7/23/2003	ENER	—	—	—	—	—	—	516	4950	9410	—	—
S11	1/12/2004	ENER	—	—	—	—	—	—	220	1660	3080	*3718	—
SA	7/17/2003	ENER	—	—	—	—	—	—	278	1680	3550	—	—
SM	5/28/2003	ENER	—	—	—	—	—	—	903	10600	19800	*25331	—
SO	5/28/2003	ENER	—	—	—	—	—	—	286	3700	6770	*9947	—
SQ	7/24/2003	ENER	—	—	—	—	—	—	458	4310	8300	—	—
SS	7/17/2003	ENER	—	—	—	—	—	—	227	2040	7300	—	—
ST	7/17/2003	ENER	—	—	—	—	—	—	234	1320	2850	—	—
SUR	7/17/2003	ENER	—	—	—	—	—	—	314	2010	4010	—	—
SV	7/17/2003	ENER	—	—	—	—	—	—	559	4870	9560	—	—
SW	5/28/2003	ENER	—	—	—	—	—	—	1110	8540	18900	*28615	—
T	3/20/2003	ENER	—	—	—	—	—	—	—	514	1270	*2514	—
	7/24/2003	ENER	—	—	—	—	—	—	57.2	485	1120	—	—
	9/22/2003	ENER	—	—	—	—	—	—	48.0	692	1400	*2260	—
T2	1/22/2004	ENER	—	—	—	—	—	—	254	2460	5500	*7040	—
T4	1/22/2004	ENER	9.30	19.0	22.0	4890	2740	602	1070	6730	15000	*17210	0.915
T5	1/22/2004	ENER	90.0	53.0	9.30	4130	3110	506	803	5380	13100	*15630	0.932
T18	1/22/2004	ENER	390	98.0	7.20	1610	1060	< 1.000	396	3420	6870	*7980	0.980
TA	7/24/2003	ENER	—	—	—	—	—	—	141	641	1400	—	—
	9/22/2003	ENER	—	—	—	—	—	—	60.7	318	892	*1443	—
W	1/12/2004	ENER	—	—	—	—	—	—	181	756	1800	*2366	—
X	2/18/2003	ENER	—	—	—	—	—	—	38.7	100.0	386	*727	—
	4/21/2003	ENER	—	—	—	—	—	—	25.7	63.9	283	*644	—
	4/21/2003	ENER	—	—	—	—	—	—	# 24.6	# 62.7	# 272	—	—

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

TABLE B.4-1. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)
X	7/15/2003	ENER	51.0	8.30	1.90	30.6	129	< 1.000	33.7	73.0	267	* 443	0.998
	7/15/2003	ENER	# 51.1	# 8.20	# 1.90	# 30.4	# 129	# < 1.000	# 31.1	# 72.1	# 262	—	# 1.02
	10/9/2003	ENER	—	—	—	—	—	—	26.7	82.5	327	* 520	—
	10/9/2003	ENER	—	—	—	—	—	—	# 28.5	# 88.4	# 323	—	—

Signifies Quality Control Sample

* 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)	V (mg/l)	Th230 (pCi/l)
0690	1/12/2004	ENER	—	0.356	—	0.336	—	—	—	—	—
0691	1/12/2004	ENER	—	0.0214	—	0.223	—	—	—	—	—
1A	3/10/2003	ENER	—	0.666	0.0500	0.358	—	—	—	—	—
1F	1/8/2004	ENER	—	8.99	< 0.0300	0.411	6.55	—	—	—	—
1G	1/8/2004	ENER	—	0.0446	< 0.0300	0.542	14.4	—	—	—	—
1J	3/20/2003	ENER	—	56.6	14.4	15.7	—	—	—	—	—
	5/21/2003	ENER	7.29	49.8	14.3	14.9	25.3	0.300	4.90	0.0300	0.400
1K	5/21/2003	ENER	7.71	3.61	4.88	0.491	3.00	< 0.200	< 1.000	0.0300	0.400
1L	1/8/2004	ENER	—	0.126	0.720	0.334	1.57	—	—	—	—
1M	1/8/2004	ENER	—	0.138	0.150	0.0340	0.690	—	—	—	—
1N	2/24/2003	ENER	—	0.0544	< 0.0300	0.0360	—	—	—	—	—
1P	2/24/2003	ENER	—	0.102	< 0.0300	1.53	—	—	—	—	—
1Q	5/20/2003	ENER	7.27	46.7	11.5	14.1	26.6	0.300	< 1.000	0.0200	0.500
1R	5/20/2003	ENER	7.65	0.277	0.0400	0.295	13.3	2.40	< 1.000	< 0.0100	0.300
1S	5/20/2003	ENER	7.33	106	43.1	10.9	20.7	< 0.200	< 1.000	0.0800	0.400
1T	5/20/2003	ENER	7.15	27.6	8.48	10.7	21.4	0.600	3.70	0.0200	0.300
1U	5/21/2003	ENER	7.21	71.2	25.2	13.5	14.8	0.400	6.00	0.0500	0.400
B	6/25/2003	ENER	—	0.393	< 0.0300	0.300	3.10	—	—	—	—
B3	7/24/2003	ENER	—	12.2	14.6	0.439	3.10	—	—	—	—
B4	7/17/2003	ENER	—	17.8	21.2	0.602	4.60	—	—	—	—
B5	7/24/2003	ENER	—	27.9	2.11	0.822	7.10	—	—	—	—
B6	7/24/2003	ENER	—	19.4	1.50	0.970	5.90	—	—	—	—
B7	7/24/2003	ENER	—	19.7	16.2	0.617	5.70	—	—	—	—

TABLE B.4-2. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)	V (mg/l)	Th230 (pCi/l)
B8	7/24/2003	ENER	—	20.2	27.6	1.81	6.10	—	—	—	—
B9	7/24/2003	ENER	—	14.7	16.2	1.46	7.10	—	—	—	—
B10	7/24/2003	ENER	—	13.1	21.5	1.35	11.8	—	—	—	—
B11	2/24/2003	ENER	—	5.19	15.6	0.793	—	—	—	—	—
	2/24/2003	ENER	—	# 5.26	# 15.6	# 0.764	—	—	—	—	—
	7/24/2003	ENER	—	10.1	17.1	1.78	8.30	—	—	—	—
	10/14/2003	ENER	—	9.12	16.7	1.20	12.7	—	—	—	—
BC	6/24/2003	ENER	—	0.190	0.0400	< 0.0050	0.600	—	—	—	—
BP	1/8/2004	ENER	—	0.916	0.170	0.188	4.80	—	—	—	—
C1	2/24/2003	ENER	—	0.509	1.66	0.0380	—	—	—	—	—
	8/28/2003	ENER	—	0.305	2.02	0.0290	0.700	—	—	—	—
C2	2/24/2003	ENER	—	0.228	0.470	0.0190	—	—	—	—	—
	8/28/2003	ENER	—	0.260	0.510	0.0200	0.800	—	—	—	—
C5	1/12/2004	ENER	—	0.214	0.520	0.0120	0.610	—	—	—	—
C6	4/28/2003	ENER	—	4.46	15.2	0.397	—	—	—	—	—
	9/22/2003	ENER	—	2.94	12.3	0.263	2.40	—	—	—	—
C7	4/28/2003	ENER	—	13.6	27.2	1.06	—	—	—	—	—
	9/22/2003	ENER	—	8.94	22.3	0.857	6.00	—	—	—	—
C8	4/28/2003	ENER	—	10.2	9.96	1.24	—	—	—	—	—
	9/22/2003	ENER	—	7.77	9.89	1.01	6.00	—	—	—	—
C9	4/28/2003	ENER	—	13.5	15.3	1.78	—	—	—	—	—
	9/22/2003	ENER	—	10.1	14.7	1.28	4.90	—	—	—	—
C10	4/28/2003	ENER	—	24.4	31.4	3.00	—	—	—	—	—
	9/22/2003	ENER	—	23.0	29.0	1.000	3.80	—	—	—	—
C11	4/28/2003	ENER	—	13.0	16.6	2.08	—	—	—	—	—

Signifies Quality Control Sample

TABLE B.4-2. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)	V (mg/l)	Th230 (pCi/l)
C11	9/22/2003	ENER	—	14.8	19.8	2.01	7.10	—	—	—	—
C12	4/28/2003	ENER	—	8.40	12.2	0.848	—	—	—	—	—
	9/22/2003	ENER	—	7.25	12.7	1.10	4.90	—	—	—	—
D1	6/24/2003	ENER	7.76	1.09	0.890	0.102	2.60	< 0.200	< 1.000	< 0.0100	0.300
DA3	7/17/2003	ENER	—	16.4	22.2	0.522	4.60	—	—	—	—
DA4	7/24/2003	ENER	—	45.4	55.2	1.32	2.80	—	—	—	—
DC	6/24/2003	ENER	—	0.0678	< 0.0300	0.0390	3.60	—	—	—	—
DD	6/3/2003	ENER	7.49	0.168	< 0.0300	0.0290	3.50	< 0.200	—	—	—
DQ	7/25/2003	ENER	—	9.78	24.4	1.58	5.50	—	—	—	—
DR	7/24/2003	ENER	—	40.5	52.0	1.27	0.800	—	—	—	—
DT	7/17/2003	ENER	—	17.0	18.8	0.680	7.70	—	—	—	—
DV	7/25/2003	ENER	—	37.3	28.0	0.957	13.0	—	—	—	—
F	7/15/2003	ENER	—	0.0801	< 0.0300	0.0110	2.40	—	—	—	—
FB	1/22/2003	ENER	—	0.0856	0.0400	0.158	—	—	—	—	—
	10/13/2003	ENER	—	0.111	< 0.0300	0.0420	2.60	—	—	—	—
	1/13/2004	ENER	—	0.122	0.0400	0.0510	—	—	—	—	—
GH	3/10/2003	ENER	—	0.0570	< 0.0300	0.0140	—	—	—	—	—
GV	1/8/2004	ENER	—	0.0288	< 0.0300	0.0120	2.03	—	—	—	—
I	6/25/2003	ENER	—	0.0825	< 0.0300	0.0220	1.90	—	—	—	—
K4	2/24/2003	ENER	—	2.68	7.15	1.03	—	—	—	—	—
	4/30/2003	ENER	—	2.73	7.19	0.994	—	—	—	—	—
	7/17/2003	ENER	—	1.92	5.43	0.737	1.50	—	—	—	—
	1/13/2004	ENER	—	1.14	3.68	0.533	—	—	—	—	—
K5	2/24/2003	ENER	—	0.651	8.21	0.126	—	—	—	—	—
	4/30/2003	ENER	—	0.636	7.00	0.116	—	—	—	—	—

TABLE B.4-2. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)	V (mg/l)	Th230 (pCi/l)
K5	7/17/2003	ENER	—	0.571	6.78	0.108	1.40	—	—	—	—
	11/17/2003	ENER	—	0.582	5.99	0.0840	—	—	—	—	—
	1/13/2004	ENER	—	0.576	5.80	0.0800	—	—	—	—	—
K7	2/24/2003	ENER	—	0.910	4.90	0.329	—	—	—	—	—
	4/30/2003	ENER	—	0.369	2.36	0.240	—	—	—	—	—
	7/17/2003	ENER	—	0.915	5.70	0.279	1.60	—	—	—	—
	11/17/2003	ENER	—	1.34	6.53	0.439	—	—	—	—	—
	1/13/2004	ENER	—	1.44	7.50	0.380	—	—	—	—	—
K8	2/24/2003	ENER	—	1.44	7.56	0.365	—	—	—	—	—
	7/17/2003	ENER	—	1.10	8.00	0.286	1.20	—	—	—	—
	11/17/2003	ENER	—	1.12	8.55	0.239	—	—	—	—	—
	1/13/2004	ENER	—	1.11	8.10	0.242	—	—	—	—	—
K9	2/24/2003	ENER	—	1.75	9.87	0.173	—	—	—	—	—
	4/30/2003	ENER	—	2.10	11.4	0.183	—	—	—	—	—
	7/17/2003	ENER	—	1.70	10.2	0.136	1.40	—	—	—	—
	11/17/2003	ENER	—	1.54	8.70	0.116	—	—	—	—	—
	1/13/2004	ENER	—	1.51	9.02	0.116	—	—	—	—	—
K10	2/24/2003	ENER	—	1.65	9.76	0.146	—	—	—	—	—
	4/30/2003	ENER	—	2.64	10.7	0.240	—	—	—	—	—
	11/17/2003	ENER	—	1.78	7.88	0.114	—	—	—	—	—
K11	2/24/2003	ENER	—	1.84	10.1	0.107	—	—	—	—	—
	2/24/2003	ENER	—	# 1.83	# 10.00	# 0.100	—	—	—	—	—
	4/30/2003	ENER	—	1.81	8.34	0.111	—	—	—	—	—
	7/17/2003	ENER	—	1.30	6.27	0.0900	1.30	—	—	—	—
	11/17/2003	ENER	—	1.54	6.08	0.0850	—	—	—	—	—
	1/13/2004	ENER	—	1.59	6.18	0.0830	—	—	—	—	—
KEB	3/20/2003	ENER	—	0.205	0.610	0.0230	—	—	—	—	—

Signifies Quality Control Sample

TABLE B.4-2. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)	V (mg/l)	Th230 (pCi/l)
KF	3/20/2003	ENER	—	0.0590	0.340	0.0100	—	—	—	—	—
KZ	3/20/2003	ENER	—	0.108	0.170	0.0070	—	—	—	—	—
L	11/18/2003	ENER	—	1.18	1.30	0.0530	2.00	—	—	—	—
L5	11/18/2003	ENER	—	0.401	1.56	0.356	1.40	—	—	—	—
L6	11/18/2003	ENER	—	0.375	1.04	0.144	0.800	—	—	—	—
	1/8/2004	ENER	—	0.287	0.920	0.156	0.890	—	—	—	—
L7	11/18/2003	ENER	—	0.490	1.49	0.295	1.40	—	—	—	—
L8	11/18/2003	ENER	—	0.393	1.14	0.160	1.60	—	—	—	—
L9	11/18/2003	ENER	—	0.397	1.38	0.0570	1.20	—	—	—	—
L10	11/18/2003	ENER	—	0.644	1.79	0.0250	1.10	—	—	—	—
M3	7/17/2003	ENER	—	6.55	7.56	0.244	3.60	—	—	—	—
M5	1/12/2004	ENER	—	1.32	1.70	0.0430	2.38	—	—	—	—
M9	12/8/2003	ENER	—	5.68	3.71	0.383	—	—	—	—	—
M10	12/8/2003	ENER	—	0.329	< 0.0300	0.0363	—	—	—	—	—
M11	12/8/2003	ENER	—	0.0616	< 0.0300	0.0720	—	—	—	—	—
MO	3/10/2003	ENER	—	0.408	< 0.0300	0.0680	—	—	—	—	—
	3/10/2003	ENER	—	# 0.389	# < 0.0300	# 0.0700	—	—	—	—	—
	10/13/2003	ENER	—	0.353	< 0.0300	0.0550	15.1	—	—	—	—
MQ	1/12/2004	ENER	—	2.61	0.970	0.341	7.65	—	—	—	—
MR	1/19/2004	ENER	—	0.530	0.0500	0.131	7.42	—	—	—	—
MS	1/19/2004	ENER	—	0.0582	< 0.0300	0.0480	2.12	—	—	—	—
MT	1/19/2004	ENER	—	0.133	< 0.0300	0.207	11.2	—	—	—	—
MU	1/15/2004	ENER	—	0.0974	< 0.0300	0.0580	23.7	—	—	—	—
MX	1/15/2004	ENER	—	0.0272	< 0.0300	0.0120	1.56	—	—	—	—

Signifies Quality Control Sample

TABLE B.4-2. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)	V (mg/l)	Th230 (pCi/l)
MY	1/15/2004	ENER	—	0.0188	< 0.0300	0.0140	0.170	—	—	—	—
MZ	12/8/2003	ENER	—	0.413	< 0.0300	0.0960	—	—	—	—	—
N	8/28/2003	ENER	—	0.230	0.0300	0.0980	13.6	—	—	—	—
NA	9/2/2003	ENER	—	24.0	62.2	0.150	2.70	—	—	—	—
NB	8/28/2003	ENER	—	63.3	100.0	0.476	10.7	—	—	—	—
NC	8/28/2003	ENER	—	0.0208	< 0.0300	0.0730	4.10	—	—	—	—
ND	5/22/2003	ENER	8.01	0.0303	< 0.0300	0.144	1.40	< 0.200	—	—	—
O	8/28/2003	ENER	—	0.0378	0.390	0.254	6.80	—	—	—	—
	1/15/2004	ENER	—	0.0307	—	0.245	—	—	—	—	—
P	7/15/2003	ENER	7.78	0.0270	< 0.0300	0.167	7.00	0.800	—	—	—
P2	4/23/2003	ENER	7.65	0.0386	< 0.0300	0.280	9.40	< 0.200	—	—	—
P4	4/23/2003	ENER	7.60	0.0913	< 0.0300	0.142	4.90	< 0.200	—	—	—
Q	5/15/2003	ENER	7.65	0.0532	< 0.0300	0.297	9.40	0.200	—	—	—
R	5/15/2003	ENER	7.76	0.0192	< 0.0300	0.579	15.0	0.200	—	—	—
S	1/12/2004	ENER	—	58.3	91.5	2.88	5.26	—	—	—	—
S2	1/21/2003	ENER	—	12.1	15.5	0.960	—	—	—	—	—
	7/15/2003	ENER	—	10.2	12.6	0.861	4.40	—	—	—	—
	1/13/2004	ENER	—	7.87	8.04	0.452	—	—	—	—	—
	1/13/2004	ENER	—	# 7.71	# 8.02	# 0.445	—	—	—	—	—
S3	1/12/2004	ENER	—	6.45	0.900	< 0.0050	1.95	—	—	—	—
S4	3/10/2003	ENER	—	2.02	0.300	0.0080	—	—	—	—	—
	7/15/2003	ENER	7.80	1.56	0.330	0.0070	< 0.100	0.600	< 1.000	< 0.0100	< 0.200
S5	7/17/2003	ENER	—	16.3	21.7	0.593	5.80	—	—	—	—
S6	7/23/2003	ENER	—	21.7	41.9	0.821	9.10	—	—	—	—

Signifies Quality Control Sample

TABLE B.4-2. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)	V (mg/l)	Th230 (pCi/l)
S7	7/23/2003	ENER	—	22.6	28.9	0.888	10.00	—	—	—	—
S11	1/12/2004	ENER	—	0.0851	0.120	0.692	32.2	—	—	—	—
SA	7/17/2003	ENER	—	7.37	8.60	0.194	4.00	—	—	—	—
SM	5/28/2003	ENER	—	47.2	86.1	2.92	13.8	—	—	—	—
SO	5/28/2003	ENER	—	22.4	18.8	1.84	27.3	—	—	—	—
SQ	7/24/2003	ENER	—	16.7	35.9	0.547	10.4	—	—	—	—
SS	7/17/2003	ENER	—	10.2	17.1	0.772	8.30	—	—	—	—
ST	7/17/2003	ENER	—	4.05	6.94	0.288	4.20	—	—	—	—
SUR	7/17/2003	ENER	—	8.58	11.5	0.295	4.50	—	—	—	—
SV	7/17/2003	ENER	—	23.2	43.7	1.32	8.90	—	—	—	—
SW	5/28/2003	ENER	—	29.7	85.7	2.55	5.90	—	—	—	—
T	3/20/2003	ENER	—	2.46	4.52	1.12	—	—	—	—	—
	7/24/2003	ENER	—	1.60	3.18	0.956	2.60	—	—	—	—
	9/22/2003	ENER	—	1.12	2.65	0.906	2.60	—	—	—	—
T2	1/22/2004	ENER	—	11.3	26.7	0.315	3.99	—	—	—	—
T4	1/22/2004	ENER	9.59	18.4	42.6	0.130	2.77	18.1	< 1.000	< 0.0100	< 0.200
T5	1/22/2004	ENER	9.46	28.9	42.2	0.783	2.60	9.30	< 1.000	0.140	< 0.200
T18	1/22/2004	ENER	8.14	18.5	20.6	0.532	6.61	5.80	< 1.000	0.0200	< 0.200
TA	7/24/2003	ENER	—	1.09	1.84	0.610	2.90	—	—	—	—
	9/22/2003	ENER	—	0.661	1.46	0.750	2.80	—	—	—	—
W	1/12/2004	ENER	—	0.0594	< 0.0300	0.0480	1.65	—	—	—	—
X	2/18/2003	ENER	—	0.0080	0.0800	< 0.0050	—	< 0.200	< 1.000	—	—
	4/21/2003	ENER	—	0.0407	0.0700	< 0.0050	—	—	—	—	—
	4/21/2003	ENER	—	# 0.0410	# 0.0700	# < 0.0050	—	—	—	—	—

Signifies Quality Control Sample

TABLE B.4-2. WATER QUALITY ANALYSES FOR HOMESTAKE'S 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)	V (mg/l)	Th230 (pCi/l)
X	7/15/2003	ENER	7.91	0.0166	0.130	0.0070	0.800	< 0.200	< 1.000	< 0.0100	< 0.200
	7/15/2003	ENER	# 7.89	# 0.0162	# 0.140	# 0.0060	# 0.800	# < 0.200	# < 1.000	# < 0.0100	# < 0.200
	10/9/2003	ENER	—	0.0277	0.140	< 0.0050	—	—	—	—	—
	10/9/2003	ENER	—	# 0.0268	# 0.140	# < 0.0050	—	—	—	—	—

Signifies Quality Control Sample

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.) (µmhos/cm)	Ion_B (ratio)
0410	8/26/2003	ENER	233	72.8	8.70	258	535	< 1.000	230	719	841	* 2382	0.960
0482	9/4/2003	ENER	226	65.7	7.10	274	539	< 1.000	204	751	1850	* 2465	0.951
	12/12/2003	ENER	—	—	—	—	—	—	208	671	1810	* 2556	—
0490	6/4/2003	ENER	226	65.1	6.10	272	540	< 1.000	200	695	1870	* 2525	0.987
	6/4/2003	ENER	# 223	# 64.0	# 6.10	# 273	# 540	# < 1.000	# 200	# 691	# 1800	—	# 0.983
0491	9/4/2003	ENER	—	—	—	—	—	—	212	730	1940	* 2582	—
	12/12/2003	ENER	—	—	—	—	—	—	217	751	1900	* 2644	—
0496	8/21/2003	ENER	—	—	—	—	—	—	203	736	1770	* 2343	—
0497	8/25/2003	ENER	—	—	—	—	—	—	215	851	2000	* 2648	—
0498	1/19/2004	ENER	199	51.0	7.00	298	447	< 1.000	181	730	1830	* 2418	0.986
0688	6/4/2003	ENER	240	52.2	5.80	265	517	< 1.000	187	702	1840	* 2305	0.984
0802	6/26/2003	ENER	—	—	—	—	—	—	201	659	1900	* 2548	—
0844	7/15/2003	ENER	—	—	—	—	—	—	225	1180	2560	* 3291	—
0845	1/13/2004	ENER	—	—	—	—	—	—	226	967	2170	* 2779	—
CW44	5/27/2003	ENER	—	—	—	—	—	—	195	780	1970	* 3441	—
	7/9/2003	ENER	237	65.0	5.70	334	533	< 1.000	197	777	1950	* 2590	1.04
SUB1	4/22/2003	ENER	—	—	—	—	—	—	—	837	2050	* 3523	—
	1/15/2004	ENER	—	—	—	—	—	—	182	868	2040	* 2666	—
SUB2	1/15/2004	ENER	—	—	—	—	—	—	205	708	1930	* 2492	—
SUB3	4/22/2003	ENER	—	—	—	—	—	—	—	1390	2680	* 4122	—
	1/15/2004	ENER	—	—	—	—	—	—	163	1490	2760	* 3330	—

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

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)	V (mg/l)	Th230 (pCi/l)
0410	8/26/2003	ENER	7.59	0.0438	< 0.0300	0.0120	2.50	< 0.200	< 1.000	< 0.0100	< 0.200
0482	9/4/2003	ENER	7.96	0.262	0.0800	0.0200	2.00	0.500	—	—	—
	12/12/2003	ENER	—	0.326	0.0800	0.0200	—	—	—	—	—
0490	6/4/2003	ENER	7.36	0.288	0.110	0.0320	2.00	< 0.200	< 1.000	< 0.0100	0.300
	6/4/2003	ENER	# 7.44	# 0.278	# 0.100	# 0.0320	# 2.00	# < 0.200	# 2.70	# < 0.0100	# 0.300
0491	9/4/2003	ENER	—	0.913	0.0700	0.0240	1.80	—	—	—	—
	12/12/2003	ENER	—	0.966	0.0900	0.0150	—	—	—	—	—
0496	8/21/2003	ENER	—	0.326	< 0.0300	0.0650	1.70	—	—	—	—
0497	8/25/2003	ENER	—	1.25	< 0.0300	0.0660	1.90	—	—	—	—
0498	1/19/2004	ENER	7.87	0.714	< 0.0300	0.0750	1.68	< 0.200	< 1.000	< 0.0100	< 0.200
0688	6/4/2003	ENER	7.54	0.0502	< 0.0300	0.0170	1.30	0.500	< 1.000	< 0.0100	0.300
0802	6/26/2003	ENER	—	0.924	< 0.0300	0.0390	1.50	—	—	—	—
0844	7/15/2003	ENER	—	0.0557	< 0.0300	0.0570	6.80	—	—	—	—
0845	1/13/2004	ENER	—	0.0604	< 0.0300	0.0360	8.05	—	—	—	—
CW44	5/27/2003	ENER	—	1.05	0.0400	0.0690	2.10	—	—	—	—
	7/9/2003	ENER	8.11	0.772	< 0.0300	0.0650	2.10	< 0.200	< 1.000	< 0.0100	< 0.200
SUB1	4/22/2003	ENER	—	0.216	< 0.0300	0.0210	—	—	—	—	—
	1/15/2004	ENER	—	0.148	< 0.0300	0.0260	3.34	—	—	—	—
SUB2	1/15/2004	ENER	—	0.0887	< 0.0300	0.0150	2.27	—	—	—	—
SUB3	4/22/2003	ENER	—	0.0348	< 0.0300	0.0150	—	—	—	—	—
	1/15/2004	ENER	—	0.0275	< 0.0300	0.0190	1.98	—	—	—	—

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)
0520	10/13/2003	ENER	—	—	—	—	—	—	209	811	1880	*2526	—
0521	10/13/2003	ENER	—	—	—	—	—	—	206	755	1820	*2477	—
0522	10/29/2003	ENER	—	—	—	—	—	—	181	627	1660	*2323	—
	1/12/2004	ENER	—	—	—	—	—	—	—	637	1650	*2330	—
0531	9/18/2003	ENER	—	—	—	—	—	—	170	802	1790	*2384	—
0538	1/19/2004	ENER	188	53.0	6.60	323	409	< 1.000	161	823	1890	*2473	0.984
0539	1/22/2004	ENER	150	35.0	6.30	326	301	< 1.000	136	775	1680	*2408	0.991
0540	1/20/2004	ENER	184	49.0	6.30	310	387	< 1.000	171	783	1820	*2400	0.977
0631	5/27/2003	ENER	—	—	—	—	—	—	98.7	488	1550	*2690	—
	9/18/2003	ENER	—	—	—	—	—	—	107	826	1570	*2077	—
0632	9/18/2003	ENER	—	—	—	—	—	—	142	891	1710	*2284	—
0634	1/5/2004	ENER	—	—	—	—	—	—	200	872	2000	—	—
0636	1/6/2004	ENER	—	—	—	—	—	—	156	441	1160	*1652	—
0637	1/6/2004	ENER	—	—	—	—	—	—	217	495	1360	*1950	—
0638	10/13/2003	ENER	—	—	—	—	—	—	327	1390	2720	*3463	—
0639	10/13/2003	ENER	—	—	—	—	—	—	171	669	1630	*2292	—
0640	1/7/2004	ENER	—	—	—	—	—	—	199	685	1730	*2378	—
0643	1/5/2004	HMC	—	—	—	—	—	—	—	—	—	2654	—
0644	1/7/2004	ENER	—	—	—	—	—	—	175	1000	1900	*2544	—
0646	1/7/2004	ENER	—	—	—	—	—	—	147	993	1790	*2364	—
0647	8/21/2003	ENER	—	—	—	—	—	—	104	645	1370	*18.0	—
0648	5/27/2003	ENER	—	—	—	—	—	—	59.4	516	1170	*2013	—
	8/21/2003	ENER	—	—	—	—	—	—	62.5	526	1120	*1541	—
0649	8/21/2003	ENER	—	—	—	—	—	—	49.7	477	1050	*1430	—

* 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)
0652	1/7/2004	ENER	—	—	—	—	—	—	63.6	623	1150	*1598	—
0653	5/27/2003	ENER	—	—	—	—	—	—	128	668	1560	*3315	—
	9/18/2003	ENER	—	—	—	—	—	—	196	871	1930	*2471	—
0654	1/5/2004	ENER	—	—	—	—	—	—	168	806	1840	*2425	—
0657	5/27/2003	ENER	—	—	—	—	—	—	179	839	1910	*2597	—
	9/18/2003	ENER	—	—	—	—	—	—	145	723	1590	*2098	—
0658	9/18/2003	ENER	—	—	—	—	—	—	63.0	617	1250	*1644	—
0659	1/5/2004	ENER	—	—	—	—	—	—	211	859	1990	*2617	—
0683	1/6/2004	ENER	—	—	—	—	—	—	61.2	190	606	*893	—
0684	1/6/2004	ENER	—	—	—	—	—	—	150	717	1540	*2070	—
0685	9/18/2003	ENER	—	—	—	—	—	—	164	795	1810	*2364	—
0686	1/6/2004	ENER	—	—	—	—	—	—	178	475	1250	*1800	—
0687	9/18/2003	ENER	—	—	—	—	—	—	128	657	1500	*2000	—
0689	1/7/2004	ENER	—	—	—	—	—	—	31.5	228	672	*1007	—
0692	1/7/2004	ENER	—	—	—	—	—	—	195	656	1570	*2200	—
0846	7/14/2003	ENER	—	—	—	—	—	—	168	1840	3250	*3825	—
0851	8/25/2003	ENER	—	—	—	—	—	—	63.7	1180	1910	*2122	—
0855	8/21/2003	ENER	—	—	—	—	—	—	131	878	1630	*1969	—
0861	8/25/2003	ENER	—	—	—	—	—	—	178	904	1800	*2433	—
0862	8/21/2003	ENER	—	—	—	—	—	—	212	855	1950	*2592	—
0864	8/25/2003	ENER	—	—	—	—	—	—	194	919	1890	*2549	—
0867	8/22/2003	ENER	—	—	—	—	—	—	145	508	1250	*1811	—
0869	8/21/2003	ENER	—	—	—	—	—	—	190	970	1930	*2571	—
0876	8/25/2003	ENER	—	—	—	—	—	—	186	963	1890	*2483	—

* 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)
0881	1/5/2004	ENER	—	—	—	—	—	—	207	856	2010	*2656	—
0882	1/5/2004	ENER	—	—	—	—	—	—	158	898	1760	*2292	—
0883	1/5/2004	ENER	—	—	—	—	—	—	201	980	2000	*2668	—
0884	1/5/2004	ENER	—	—	—	—	—	—	189	1250	2460	*3116	—
0885	1/5/2004	ENER	—	—	—	—	—	—	205	750	1820	*2454	—
0886	1/5/2004	ENER	—	—	—	—	—	—	210	1190	2440	*3086	—
0888	1/6/2004	ENER	—	—	—	—	—	—	203	1140	2400	*3036	—
0890	1/5/2004	ENER	—	—	—	—	—	—	199	839	1930	*2563	—
0893	1/5/2004	ENER	—	—	—	—	—	—	205	769	1800	*2421	—
0895	1/6/2004	ENER	—	—	—	—	—	—	163	841	1740	*2280	—
0896	1/6/2004	ENER	—	—	—	—	—	—	206	975	1890	*2442	—
0899	1/6/2004	ENER	—	—	—	—	—	—	87.2	445	1070	*1503	—
0905	5/14/2003	ENER	—	—	—	—	—	—	47.4	520	1120	*1736	—
0909	5/13/2003	ENER	—	—	—	—	—	—	—	678	1320	*2361	—
0910	5/14/2003	ENER	—	—	—	—	—	—	27.1	341	895	*1583	—
0914	5/15/2003	ENER	106	24.6	3.00	324	33.6	< 1.000	95.4	914	1460	*2634	0.963
0920	5/15/2003	ENER	455	87.4	9.60	232	233	< 1.000	62.7	1630	2700	*3797	1.02
	8/12/2003	ENER	—	—	—	—	—	—	78.2	1780	2720	*3030	—
0921	5/15/2003	ENER	398	76.4	8.70	319	234	< 1.000	71.5	1620	2710	*4004	1.02
0922	5/15/2003	ENER	2.50	< 1.000	1.40	379	377	19.9	77.4	404	1060	*2230	0.959
0935	9/18/2003	ENER	—	—	—	—	—	—	124	640	1490	*1973	—
0942	9/2/2003	ENER	—	—	—	—	—	—	135	889	1870	*2533	—
0947	1/7/2004	ENER	—	—	—	—	—	—	216	704	1790	*2443	—

* 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)
0950	5/15/2003	ENER	44.1	7.10	1.40	533	272	< 1.000	127	885	1750	*3286	0.981
0994	3/25/2003	ENER	—	—	—	—	—	—	—	163	496	*1012	—
	4/21/2003	ENER	—	—	—	—	—	—	—	167	511	*1004	—
	10/27/2003	ENER	—	—	—	—	—	—	25.2	200	618	*886	—
0996	9/18/2003	ENER	—	—	—	—	—	—	131	711	1560	*2035	—

* 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)	V (mg/l)	Th230 (pCi/l)
0520	10/13/2003	ENER	—	0.423	4.34	0.157	1.50	—	—	—	—
0521	10/13/2003	ENER	—	1.33	2.98	0.313	2.40	—	—	—	—
0522	10/29/2003	ENER	—	1.21	1.08	0.0710	2.10	—	—	—	—
	1/12/2004	ENER	—	1.41	—	0.0660	—	—	—	—	—
0531	9/18/2003	ENER	—	0.165	< 0.0300	0.0400	3.30	—	—	—	—
0538	1/19/2004	ENER	7.95	0.906	< 0.0300	0.129	2.34	< 0.200	< 1.000	< 0.0100	< 0.200
0539	1/22/2004	ENER	8.02	0.0838	< 0.0300	0.0790	3.27	0.800	< 1.000	< 0.0100	< 0.200
0540	1/20/2004	ENER	8.00	1.09	< 0.0300	0.129	1.82	0.400	< 1.000	< 0.0100	< 0.200
0631	5/27/2003	ENER	—	0.0313	0.650	0.178	2.20	—	—	—	—
	9/18/2003	ENER	—	0.0280	< 0.0300	0.207	2.20	—	—	—	—
0632	9/18/2003	ENER	—	0.0289	< 0.0300	0.281	2.70	—	—	—	—
0634	1/5/2004	ENER	—	0.223	< 0.0300	0.0520	3.54	—	—	—	—
0636	1/6/2004	ENER	—	0.0688	< 0.0300	0.0150	8.73	—	—	—	—
0637	1/6/2004	ENER	—	0.117	< 0.0300	0.0120	12.8	—	—	—	—
0638	10/13/2003	ENER	—	0.0342	0.0700	0.885	4.30	—	—	—	—
0639	10/13/2003	ENER	—	1.92	4.36	0.279	2.30	—	—	—	—
0640	1/7/2004	ENER	—	0.0274	< 0.0300	0.0210	1.99	—	—	—	—
0644	1/7/2004	ENER	—	0.0342	< 0.0300	0.226	3.74	—	—	—	—
0646	1/7/2004	ENER	—	0.0165	< 0.0300	0.297	3.06	—	—	—	—
0647	8/21/2003	ENER	—	0.0302	< 0.0300	0.0460	3.50	—	—	—	—
0648	5/27/2003	ENER	—	0.0243	0.210	0.0330	2.50	—	—	—	—
	8/21/2003	ENER	—	0.0165	< 0.0300	0.0220	2.40	—	—	—	—
0649	8/21/2003	ENER	—	0.0156	< 0.0300	0.0140	2.10	—	—	—	—
0652	1/7/2004	ENER	—	0.0247	< 0.0300	0.0190	0.810	—	—	—	—

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)	V (mg/l)	Th230 (pCi/l)
0653	5/27/2003	ENER	—	0.0677	0.0700	0.0490	3.30	—	—	—	—
	9/18/2003	ENER	—	0.950	< 0.0300	0.150	2.20	—	—	—	—
0654	1/5/2004	ENER	—	0.250	< 0.0300	0.0570	4.62	—	—	—	—
0657	5/27/2003	ENER	—	1.10	0.100	0.161	2.40	—	—	—	—
	9/18/2003	ENER	—	0.0530	< 0.0300	0.0440	3.00	—	—	—	—
0658	9/18/2003	ENER	—	0.0141	< 0.0300	0.0440	2.10	—	—	—	—
0659	1/5/2004	ENER	—	0.216	< 0.0300	0.0470	3.28	—	—	—	—
0683	1/6/2004	ENER	—	0.0033	< 0.0300	0.0120	3.26	—	—	—	—
0684	1/6/2004	ENER	—	0.0492	< 0.0300	0.0200	0.960	—	—	—	—
0685	9/18/2003	ENER	—	0.132	< 0.0300	0.0470	3.40	—	—	—	—
0686	1/6/2004	ENER	—	0.0608	< 0.0300	0.0150	10.4	—	—	—	—
0687	9/18/2003	ENER	—	0.106	< 0.0300	0.0490	6.70	—	—	—	—
0689	1/7/2004	ENER	—	0.0059	< 0.0300	< 0.0050	1.78	—	—	—	—
0692	1/7/2004	ENER	—	0.0495	< 0.0300	0.0100	1.51	—	—	—	—
0846	7/14/2003	ENER	—	0.0429	< 0.0300	0.0780	15.0	—	—	—	—
0851	8/25/2003	ENER	—	0.0582	< 0.0300	0.175	4.30	—	—	—	—
0855	8/21/2003	ENER	—	0.0383	< 0.0300	0.254	2.50	—	—	—	—
0861	8/25/2003	ENER	—	0.264	< 0.0300	0.226	2.20	—	—	—	—
0862	8/21/2003	ENER	—	0.732	< 0.0300	0.0700	2.40	—	—	—	—
0864	8/25/2003	ENER	—	0.481	< 0.0300	0.141	2.40	—	—	—	—
0867	8/22/2003	ENER	—	0.0286	< 0.0300	0.162	4.40	—	—	—	—
0869	8/21/2003	ENER	—	0.431	< 0.0300	0.226	2.60	—	—	—	—
0876	8/25/2003	ENER	—	0.420	< 0.0300	0.316	3.50	—	—	—	—
0881	1/5/2004	ENER	—	0.227	< 0.0300	0.0490	3.66	—	—	—	—

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)	V (mg/l)	Th230 (pCi/l)
0882	1/5/2004	ENER	—	0.0223	< 0.0300	< 0.0050	< 0.100	—	—	—	—
0883	1/5/2004	ENER	—	0.0280	< 0.0300	0.0470	3.64	—	—	—	—
0884	1/5/2004	ENER	—	0.474	< 0.0300	0.172	12.2	—	—	—	—
0885	1/5/2004	ENER	—	0.0700	< 0.0300	0.0200	1.67	—	—	—	—
0886	1/5/2004	ENER	—	0.542	0.0400	0.130	9.26	—	—	—	—
0888	1/6/2004	ENER	—	0.564	< 0.0300	0.121	7.60	—	—	—	—
0890	1/5/2004	ENER	—	0.161	< 0.0300	0.0420	2.90	—	—	—	—
0893	1/5/2004	ENER	—	0.0750	< 0.0300	0.0160	1.49	—	—	—	—
0895	1/6/2004	ENER	—	0.0934	< 0.0300	0.0690	6.43	—	—	—	—
0896	1/6/2004	ENER	—	0.0384	< 0.0300	0.0820	4.60	—	—	—	—
0899	1/6/2004	ENER	—	0.0749	< 0.0300	0.0240	5.00	—	—	—	—
0905	5/14/2003	ENER	—	0.0155	< 0.0300	0.0220	3.90	—	—	—	—
0909	5/13/2003	ENER	—	0.0250	—	0.102	—	—	—	—	—
0910	5/14/2003	ENER	—	0.0108	< 0.0300	0.0180	4.30	—	—	—	—
0914	5/15/2003	ENER	7.36	0.0012	< 0.0300	< 0.0050	< 0.100	< 0.200	—	—	—
0920	5/15/2003	ENER	7.71	0.189	< 0.0300	0.490	13.8	0.400	—	—	—
	8/12/2003	ENER	—	0.194	< 0.0300	0.421	13.3	—	—	—	—
0921	5/15/2003	ENER	7.73	0.220	< 0.0300	0.706	16.6	< 0.200	—	—	—
0922	5/15/2003	ENER	8.97	0.0082	0.0500	0.0060	< 0.100	< 0.200	—	—	—
0935	9/18/2003	ENER	—	0.126	< 0.0300	0.0480	6.00	—	—	—	—
0942	9/2/2003	ENER	—	0.0552	< 0.0300	0.0260	4.10	—	—	—	—
0947	1/7/2004	ENER	—	0.0679	< 0.0300	0.0090	1.45	—	—	—	—
0950	5/15/2003	ENER	7.92	0.137	< 0.0300	0.303	6.60	< 0.200	—	—	—

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)	V (mg/l)	Th230 (pCi/l)
0994	3/25/2003	ENER	—	0.0049	—	0.0070	2.10	—	—	—	—
	4/21/2003	ENER	—	0.0048	—	< 0.0050	2.50	—	—	—	—
	10/27/2003	ENER	—	0.0046	< 0.0300	< 0.0050	3.00	—	—	—	—
0996	9/18/2003	ENER	—	0.0430	< 0.0300	0.0550	4.80	—	—	—	—

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.) (µmhos/cm)	Ion_B (ratio)
0434	4/22/2003	ENER	—	—	—	—	—	—	—	668	1810	* 3039	—
0482	9/4/2003	ENER	226	65.7	7.10	274	539	< 1.000	204	751	1850	* 2465	0.951
	12/12/2003	ENER	—	—	—	—	—	—	208	671	1810	* 2556	—
0493	3/20/2003	ENER	—	—	—	—	—	—	—	737	1530	* 3002	—
	3/20/2003	ENER	—	—	—	—	—	—	—	# 739	# 1520	—	—
	6/4/2003	ENER	11.3	2.40	2.00	496	294	3.50	99.3	698	1510	* 2278	1.01
0494	6/4/2003	ENER	227	64.8	6.50	270	528	< 1.000	198	701	1860	* 2510	0.990
0498	1/19/2004	ENER	199	51.0	7.00	298	447	< 1.000	181	730	1830	* 2418	0.986
0538	1/19/2004	ENER	188	53.0	6.60	323	409	< 1.000	161	823	1890	* 2473	0.984
0539	1/22/2004	ENER	150	35.0	6.30	326	301	< 1.000	136	775	1680	* 2408	0.991
0653	5/27/2003	ENER	—	—	—	—	—	—	128	668	1560	* 3315	—
	9/18/2003	ENER	—	—	—	—	—	—	196	871	1930	* 2471	—
0853	7/17/2003	ENER	108	24.6	5.20	290	223	< 1.000	97.0	602	1370	* 1860	1.06
0859	7/10/2003	ENER	110	28.4	5.30	544	354	< 1.000	174	902	1980	* 2802	1.07
0909	5/13/2003	ENER	—	—	—	—	—	—	—	678	1320	* 2361	—
0929	4/28/2003	ENER	9.20	—	—	—	—	—	—	662	1760	* 3234	—
	7/7/2003	ENER	10.1	1.30	1.10	591	515	< 1.000	190	705	1840	* 2715	0.924
	8/21/2003	ENER	9.50	—	—	—	—	—	—	705	1810	* 2880	—
0930	7/8/2003	ENER	3.40	< 1.000	< 1.000	350	245	19.1	69.8	466	1090	* 1640	0.950
0934	4/28/2003	ENER	11.7	—	—	—	—	—	—	635	1880	* 3518	—
	7/7/2003	ENER	12.3	1.90	1.30	623	619	7.50	220	632	1930	* 2850	0.938
	8/21/2003	ENER	16.1	—	—	—	—	—	—	695	1910	* 2903	—
0945	7/7/2003	ENER	11.9	1.50	1.20	678	388	5.50	478	601	2060	* 3051	0.929
0962	7/16/2003	ENER	20.4	5.00	3.60	400	273	< 1.000	106	545	1260	* 1905	1.00
0994	3/25/2003	ENER	—	—	—	—	—	—	—	163	496	* 1012	—

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

TABLE B.5-1. WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS. (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)
0994	4/21/2003	ENER	—	—	—	—	—	—	—	167	511	* 1004	—
	10/27/2003	ENER	—	—	—	—	—	—	25.2	200	618	* 886	—
CE1	6/26/2003	ENER	58.5	17.7	7.70	287	487	< 1.000	71.2	341	1030	* 1525	0.996
CE2	4/28/2003	ENER	—	—	—	—	—	—	—	529	1450	* 2765	—
	6/26/2003	ENER	134	36.8	3.20	272	465	< 1.000	145	502	1410	* 2048	0.974
CE5	7/8/2003	ENER	212	58.5	4.10	282	469	< 1.000	190	771	1820	* 2445	0.953
CW1	4/23/2003	ENER	—	—	—	—	—	—	—	597	1320	* 2514	—
	7/10/2003	ENER	7.50	1.10	1.30	478	354	4.70	45.4	632	1350	* 2030	1.04
	8/11/2003	ENER	—	—	—	—	—	—	—	680	1240	* 1921	—
CW2	4/23/2003	ENER	—	—	—	—	—	—	—	410	1000	* 1948	—
	7/10/2003	ENER	5.40	< 1.000	< 1.000	367	312	7.50	49.6	430	1020	* 1554	1.04
	9/9/2003	ENER	—	—	—	—	—	—	—	464	1030	* 1583	—
	9/9/2003	ENER	—	—	—	—	—	—	—	# 466	# 1020	—	—
CW3	4/22/2003	ENER	—	—	—	—	—	—	—	932	1980	* 3478	—
	7/7/2003	ENER	127	33.9	3.30	499	426	< 1.000	144	1050	2130	* 2874	0.939
	8/11/2003	ENER	—	—	—	—	—	—	—	1140	2110	* 2876	—
CW4R	7/8/2003	ENER	197	56.1	3.70	258	434	< 1.000	178	706	1700	* 2293	0.959
CW9	7/8/2003	ENER	24.4	5.70	1.80	156	185	< 1.000	35.0	249	605	* 908	0.922
CW15	7/14/2003	ENER	64.0	19.0	2.60	478	250	< 1.000	52.8	941	1710	* 2360	1.02
CW17	7/10/2003	ENER	390	100.0	6.80	388	335	< 1.000	80.2	1680	3040	* 3504	1.05
CW18	4/28/2003	ENER	—	—	—	—	—	—	—	655	1880	* 3536	—
	7/7/2003	ENER	48.9	9.50	2.90	574	625	< 1.000	212	702	1930	* 2815	0.916
	8/21/2003	ENER	52.9	—	—	—	—	—	—	703	2050	* 2380	—
CW24	7/10/2003	ENER	407	110	6.70	370	354	< 1.000	79.7	1740	3160	* 3515	1.03
CW26	7/16/2003	ENER	134	29.9	6.30	330	215	< 1.000	161	755	1580	* 2190	0.994

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

TABLE B.5-1. WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS. (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)
CW27	7/16/2003	ENER	150	32.8	6.70	307	193	< 1.000	160	766	1620	* 2163	1.00
CW28	4/28/2003	ENER	—	—	—	—	—	—	—	407	1060	* 2096	—
	7/7/2003	ENER	5.40	< 1.000	1.20	353	292	4.90	97.4	427	1090	* 1665	0.949
	8/21/2003	ENER	—	—	—	—	—	—	—	436	1780	* 1638	—
CW29	7/10/2003	ENER	103	28.4	4.50	300	232	< 1.000	79.5	612	1260	* 1828	1.10
CW30	7/9/2003	ENER	67.2	17.2	3.50	614	370	< 1.000	159	981	2090	* 2998	1.02
CW31	7/21/2003	ENER	122	36.2	5.50	325	206	0	54.2	901	1600	* 2106	0.988
CW32	7/21/2003	ENER	255	95.8	10.3	901	490	< 1.000	679	1810	4090	* 5470	0.925
CW33	7/21/2003	ENER	102	29.0	9.90	1150	260	< 1.000	367	2060	3990	* 4326	1.00
CW35	7/10/2003	ENER	321	84.9	5.60	348	370	< 1.000	101	1230	2370	* 2843	1.11
CW36	7/17/2003	ENER	92.4	31.3	7.90	450	273	< 1.000	54.8	1030	1820	* 2473	0.981
CW37	7/14/2003	ENER	183	74.0	6.00	339	273	< 1.000	82.4	1020	1920	* 2492	1.07
CW39	7/14/2003	ENER	166	67.1	6.40	300	297	< 1.000	67.6	891	1670	* 2150	1.07
CW40	7/7/2003	ENER	28.6	3.90	2.00	624	652	< 1.000	214	676	1990	* 2900	0.939
CW41	7/14/2003	ENER	13.2	3.30	2.40	334	401	5.30	110	254	967	* 1545	1.03
CW42	7/17/2003	ENER	201	51.9	6.90	339	348	< 1.000	176	898	1930	* 2533	0.994
CW43	7/17/2003	ENER	128	35.2	3.80	242	373	< 1.000	56.8	585	1290	* 1773	0.999
CW44	5/27/2003	ENER	—	—	—	—	—	—	195	780	1970	* 3441	—
	7/9/2003	ENER	237	65.0	5.70	334	533	< 1.000	197	777	1950	* 2590	1.04
CW45	7/16/2003	ENER	184	49.1	5.30	314	465	< 1.000	175	707	1740	* 2383	0.989
CW46	7/16/2003	ENER	181	43.1	6.20	266	278	< 1.000	176	720	1610	* 2183	0.990
CW50	5/29/2003	ENER	223	57.8	4.70	290	351	< 1.000	83.0	934	1820	* 2338	1.04
	7/1/2003	ENER	203	55.8	4.10	258	343	< 1.000	89.8	855	1790	* 2325	1.00
	8/14/2003	ENER	210	57.4	4.20	261	340	< 1.000	117	944	1760	* 2289	0.934

* Signifies Specific Conductivity from HMC

TABLE B.5-1. WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS. (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)
CW52	6/11/2003	ENER	180	39.9	6.30	509	545	< 1.000	86.0	1050	2460	*2955	1.04
	7/1/2003	ENER	65.8	11.7	3.10	590	845	< 1.000	80.0	651	2230	*2754	1.01
	8/14/2003	ENER	44.5	7.40	2.40	509	893	< 1.000	110	396	1780	*2329	0.962
WCW	7/17/2003	ENER	16.1	4.00	2.70	648	321	4.60	118	1020	1980	*2840	0.980
WR25	7/10/2003	ENER	561	135	8.50	355	381	< 1.000	111	1950	3660	*3991	1.09

* 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)	V (mg/l)	Th230 (pCi/l)
0434	4/22/2003	ENER	—	0.219	0.100	0.0400	—	—	—	—	—
0482	9/4/2003	ENER	7.96	0.282	0.0800	0.0200	2.00	0.500	—	—	—
	12/12/2003	ENER	—	0.326	0.0800	0.0200	—	—	—	—	—
0493	3/20/2003	ENER	—	0.108	< 0.0300	0.229	—	—	—	—	—
	3/20/2003	ENER	—	# 0.106	# < 0.0300	# 0.216	—	—	—	—	—
	6/4/2003	ENER	8.32	0.0929	< 0.0300	0.222	1.80	< 0.200	< 1.000	< 0.0100	0.300
0494	6/4/2003	ENER	7.96	0.245	0.0700	0.0250	1.80	< 0.200	< 1.000	< 0.0100	0.300
0498	1/19/2004	ENER	7.87	0.714	< 0.0300	0.0750	1.68	< 0.200	< 1.000	< 0.0100	< 0.200
0538	1/19/2004	ENER	7.95	0.906	< 0.0300	0.129	2.34	< 0.200	< 1.000	< 0.0100	< 0.200
0539	1/22/2004	ENER	8.02	0.0838	< 0.0300	0.0790	3.27	0.800	< 1.000	< 0.0100	< 0.200
0653	5/27/2003	ENER	—	0.0677	0.0700	0.0490	3.30	—	—	—	—
	9/18/2003	ENER	—	0.950	< 0.0300	0.150	2.20	—	—	—	—
0853	7/17/2003	ENER	8.06	0.0254	< 0.0300	0.139	2.30	< 0.200	< 1.000	< 0.0100	< 0.200
0859	7/10/2003	ENER	7.98	0.114	< 0.0300	0.119	3.70	< 0.200	< 1.000	< 0.0100	< 0.200
0909	5/13/2003	ENER	—	0.0250	—	0.102	—	—	—	—	—
0929	4/28/2003	ENER	—	0.0313	< 0.0300	0.0120	—	—	—	—	—
	7/7/2003	ENER	8.27	0.0261	< 0.0300	0.0300	0.900	< 0.200	< 1.000	< 0.0100	0.400
	8/21/2003	ENER	—	0.0282	< 0.0300	0.0100	—	—	—	—	—
0930	7/8/2003	ENER	9.14	0.0107	< 0.0300	0.0500	< 0.100	< 0.200	< 1.000	< 0.0100	0.300
0934	4/28/2003	ENER	—	0.0931	0.100	0.0170	—	—	—	—	—
	7/7/2003	ENER	8.33	0.0745	< 0.0300	0.0200	1.70	< 0.200	< 1.000	< 0.0100	0.300
	8/21/2003	ENER	—	0.115	0.0500	0.0130	—	—	—	—	—
0945	7/7/2003	ENER	8.40	0.0363	0.0400	0.0710	0.300	< 0.200	< 1.000	< 0.0100	0.300
0962	7/16/2003	ENER	8.23	0.0251	< 0.0300	0.151	2.00	< 0.200	< 1.000	< 0.0100	< 0.200
0994	3/25/2003	ENER	—	0.0049	—	0.0070	2.10	—	—	—	—

Signifies Quality Control Sample

TABLE B.5-2. WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS. (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)	V (mg/l)	Th230 (pCi/l)
0994	4/21/2003	ENER	—	0.0048	—	< 0.0050	2.50	—	—	—	—
	10/27/2003	ENER	—	0.0046	< 0.0300	< 0.0050	3.00	—	—	—	—
CE1	6/26/2003	ENER	8.23	2.27	1.37	0.0300	< 0.100	0.700	2.00	< 0.0100	0.300
CE2	4/28/2003	ENER	—	0.961	0.630	0.0590	—	—	—	—	—
	6/26/2003	ENER	7.93	0.653	0.480	0.0600	2.20	< 0.200	< 1.000	< 0.0100	0.400
CE5	7/8/2003	ENER	7.71	0.906	0.280	0.188	1.70	< 0.200	< 1.000	< 0.0100	0.400
CW1	4/23/2003	ENER	—	0.0619	< 0.0300	0.0220	—	—	—	—	—
	7/10/2003	ENER	8.37	0.0480	< 0.0300	0.0290	0.700	< 0.200	< 1.000	< 0.0100	< 0.200
	8/11/2003	ENER	—	0.0395	< 0.0300	0.0210	—	—	—	—	—
CW2	4/23/2003	ENER	—	0.0339	< 0.0300	0.0180	—	—	—	—	—
	7/10/2003	ENER	8.63	0.0163	< 0.0300	0.0220	0.300	< 0.200	< 1.000	< 0.0100	< 0.200
	9/9/2003	ENER	—	0.0321	0.0600	0.0270	—	—	—	—	—
	9/9/2003	ENER	—	# 0.0333	# 0.0600	# 0.0270	—	—	—	—	—
CW3	4/22/2003	ENER	—	1.74	1.54	0.0370	—	—	—	—	—
	7/7/2003	ENER	8.08	2.11	1.66	0.0350	0.200	< 0.200	< 1.000	0.0300	< 0.200
	8/11/2003	ENER	—	2.11	1.66	0.0690	—	—	—	—	—
CW4R	7/8/2003	ENER	7.83	0.780	0.250	0.125	1.80	< 0.200	< 1.000	< 0.0100	< 0.200
CW9	7/8/2003	ENER	8.08	0.0122	< 0.0300	0.0110	< 0.100	0.500	< 1.000	< 0.0100	0.300
CW15	7/14/2003	ENER	8.13	0.0155	< 0.0300	0.0390	3.90	< 0.200	< 1.000	< 0.0100	< 0.200
CW17	7/10/2003	ENER	7.74	0.114	< 0.0300	0.0780	10.3	< 0.200	< 1.000	< 0.0100	< 0.200
CW18	4/28/2003	ENER	—	0.0416	< 0.0300	0.0200	—	—	—	—	—
	7/7/2003	ENER	7.89	0.0424	< 0.0300	0.0210	1.70	< 0.200	< 1.000	< 0.0100	0.300
	8/21/2003	ENER	—	0.0404	< 0.0300	0.0090	—	—	—	—	—
CW24	7/10/2003	ENER	7.88	0.122	< 0.0300	0.0400	10.1	1.10	< 1.000	< 0.0100	< 0.200
CW26	7/16/2003	ENER	7.80	0.0242	< 0.0300	0.215	2.10	< 0.200	< 1.000	< 0.0100	< 0.200

Signifies Quality Control Sample

TABLE B.5-2. WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS. (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)	V (mg/l)	Th230 (pCi/l)
CW27	7/16/2003	ENER	7.88	0.0222	< 0.0300	0.246	2.50	< 0.200	< 1.000	< 0.0100	< 0.200
CW28	4/28/2003	ENER	—	0.0172	< 0.0300	0.0920	—	—	—	—	—
	7/7/2003	ENER	8.47	0.0144	< 0.0300	0.135	1.60	< 0.200	< 1.000	< 0.0100	< 0.200
	8/21/2003	ENER	—	0.0163	< 0.0300	0.0790	—	—	—	—	—
CW29	7/10/2003	ENER	8.16	0.0532	< 0.0300	0.155	1.80	< 0.200	< 1.000	< 0.0100	< 0.200
CW30	7/9/2003	ENER	8.27	0.274	< 0.0300	0.157	6.40	< 0.200	< 1.000	< 0.0100	< 0.200
CW31	7/21/2003	ENER	8.02	0.0131	< 0.0300	< 0.0050	< 0.100	< 0.200	< 1.000	< 0.0100	< 0.200
CW32	7/21/2003	ENER	7.83	0.0020	< 0.0300	0.0120	< 0.100	1.80	< 1.000	< 0.0100	< 0.200
CW33	7/21/2003	ENER	7.89	0.0148	< 0.0300	0.0080	< 0.100	< 0.200	< 1.000	< 0.0100	0.300
CW35	7/10/2003	ENER	7.74	0.162	< 0.0300	0.0530	5.90	0.700	< 1.000	< 0.0100	< 0.200
CW36	7/17/2003	ENER	7.96	0.0028	< 0.0300	< 0.0050	< 0.100	< 0.200	< 1.000	< 0.0100	< 0.200
CW37	7/14/2003	ENER	8.01	0.0242	< 0.0300	0.0750	6.20	0.300	3.20	< 0.0100	< 0.200
CW39	7/14/2003	ENER	8.02	0.0262	< 0.0300	0.0490	4.50	< 0.200	< 1.000	< 0.0100	< 0.200
CW40	7/7/2003	ENER	8.17	0.0302	< 0.0300	0.0170	1.60	< 0.200	< 1.000	< 0.0100	0.300
CW41	7/14/2003	ENER	8.37	0.0483	< 0.0300	0.0150	7.30	< 0.200	1.60	< 0.0100	0.300
CW42	7/17/2003	ENER	7.89	0.985	< 0.0300	0.247	2.50	< 0.200	< 1.000	< 0.0100	< 0.200
CW43	7/17/2003	ENER	7.99	0.0330	< 0.0300	0.0250	3.10	< 0.200	< 1.000	< 0.0100	< 0.200
CW44	5/27/2003	ENER	—	1.05	0.0400	0.0690	2.10	—	—	—	—
	7/9/2003	ENER	8.11	0.772	< 0.0300	0.0650	2.10	< 0.200	< 1.000	< 0.0100	< 0.200
CW45	7/16/2003	ENER	8.07	1.52	< 0.0300	0.0720	1.10	< 0.200	< 1.000	< 0.0100	< 0.200
CW46	7/16/2003	ENER	8.04	0.0428	< 0.0300	0.135	1.80	0.300	< 1.000	< 0.0100	< 0.200
CW50	5/29/2003	ENER	7.71	0.0417	< 0.0300	< 0.0050	< 0.100	0.600	2.20	< 0.0100	0.300
	7/1/2003	ENER	7.98	0.0424	< 0.0300	0.0070	< 0.100	0.400	< 1.000	< 0.0100	0.300
	8/14/2003	ENER	7.91	0.0375	< 0.0300	< 0.0050	< 0.100	0.400	< 1.000	< 0.0100	0.500

TABLE B.5-2. WATER QUALITY ANALYSES FOR THE CHINLE AQUIFERS. (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)	V (mg/l)	Th230 (pCi/l)
CW52	6/11/2003	ENER	7.62	0.0412	< 0.0300	0.0170	0.800	0.700	< 1.000	< 0.0100	0.300
	7/1/2003	ENER	7.80	0.0098	< 0.0300	0.0280	< 0.100	0.700	< 1.000	< 0.0100	0.300
	8/14/2003	ENER	8.38	0.0092	< 0.0300	0.0110	< 0.100	0.700	4.00	< 0.0100	0.500
WCW	7/17/2003	ENER	8.41	0.0180	< 0.0300	< 0.0050	< 0.100	< 0.200	1.90	< 0.0100	< 0.200
WR25	7/10/2003	ENER	7.97	0.201	< 0.0300	0.0700	15.0	0.300	< 1.000	< 0.0100	< 0.200

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.) (µmhos/cm)	Ion_B (ratio)
#1 Deepwell	5/13/2003	ENER	232	78.5	12.5	281	—	—	228	713	1800	* 2898	—
#2 Deepwell	5/13/2003	ENER	234	76.3	12.0	239	—	—	198	646	1770	* 2628	—
	5/13/2003	ENER	# 234	# 76.6	# 12.0	# 239	—	—	# 199	# 691	# 1770	—	—
0806	10/27/2003	ENER	—	—	—	—	—	—	—	589	1570	* 2120	—
0943	10/27/2003	ENER	—	—	—	—	—	—	—	1090	2030	* 2899	—
0951	10/27/2003	ENER	—	—	—	—	—	—	—	342	942	* 1305	—

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)	V (mg/l)	Th230 (pCi/l)
#1 Deepwell	5/13/2003	ENER	7.87	0.0100	< 0.0300	0.0070	0.500	1.40	—	—	—
#2 Deepwell	5/13/2003	ENER	7.86	0.0113	< 0.0300	0.0130	2.30	0.200	—	—	—
	5/13/2003	ENER	# 4.89	# 0.0120	# < 0.0300	# 0.0090	# 2.50	# < 0.200	—	—	—
0806	10/27/2003	ENER	—	0.0152	—	< 0.0050	—	—	—	—	—
0943	10/27/2003	ENER	—	0.0005	—	< 0.0050	—	—	—	—	—
0951	10/27/2003	ENER	—	0.0314	—	< 0.0050	—	—	—	—	—

Signifies Quality Control Sample

APPENDIX C

ANNUAL ALARA AUDIT

Annual ALARA Audit

November 4, 2003

Grants Operations
Homestake Mining Company
P. O. Box 98
Grants, New Mexico 87020

Prepared by:

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1.0 Introduction

On November 4, 2003, Nels R. Johnson, consultant to Homestake Mining Company (HMC), conducted the 2003 Annual ALARA Audit for the Grants Uranium Mill site. The audit was conducted in accordance with the United States Nuclear Regulatory Commission (NRC) Regulatory Guide 8.31, "Information Relevant to Ensuring That A Occupational Exposure At Uranium Mills Will Be As Low As Reasonably Achievable." Other applicable references included USNRC Materials License Number SUA-1471 issued to Homestake Mining Company, and USNRC Regulatory Guides 8.10, 8.22, and 8.30. A checklist was prepared prior to the audit based upon these references to guide the direction of the audit.

The following topics were covered in the audit:

Follow up on prior ALARA audit
ALARA policy
Radiation exposures
Bioassay results
Environmental monitoring
Self audits
ALARA planning activities
Worker training
Radiation safety meetings
Radiation surveys
Overexposures
Health physics staff
Procedures, Data Collection, and Management

All mill buildings have been removed and the off-pile tailings cleanup was completed in 1995. The side slopes of the main tailings pile and the mill yard area have a permanent radon barrier and an erosion protection cover. An interim cover is being maintained on the top of the large tailings pile and that portion of the small tailings pile that is not covered by the evaporation pond.

Activities at the site during 2003 include the operation of a reverse osmosis (RO) unit that supports the groundwater restoration program, dewatering the large tailings pile, and maintaining the groundwater restoration system. The groundwater restoration consists of pumping the groundwater collection wells, operating the evaporation ponds, injecting clean water into the contaminated aquifer, and operating the RO plant.
The primary potential radiation exposure results from maintaining the pumps, valves, and piping associated with the tailings dewatering and groundwater collection systems, operating the RO plant, drilling new wells on the tailings pile, and maintaining the spray system on the evaporation ponds.

2. Discussion

The audit process involved scoping the audit, gathering relevant information, review of information, interviewing appropriate personnel, and writing the report. The reviews are briefly summarized below.

2.1 Follow-up on Previous Audit Recommendations

The last ALARA audit was conducted on October 28, 2002. A recommendation was made at that time to document low airborne particulate concentrations by taking periodic air samples whenever an RWP is required, specifically while performing invasive work on top of the pile. This recommendation is still open since no invasive work was performed on the pile in 2003, therefore no RWP's were issued, and no air particulate data was collected.

Another recommendation made during this audit was to have HMC obtain a uranium solution to spike a urine sample with each batch of samples submitted for bioassay analysis. HMC now sends a spiked urine sample with each shipment and therefore this recommendation is considered closed.

It was also recommended that shorter- term radon measurements be collected from the RO building along with documenting employee exposure times. This data was collected in 2003, and this recommendation is considered closed. Lastly, it was suggested that a program to conduct periodic clean area surveys be considered. This program has not been initiated, and is still considered open.

2.2 ALARA Policy

The corporate ALARA policy statement is included in Standard Operating Procedure HP-6, revised October 14, 2003. This policy statement commits management and personnel to be continually vigilant for means to reduce exposures. This policy has been implemented as evidenced by discussions with HMC management and staff, and by the incorporation of ALARA principles in worker training and preparation of prior-year radiation work permits.

2.3 Radiation Exposures

2.3.1 External Exposures

Dosimetry data for the fourth quarter 2002 and first three quarters 2003 were reviewed. Approximately 10 to 20 OSL badges were issued each quarter, with a minimum reportable dose equivalent of 1 mrem.. The maximum deep dose equivalent for the fourth quarter of 2002 was reported as 6 mrem. The maximum deep dose equivalents for the first three quarters of 2003 were 10, 2, and 8 mrem, respectively. The maximum year-to-date dose equivalent for CY 2003 was reported as 18 mrem. All shallow and eye dose equivalents were similar to the deep doses. One dosimeter was assigned as an area monitor in the RO building. The cumulative dose equivalent for CY 2003 for this location was reported as less than 1 mrem.

Dosimeters are also emplaced at each of the perimeter hi-volume air particulate sampling stations. These OSL dosimeters are exchanged semi-annually. A review of the reported results indicated exposure rates of about 3 mrem per month above background.

These low exposures reflect the effort that management and the workers have expended in maintaining exposures ALARA as well as the low radiation work environment.

2.3.2 Internal Exposures from Long-Lived Particulate Sources

HMC does not routinely require airborne particulate monitoring since there are no dry exposed tailings. Invasive activities normally involve the use of water to suppress any dust that may be generated. However, no invasive work was performed on the tailings pile during CY-2003, and consequently no RWP's were implemented.

HMC has a "spot check program" where the most exposed individual working under an RWP will be monitored for a day, normally one per month. Even though no RWP's were issued in CY-2003, "spot checks" were performed in May, June, September, and October. No personal air sampler data was collected during these "spot checks".
As a result, no air particulate data has been collected from the top of the tailings pile during CY-2003.

Recommendation: During previous annual ALARA audits, the recommendation was made to document low airborne particulate concentrations by taking samples while working on top the pile. This recommendation is still open, and is again suggested even when invasive work is not performed. As an alternative, a high- or medium- volume AC powered air particulate sampling station could be placed on top of the pile. The filter should be exchanged weekly, composited on a quarterly basis, and analyzed for U-238, Th-230, and Ra-226. This data would document the air particulate exposures to workers as they perform both invasive and routine maintenance on top of the pile.

2.3.3 Internal Exposure from Radon

The radon concentrations at seven locations on the site perimeter near the tailings pile are monitored by a semi-annual exchange of track-etch detectors. Results for the past 12 months ranged from 0.9 to 2.4 pCi/l, which are indicative of near-background levels.

However, the RO building presents a source of concern for radon exposure. Water from production wells is exposed to the atmosphere in the RO building and dissolved radon will emanate into the building atmosphere. Ventilation fans in the building are operated twice daily prior to shift entry to exhaust this radiation source, and an additional exhaust fan was added to the building sump in 2003 to reduce radon concentrations further. To monitor this radiation source, a track-etch detector is placed in the RO building and changed out every six months. The average radon concentrations in the building for the last half of the 2002 year was 10.5 pCi/l, and was 9.1 pCi/l during the first half of 2003. These concentrations are significantly less than that measured during the first half of 2002 at 21 pCi/l and at 47 pCi/l in 2001. This reduction in concentration is likely due to the aforementioned increased ventilation in the RO building.

To monitor the variation in radon concentration in the RO building, HMC initiated a study using an additional monthly exchange track-etch detector. Results from January to September, 2003 ranged from a low of 6.1 pCi/l in February to a high of 14.4 pCi/l in June. The average concentration during this time period was 9.7 pCi/l. HMC also initiated the practice of recording the exposure times employees are in the RO building. At the end of this one year study, HMC will evaluate the monthly data to determine if a monthly, quarterly, or semi-annual exchange of track-etch detectors is preferable.

Recommendation: Radon concentrations in the RO building are significantly reduced from the levels present a few years ago. This reduction is indicative of a good ALARA program. Also, plant workers are present in the RO building only a few hours each week. However, current radon concentrations are still about 30% of the allowable DAC in 10CFR20, assuming the radon daughters are in equilibrium. Working level (WL) measurements have been collected previously from the RO building, and no significant concentrations were detected. However, no WL measurements were made in 2003. It is recommended that approximately six WL measurements be collected from various locations throughout the RO building to document that radon daughter concentrations are not in equilibrium with the radon, and therefore the inhalation exposure to plant workers is negligible. Since the radon source term does not seem to vary significantly, this study need only be conducted annually.

2.4 Bioassay Results

Procedures call for a semi-annual routine urine-sampling schedule for HMC employees. Contractor employees are sampled at the beginning and end of short-term projects. From October, 2002 to October 2003, 12 shipments of bioassay samples were sent to an offsite laboratory for total uranium analysis. These 12 shipments contained 89 individual samples, including a blank and spike with each shipment. The vendor laboratory is required to have a lower limit of detection (LLD) of 5 µg/l for uranium. Any measured value of 15 µg/l must be investigated and appropriate mitigation measures taken. Persons with urine samples exceeding 35 µg/l must be placed on work restrictions to limit further intakes of uranium.

To date, analytical results for 79 of these samples have been received from the laboratory. All results were below the LLD of 5 µg/l of uranium, except for the spikes. HMC obtained a uranium solution from the vendor laboratory and spikes one blank urine sample in each shipment with either 15 or 30 pCi/l. The laboratory estimates for all spiked samples were within 30% of the known amount, which is the allowable tolerance. The results for the bioassay program support the conclusion that the worker uptake of uranium is low.

2.5 Self Audits

The RPA requires that the technicians (Venable/Vigil) prepare a monthly ALARA report. The report consists of radiation protection data reflective of the operations as well as an accounting of the major activities for the month. Any problems encountered are also

presented. After reviewing several of the reports, the auditor concluded that the reports provide the RPA with adequate detail to assure that exposures are being maintained ALARA.

2.6 ALARA Planning Activities

HMC conducts all invasive work (involving tailings) under a radiation work permit (RWP). Since no invasive work was performed during 2003, no RWP's were issued. If invasive work had been performed, requirements in the RWP would have been explained to the workers. When contract laborers are used, spot checks are conducted to assure that the requirements are appropriate and being followed. These spot checks include frisking working personnel and equipment to determine the levels of contamination, performing exposure rate measurements in the work area, and possibly taking air samples

2.7 Worker Training

All radiation workers receive formal classroom radiation safety training. Workers must pass a written examination. Annual refresher training is required and generally is a repeat of the course material given initially. Kenneth Baker conducted the last annual training on October 29, 2002. Training for 2003 will be scheduled prior to the end of the calendar year. The Radiation Protection Administrator (RPA) or Adrian Venable normally gives the contractor training. Use of videotapes developed for HMC by a consultant is incorporated into the contractor employee training.

2.8 Radiation Surveys

A review of the instrument maintenance and calibration records was made. All instruments in use had been calibrated. A calibration schedule is prepared for use in tracking calibrations. The records were found in good order. The radioactive source locker was also inspected. Sources appeared to be clean and the locker was secured with a padlock. However, leak tests of the sources are not routinely performed. While not an NRC requirement, it is the auditor's recommendation that routinely used sources be swiped annually to monitor for transferable activity.

Recommendation: It was recommended that HMC perform an annual leak-check on sources used to response check the radiation detection instruments. This could be done in house by current HMC staff.

Clean area surveys are no longer required per license condition. While no surveys were conducted in CY2003 (to date), plans are to conduct these surveys periodically. Prior year data show that the contamination is at near background levels.

HMC is committed to assuring that adequate clean cover exists on top of the large impoundment to control the tailings, and to reduce exposure rates to workers. An annual gamma survey is conducted over the top of the pile to detect any anomalies in exposure rate which might be indicative of tailings material at or near the surface of the cover. During 2003, this gamma survey was conducted by driving on the top of the pile along lanes spaced about 30 feet apart. Using a microR meter, the driver recorded gamma

readings periodically, and leaving the instrument on between measurement points, listened for areas of elevated activity. Most of the top of the pile had exposure rate readings in the 10 to 30 μR/h range. However, the exposure rate in one small area was 600μR/h, another was 330μR/h, and three areas read between 100 and 200 μR/h. While these areas are physically small and the exposure rates observed do not require posting, these areas are well above background. HMC has staged clean soil on top the pile to cover these areas of elevated exposure rate, and is committed to accomplishing this task in the near future.

Recommendation: Since the exposure rate on top of the pile can vary significantly by location, and perhaps by time, it is recommended that whenever work is done on top of the pile, a gamma survey instrument be used to survey the general area to monitor for elevated readings which might be indicative of tailings material at or near the surface. Exposed tailings have the potential to increase the direct or external dose to workers, and to increase the potential for internal exposures from air particulates. Elevated areas so identified could then be scheduled for cover with additional clean soil.

2.9 Health Physics Staff

The current health physics staff consists of:

Alan D. Cox, Radiation Protection Administrator
Adrian Venable, Senior Health Physics Technician
Joe Vigil, Site Supervisor and Senior Environmental Technician

A review of the education and experience of the staff indicated that all meet or exceed the requirements of NRC Regulatory Guide 8.31 for working in uranium mills. The staff members stated that they had adequate time and materials to perform their respective radiation safety responsibilities.

2.10 Overexposures

No personnel were overexposed to date during this audit period.

2.11 Procedures, Data Collection, and Management

The HMC Environmental Procedures Manual was reviewed, specifically EM-1 through – EM-4, and HP-1 through HP-16. All procedures appeared current as evidenced by recent signature approval by the RPA to revisions to many of these procedures. No procedures are currently under revision or preparation. Radiation dosimetry, bioassay, environmental monitoring, worker training, instrument maintenance, and other related radiation safety files maintained by Mr. Venable appeared to be complete and well organized. All important data was quickly retrievable and understandable.

3.0 Recommendations

The radiation protection program is effective in reducing exposures to as low as reasonably achievable. Results from external and internal dosimetry monitoring programs demonstrate that the doses received by the HMC staff and contractors are well within the limits allowed by regulations. Also, HMC management and staff are continuing to take additional measures to assure that the ALARA policy is implemented. This auditor, however, offers the following recommendations to enhance the overall radiation safety program:

1. Perform air particulate sampling on top of the large impoundment to monitor the long-lived alpha activity to which workers are exposed even when not working under an RWP.
2. Perform a one-time study to collect WL measurements from inside of the RO building to document that radon daughters are not in equilibrium with the radon.
3. Perform an annual leak test on radioactive sources in routine service.
4. Perform a clean area survey of office and lunchroom areas on a quarterly basis.
5. Use the results of the annual and periodic exposure rate surveys on top of the large impoundment to identify elevated areas, and cover these areas with clean soil to reduce exposures to workers and to prevent generation of air particulates.

APPENDIX D

INSPECTION OF TAILINGS PILES AND PONDS

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KLEINFELDER
An employee owned company

December 11, 2003
Project No. 16977

ALB3RP001

Mr. Al Cox
Homestake Mining Company of California
P.O. Box 98
Grants, New Mexico 87020

SUBJECT: REPORT OF STABILITY ASSESSMENT OF TAILING PILES AND PONDS
HOMESTAKE GRANTS PROJECT
GRANTS, NEW MEXICO

Dear Mr. Cox:

In accordance with your verbal request of November 20, 2003, the undersigned performed visual observations of the tailing piles and evaporation ponds at the Homestake Grants Project located at Grants, New Mexico, accompanied by Mr. Al Cox. This report addresses the observations and findings of the requested inspection, which was performed on December 2, 2003 as well as assessment of Homestake's records of settlement measurements, sump discharges, and reinjection rates.

OBSERVATIONS

The undersigned, Dr. Alan Kuhn of Kleinfelder, Inc. performed a visual examination of the tops and outslopes of the large and small tailing impoundments and of the dike, slopes, and liners of both evaporation ponds #1 and #2. The weather was clear, windy, and temperatures were in the 50s.

The tailing impoundment slopes appear to be stable and no indications of mass movement were observed. The outslopes of the small pile are slightly rilled on the southwest and southeast sides. However, the rills are shallow and have not incised noticeably over the past year. Earthwork, including blading and addition of some clean fill, has been completed on the east and north outslopes. The east inslope, on which the liner was repaired last year, is in good condition; it is protected from wave run-up by an energy dissipater consisting of two rows of floating Drisco pipe placed about 20 feet offshore from and parallel to the east inslope. The remaining liner and earthen surfaces associated with the small pile/evaporation pond #1 appear to be in good condition.

The water surfaces in evaporation pond #2 was well below maximum operating level, exposing a substantial area of liner. Although encrusted with salts in many places, the liner appeared to be in good condition. Mr. Cox reported that since liner repairs were made last year, no leakage has been detected in the leak detection sumps. Ponded water located south of the southeast outslope has no visible connection to the pond and is, therefore, probably a remnant of recent precipitation runoff.

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The large impoundment appears to be in good condition. Top surfaces are slightly rilled in some locations, and some recent blading has been performed to control erosion. This routine maintenance appears to be adequate if performed periodically when rills deepen due to concentrated runoff. The outslopes of the large impoundment are covered with final riprap; these slopes and the riprap cover are in good condition. Substantial volunteer vegetation has developed on these slopes.

The recent settlement-point survey, conducted on November 24, 2003, recorded relatively minor changes from last year with the exception of two points. The exceptions were point D-9 (-2.38 feet) and E-9 (+0.19 feet). Although not noted in MFG's Review of 2002 Settlement Monitoring Data (1/21/03), the 2002 survey recorded apparent heave at D-9 of +2.23 feet and apparent settlement of -0.31 feet at E-9 from 2001 to 2002. Those 2002 data appear to be errors in either the surveys of those points or in the data entries. If the 2002 D-9 datum is ignored, the 2003 reading indicates settlement at D-9 of 0.15 feet in two years or 0.075 feet per year, which is consistent with other nearby settlement points. Point E-9 has a recent history (1999-2001) of apparent heave of about 0.1 feet per year until 2002, when the annual change was recorded as 0.31 feet settlement (see Kleinfelder's 2002 inspection report). The 2002-2003 apparent change of +0.19 feet probably includes compensation for an error in the 2002 datum, producing a 2001-2003 net change of -0.12 feet or about -0.06 feet per year, which is also consistent with neighboring points. The remaining changes in settlement points recorded in 2003 are 0.08 feet or less, generally within or close to the expectable range of survey accuracy. However, most of the recorded changes on the west cell are positive (apparent heave) except for the "5" line, and most of the east cell changes are negative (apparent settlement) except for the "6" line. This pattern of change does not appear related to injection activities or other operational cause, implying that there might be a minor systematic error in the survey.

During the period of time when water is being injected into the impoundment for contaminant flushing, phreatic levels might rise and settlement rates might be reduced or even slightly reversed over slime-rich locations. Although the factors of safety against mass movements in the impoundment slopes are well above the minimums required (>1.5 and >1.0 for static and pseudostatic loading, respectively) and unlikely to be reduced significantly by the injection process, the settlement point and piezometer readings should be tracked to confirm this and to detect any signs of destabilization.

CONCLUSIONS AND RECOMMENDATIONS

The foregoing observations indicate that the tailing impoundments (piles) and the evaporation ponds are in good condition and are being maintained within the operating limits of the NRC license and the respective facility designs. For the duration of the injection program, dewatering will be interrupted and perhaps even reversed, and little if any consolidation of the slimes and settlement should be expected. When dewatering resumes, settlement over slime-rich areas could be reactivated. This will delay confirmation of 90% settlement and placement of the final radon barrier.

Although increases in phreatic levels due to injection in the large impoundment are probably not large enough to significantly impact stability, it would be prudent to collect data to confirm this.

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Therefore, Kleinfelder recommends that, for the duration of the injection program, quarterly water level measurements be made on piezometers in the large impoundment. The water level records should be reviewed by the undersigned at least annually and whenever water levels come within 2.0 feet of those of the fourth quarter, 1993, which were used in the reclamation design stability analysis.

Over the history of settlement measurements on the large impoundment, which extend back to the early 1980s, typical and acceptable survey errors (the band of measurement variability due to expectable instrument and human factors) have been about ± 0.06 feet. Given the good local control points and shot distances, this error band should not be any greater for recent and future surveys.

Kleinfelder recommends that the surveyor review the 2002 survey data to ascertain whether the D-9 and E-9 readings contain errors and, if so, to make appropriate corrections.

Based on our visual observations and evaluation of available data, no correctives actions in impoundment or pond operations are required.

LIMITATIONS

The recommendations contained in this report are based on Dr. Kuhn's field visit, evaluation of information generated by others and obtained from Homestake, and his understanding of the inspected facilities. If any conditions are encountered at this site which are significantly different than those described in this report, Kleinfelder should be immediately notified so that we may make any necessary revisions to findings or recommendations contained in this report.

This report was prepared in accordance with generally accepted standards of practice at the time the report was written. No warranty, express or implied, is made. It is the Client's responsibility to see that all parties to the project are made aware of this report in its entirety.. The information contained in this report should be used at the Owner's and Contractor's option and risk.

We appreciate the opportunity to work with you on this project. If you have any questions or need additional information, please contact this office.

Respectfully submitted,
KLEINFELDER, INC.

Alan K. Kuhn, Ph.D., P.E., R.P.G.
Senior Principal Consultant

AK:cs

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Appendix E:

Grants Reclamation Project
Land Use Review / Survey

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GRANTS RECLAMATION PROJECT
LAND USE REVIEW / SURVEY

APPENDIX E

FIGURES

TABLES

Grants Reclamation Project

Land Use Review / Survey

Annual Report No. 2 – CY2003

E.1 Background

As part of Amendment 34 to the Grants Reclamation Project Radioactive Materials License – SUA-1471-Docket 40-8903 approved June 19, 2002, License Condition (LC) 42 was amended to require submittal of a land use survey with the License annual report to NRC. This report is the second annual land use review / survey pursuant to (LC) 42.

The general focus of the land use survey is to document and summarize the current land uses and any identified changes to land use in proximity to the Grants Reclamation Project, in particular those areas that are proximal to the tailings pile areas undergoing reclamation and closure and immediate surrounding areas where ongoing ground water restoration continues.

E.2 2003 – Land Use – Homestake Properties

Homestake Mining Company of California (HMC) owns and controls a sizeable land area in and around the Grants Reclamation project. Over the last number of years, additional lands have been acquired as opportunity has arisen and acquisition of such lands are deemed appropriate in relation to ongoing ground water remediation and restoration activities and final reclamation / closure of the site.

Much of the HMC lands held in the area that are not in immediate proximity to the tailings pile complex have been, and are continuing to be, utilized for livestock grazing on a lessor/lessee tenant arrangement. Most of the current land area within the present Site Boundary has been excluded from livestock grazing and other land use except those directly related to the ongoing ground water restoration activities. Livestock grazing is not currently allowed in the immediate tailings pile areas, evaporation pond areas, or the office/maintenance shop locations. These areas have been livestock fenced to exclude grazing; certain small areas in the southern and western portions of land within the Site Boundary are, however, utilized for livestock grazing.

A number of small lot and small acreage parcels [e.g. residential lot(s)] held by HMC in the general area of the reclamation site are idle and not under a current land use activity.

The other significant land use activity situated on HMC-held lands in the area includes irrigation utilized for crop production. Water used for irrigation is an integral part of the ongoing ground water restoration and cleanup program for the project. Prior to 2002, HMC had 270 acres of land under irrigation consisting of a two-field flood irrigation area comprising 120 acres and a center pivot spray irrigation area comprising 150 acres. During 2002, an additional center pivot irrigation system was commissioned that comprises 60 acres. In 2003, an additional 24 acres of flood irrigation was added to the irrigation system in Section 33.

HMC lands now under irrigation totals 354 acres situated in Sections 28, 33 and 34 (see project location Figure 2.1-1 in report Section 2.1 of this annual report for location of the four areas under present irrigation).

E.3 2003 – Land Use – Pleasant Valley Estates, Murray Acres, Broadview Acres and Felice Acres Residential Subdivisions

Aside from the land uses on HMC land in the Grants Reclamation Project area described in the previous section above, the other major land use immediately proximal to the Site consists of residential development located in the Pleasant Valley Estates, Murray Acres, Broadview Acres and Felice Acres Residential subdivisions. By way of background, HMC provided these subdivision areas with a potable water supply system as an extension of the Village of Milan water supply in the mid-1980's. The Village of Milan water supply extension to these areas was provided at that time to address a concern over the quality of ground water used for domestic purposes in these nearby and adjacent subdivision areas.

An assessment of current land use in the four subdivision areas was undertaken during the 1st quarter of 2004 to ascertain present uses, occupancy and status for the various lots within the subdivisions. Over the years, permanent residential homes, modular homes and mobile homes have been established in the subdivision areas, and immediate adjacent areas, as would typify a rural residential neighborhood. A number of lots remain vacant, or are utilized for uses such as horse barns, corrals, equipment storage, etc. In some cases, dwellings are present on several lots throughout the subdivisions but are currently vacant or have been permanently abandoned and in various states of disrepair.

The primary issue of concern in the subdivision areas is to determine whether current occupied dwellings are utilizing water service from the Village of Milan system for potable water consumption and not private wells, particularly private domestic wells that are completed into the underlying shallow alluvial aquifer.

The survey conducted in early 2004 consisted of first obtaining the records and customer database from the Village of Milan water district. This information was reviewed to prepare a separate residential customer database for the four subdivisions that would reflect the lot number, customer, water meter customer ID number and whether the customer utilized Milan water during 2003. See Tables E-1 through E-4 for 2003 database information.

A lot-by-lot reconnaissance was made in each of the subdivisions to determine whether each lot was occupied or vacant, contained a residence(s), and which residences are currently occupied. This information was then checked against the database to determine whether each occupied residence is supplied and metered through the Village of Milan water supply system. Results of this reconnaissance effort are summarized on the subdivision plat maps; see attached Figures E-1 through E-4.

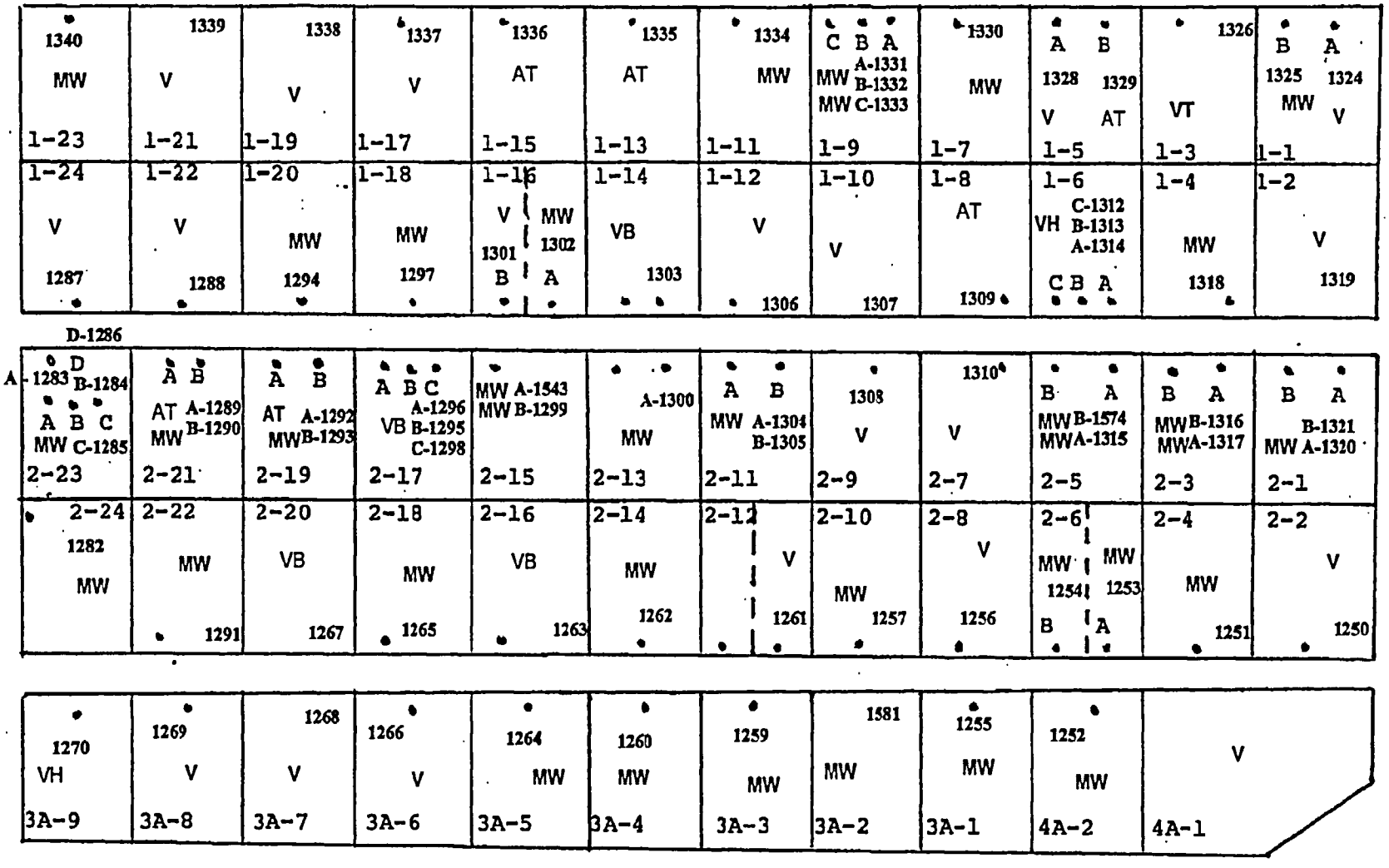
Field review of the subdivisions areas, along with follow-up inquiries as required to confirm the status of water use at each property, indicates that at present all known and identified occupied residential sites in the immediate four subdivisions are on metered water service with the Village of Milan.

E.4 Conclusion

The review of land use for HMC properties and the four residential subdivision areas to the immediate south and west of the Grants Reclamation Project site indicates that present land uses in the area do not present a new or increased concern in relation to the underlying ground water quality and related project remediation / restoration activities. Residential domestic potable water supplies in the subdivisions are currently being supplied by the Village of Milan water supply and there are no known or identified cases for 2003 where it is suspected that domestic water supply is being obtained from private alluvial well sources.

This land use survey / review is completed on an annual basis to meet annual reporting requirements under the NRC License. This will help in assuring that land use activities in the immediate area surrounding the Grants project are regularly reviewed and assist in determining that those uses do not present a new concern with local ground water usage until project ground water restoration activities are completed.

FIGURE E-1 BROADVIEW ACRES LAND USE STATUS AND WATER USE



V - Vacant Lot, No Structure
VH - Vacant House
AT - Abandon Trailer
VT - Vacant Trailer
VB - Vacant Building
NU - No Use

BROADVIEW ACRES

MW - Milan Water Usage at 11/03

N

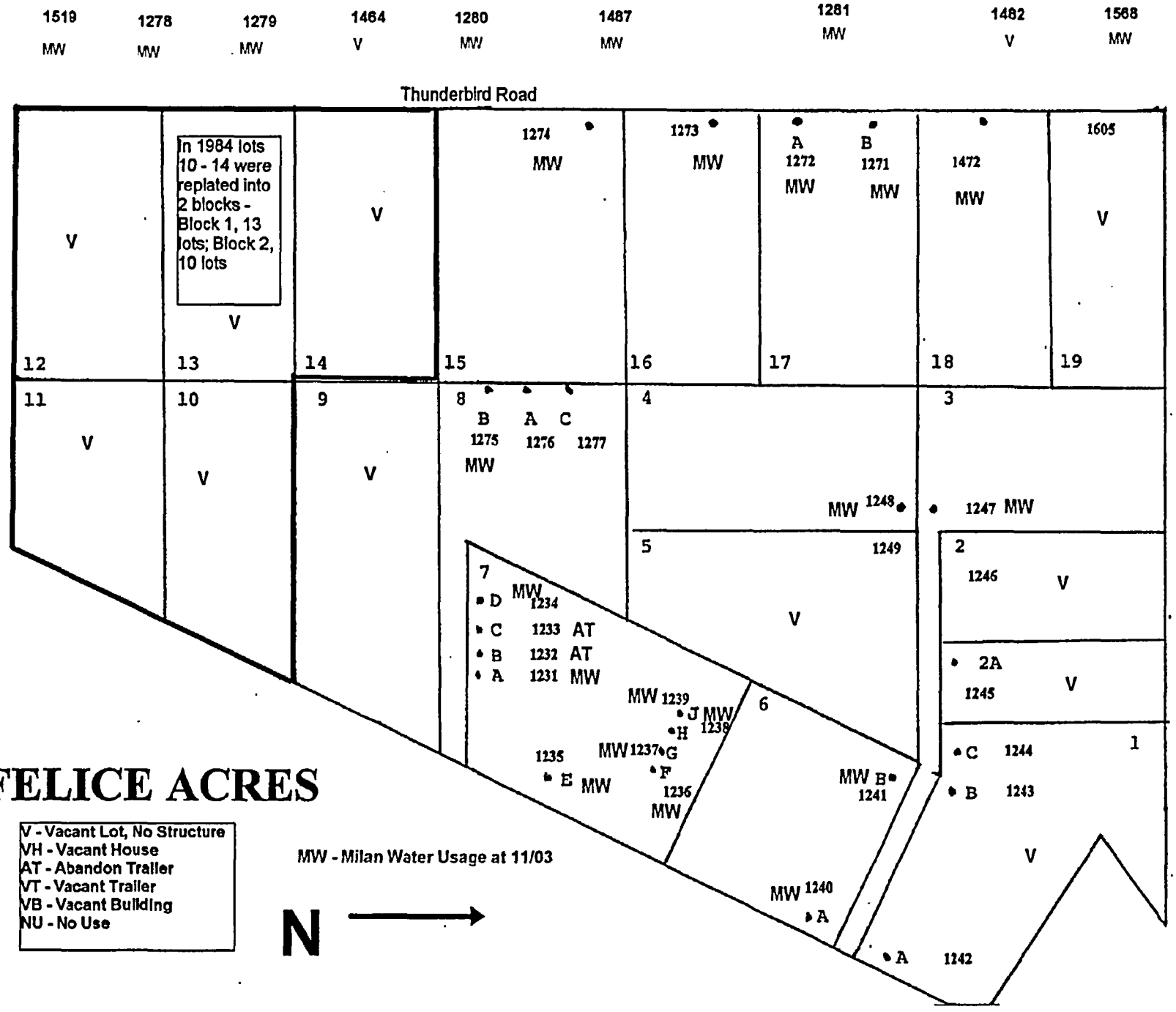


FIGURE E-2 FELICE ACRES LAND USE STATUS AND WATER USE

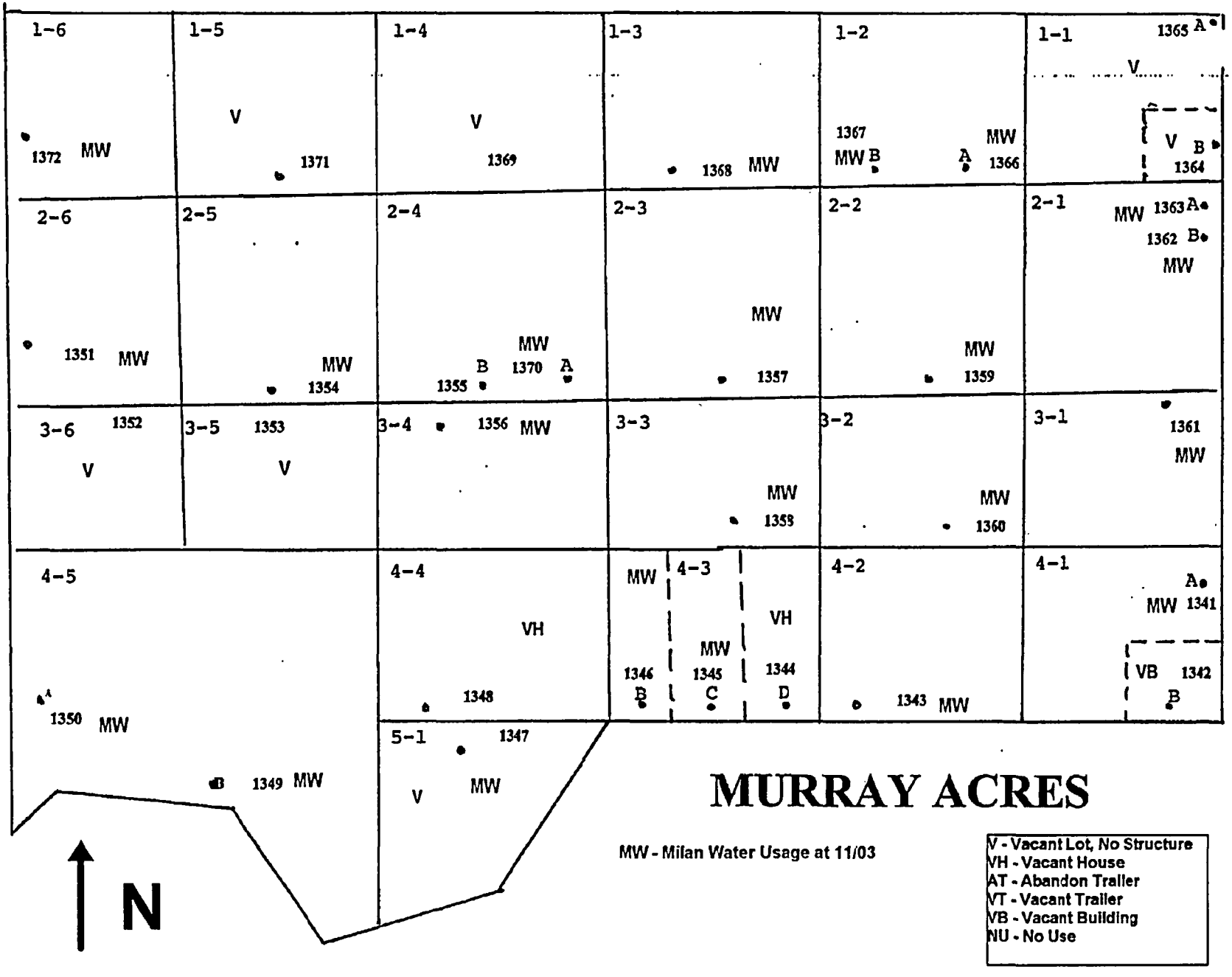


FIGURE E-3 MURRAY ACRES LAND USE STATUS AND WATER USE

PLEASANT VALLEY ESTATES

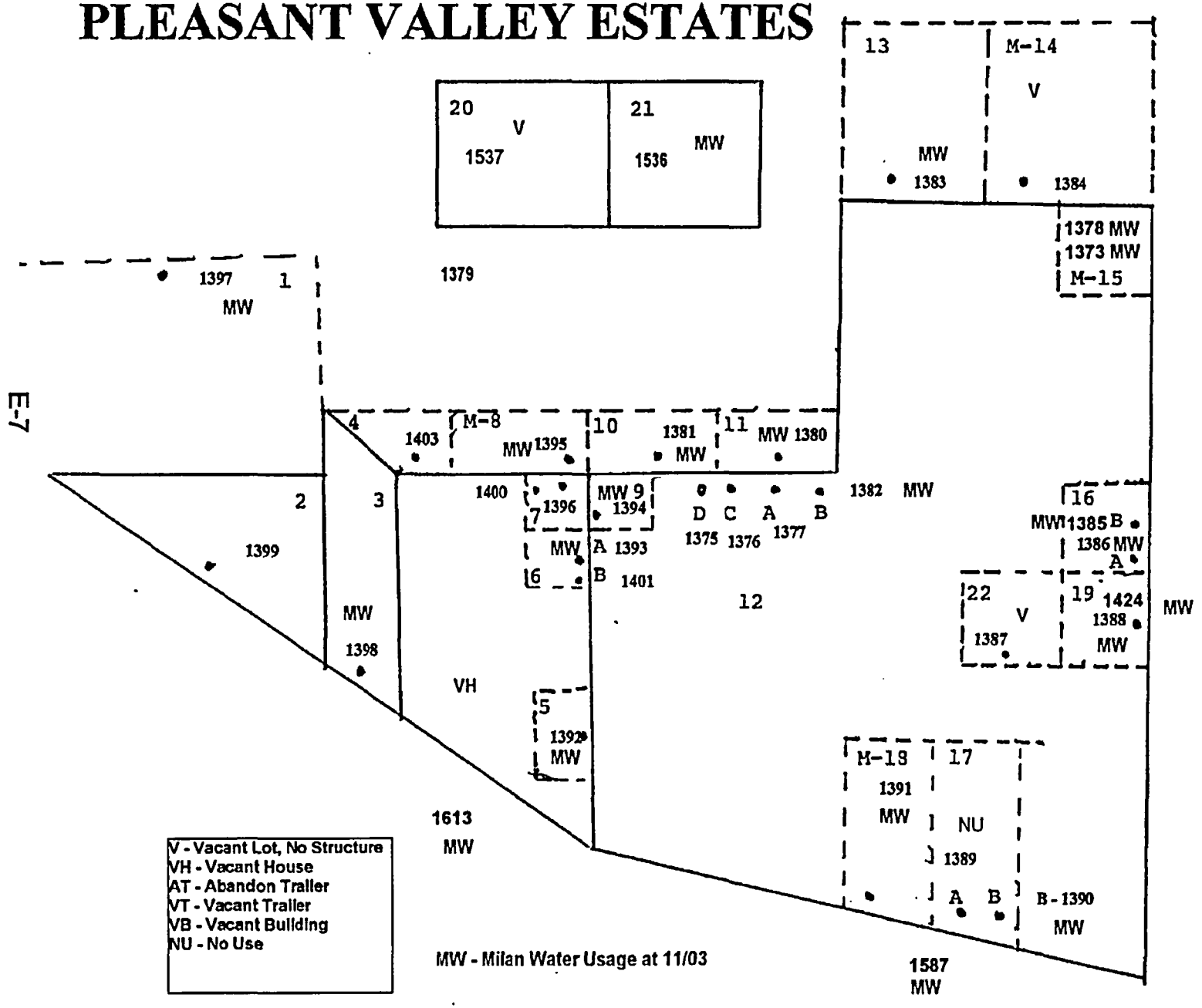


FIGURE E-4 PLEASANT VALLEY ACRES LAND USE STATUS AND WATER USE

TABLE E-1 WATER USE OF MILAN WATER IN BROADVIEW ACRES

SUBDIVISION LOT / BLOCK	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2002 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2003 WATER USAGE
2-2	1250		
2-4	1251	X	X
4A-2	1252	X	X
2-6A	1253	X	X
2-6B	1254	X	X
3A-1	1255	X	X
2-8	1256		
2-10	1257	X	X
3A-3	1259	X	X
3A-4	1260	X	X
2-12	1261		
2-14	1262	X	X
2-16	1263		
3A-5	1264	X	X
2-18	1265	X	X
3A-6	1266		
2-20	1267		
3A-7	1268		
3A-8	1269		
3A-9	1270	X	
2-24	1282	X	X
2-23A	1283		
2-23B	1284		
2-23C	1285	X	X
2-23D	1286		
1-24	1287		
1-22	1288		
2-21A	1289		
2-21B	1290	X	X
2-22	1291	X	X
2-19A	1292		
2-19B	1293	X	X
1-20	1294	X	X
2-17B	1295		
2-17A	1296		
1-18	1297	X	X
2-17C	1298		
2-15B	1299	X	X
2-13A	1300	X	X
1-16B	1301		

TABLE E-1 WATER USE OF MILAN WATER IN BROADVIEW ACRES

SUBDIVISION LOT / BLOCK	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2002 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2003 WATER USAGE
1-16A	1302	X	X
1-14	1303		
2-11A	1304	X	X
2-11B	1305		
1-12	1306		
1-10	1307		
2-9	1308		
1-8	1309	X	
2-7	1310		
1-6C	1312		
1-6B	1313		
1-6A	1314		
2-5A	1315	X	X
2-3A	1316	X	X
2-3B	1317	X	X
1-4	1318	X	X
1-2	1319		
2-1A	1320	X	X
2-1B	1321		
1-1A	1324		
1-1B	1325	X	X
1-3	1326		
1-5A	1328		
1-5B	1329		
1-7	1330	X	X
1-9A	1331		
1-9B	1332		X
1-9C	1333		X
1-11	1334	X	X
1-13	1335		
1-15	1336		
1-17	1337		
1-19	1338		
1-21	1339		
1-23	1340	X	X
2-15A	1543	X	X
2-5B	1574	X	X
3A-2	1581	X	X
4A-1	no meter		

TABLE E-1 WATER USE OF MILAN WATER IN BROADVIEW ACRES

SUBDIVISION LOT / BLOCK	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2002 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2003 WATER USAGE
EAST OF BROADVIEW ACRES			
	1322	X	X
	1656		X

TABLE E-2 WATER USE OF MILAN WATER IN FELICE ACRES

SUBDIVISION LOT / BLOCK	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2002 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2003 WATER USAGE
7A	1231	X	X
7B	1232		
7C	1233		
7D	1234	X	X
7E	1235	X	X
7F	1236	X	X
7G	1237	X	X
7H	1238	X	X
7J	1239	X	X
6A	1240	X	X
6B	1241	X	X
1A	1242		
1B	1243		
1C	1244		
2A	1245		
2	1246		
3	1247	X	X
4	1248	X	X
5	1249		
17B	1271	X	X
17A	1272	X	X
16	1273	X	X
15	1274	X	X
8B	1275	X	X
8A	1276		
8C	1277		
18	1472	X	X
19	1605		
9			
10			
11			
12			
13			
14			

PROPERTY WEST OF FELICE ACRES			
	1278	X	X
	1279		X
	1280	X	X
	1281	X	X

TABLE E-2 WATER USE OF MILAN WATER IN FELICE ACRES

SUBDIVISION LOT / BLOCK	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2002 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2003 WATER USAGE
	1464		
	1482	X	
	1487	X	X
	1519	X	X
	1568	X	X

TABLE E-3 WATER USE OF MILAN WATER IN MURRAY ACRES

SUBDIVISION LOT / BLOCK	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2002 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2003 WATER USAGE
4-1A	1341	X	X
4-1B	1342	X	
4-2	1343	X	X
4-3D	1344	X	
4-3C	1345	X	X
4-3B	1346		X
5-1	1347		X
4-4	1348		
4-5B	1349	X	X
4-5A	1350	X	X
2-6	1351	X	X
3-6	1352		
3-5	1353		
2-5	1354	X	X
2-4B	1355		
3-4	1356	X	X
2-3	1357	X	X
3-3	1358	X	X
2-2	1359	X	X
3-2	1360	X	X
3-1	1361	X	X
2-1B	1362	X	X
2-1A	1363	X	X
1-1B	1364		
1-1A	1365		
1-2A	1366	X	X
1-2B	1367	X	X
1-3	1368	X	X
1-4	1369		
2-4A	1370	X	X
1-5	1371		
1-6	1372	X	X

TABLE E-4 WATER USE OF MILAN WATER IN PLEASANT VALLEY ESTATES

SUBDIVISION LOT / BLOCK	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2002 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2003 WATER USAGE
M-15B	1373	X	X
M-15A	1378	X	X
12D	1375		
12C	1376		
12A	1377		
	1379	X	
11	1380	X	X
10	1381	X	X
12B	1382	X	X
13	1383	X	X
M-14	1384		
16B	1385	X	X
16A	1386	X	X
22	1387		
19	1388	X	X
17A	1389	X	
17B	1390	X	X
M-18	1391	X	X
5	1392		X
6A	1393	X	X
9	1394	X	X
M-8	1395	X	X
7	1396		
1	1397	X	X
3	1398	X	X
2	1399		
7	1400		
6B	1401		
4	1403		
	1424		X
21	1536	X	X
20	1537		

PROPERTY SOUTH OF PLEASANT VALLEY ESTATES			
	1587		X
	1613		X