GROUND-WATER HYDROLOGY, RESTORATION AND MONITORING AT THE GRANTS RECLAMATION PROJECT FOR NMED OFFSITE DP

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February 2010

GROUND-WATER HYDROLOGY, RESTORATION AND MONITORING

AT THE GRANTS RECLAMATION SITE

FOR NMED OFF-SITE DP

FOR:

NEW MEXICO ENVIRONMENT DEPARTMENT

BY:

**HOMESTAKE MINING COMPANY
OF CALIFORNIA**

AND

**HYDRO-ENGINEERING, L.L.C.
CASPER, WYOMING**

FEBRUARY 2010

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HYDROLOGIST**

2/16/10

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1.0 SUMMARY AND INTRODUCTION

1.1 SUMMARY

The ground-water hydrology at the Grants site consists of 5 aquifer systems. The main aquifer relative to ground-water restoration is the alluvial aquifer. The alluvial aquifer is the uppermost aquifer and requires the majority of ground-water restoration. It exists in the areas of the large tailings pile (LTP) and does not exist in areas where the base of the alluvial material is higher than the water-level elevation. The San Mateo alluvial aquifer extends from north of the site through the LTP area and extends approximately 2 miles west where it joins the Rio San Jose alluvial system. The alluvial aquifer also exists to the south of the site and southwest where it joins the Rio San Jose alluvial system in Section 4.

The Chinle Formation, which is mainly a shale unit, exists below the alluvial aquifer in this area. This formation generally acts as a very good aquitard but does have three aquifers that subcrop against the alluvial aquifer and therefore they generally have good connections in their subcrop areas. Three Chinle aquifers are the Upper, Middle and Lower Chinle aquifers.

The San Andres aquifer is the regional aquifer in this area and therefore is a very important ground-water system. The San Andres aquifer is used as a source for freshwater injection supply at the Grants site.

The ground-water restoration plan at the Grants site consists of diversion of water to treat the contaminated groundwater and disposal of high concentration waste water in lined evaporation ponds that are addressed in DP-200 support document (see Hydro-Engineering 2010). Irrigation has also been used to treat slightly contaminated water and produce a crop or forage for cattle grazing and is addressed in this support document for the HMC Off-site discharge plan. Freshwater injection is an important component of this aspect of the remediation program to aid in the containment of high concentrations. Water usage is related to collection of water for irrigation or treatment activities.

The addition of alternative options for treatment of water with small contaminant concentrations is proposed in this permit application. These alternative treatment activities will allow treatment of the ground water in the off-site area. *Insitu* treatment has the potential to prevent the leaching of additional concentrations from the formation material during final restoration of impacted ground water.

1.2 INTRODUCTION

This report presents a summary of the ground-water hydrology and Off-site restoration program activities at the Grants reclamation site. The ground-water hydrology at the Grants Project Site was initially defined in 1976 (see Hoffman, 1976). The initial ground-water discharge plan for the Grants Project describes the ground-water hydrology setting with initial definition of the bedrock aquifers (see Hydro-Engineering, 1983). The first renewal of DP-200 also presented additional definition of ground-water hydrology at the Grants site (see Hydro-Engineering, 1988). Updates to the ground-water hydrology of the site are presented in Hydro-Engineering, LLC, 2000 and 2003. The Grants project annual performance review report, Hydro-Engineering, 2009, presents numerous water level concentrations plots that are useful in evaluating the detailed ground-water hydrology of the site. The results of the ground-water restoration program have been defined in numerous ground-water monitoring reports for this site. The Corrective Action Program (CAP) (see Hydro-Engineering, 1989) for the Nuclear Regulatory Commission (NRC) presents various aspects of the restoration program, along with the discharge plan. An updated CAP is presently being evaluated by the NRC. This report presents additional data developed since these reports with details presented on the geologic setting, ground-water flow, aquifer properties and ground-water restoration for the alluvial aquifer.

In 1976, Homestake determined that a contaminated plume originating from its tailings pile existed in the alluvial aquifer and was moving toward off-site areas to the south and west. In order to contain and retract the plume, Homestake devised a ground-water containment program. This program was approved by regulatory authorities and has been in place since 1977. The containment program was converted to a ground-water restoration program after the mill shut-down in 1990. An irrigation program was started in 2000 to aid the restoration of small contaminant concentrations in the off-site area while producing a beneficial crop. The purpose of the off-site restoration program is to restore the ground water concentrations to as close to background levels as possible. The components of the restoration program are a series of injection/collection wells using water from the San Andres aquifer for fresh-water injection and collection of water for irrigation or treatment. Alternative treatment options are being added to aid in the final restoration of small contaminant concentrations in the affected aquifers.

2.0 GROUND-WATER HYDROLOGY OF ALLUVIAL AQUIFER

This section presents the geologic setting and well completions for the alluvial aquifer. Water-level information and base of the alluvial aquifer are used to define the saturated thickness of the alluvial aquifer. Aquifer properties are presented and used with the water-level elevations to define the rates of ground-water movement and quantity of ground-water flow.

2.1 GEOLOGIC SETTING AND WELL COMPLETIONS

The geologic map for the Grants quadrangle in Dillinger (1990) presents the surface geology of this area. The surface geology and structure contours are also presented on USGS quadrangle topographic maps in Thaden, et. al. (1967). Geologic maps and other information were compiled and presented by Chapman, et. al. (1979), Huffman and Condon (1993), Kelly (1963) and Rautman (1980). The uranium ore bearing rocks that have been mined in the San Mateo drainage system occur in an outcrop band from approximately five miles east of the site to ten miles to the northwest. These rocks contain significant natural concentrations of uranium and selenium. Therefore, the alluvial material has naturally occurring concentrations of uranium and selenium that are above normal concentrations due to erosive effects in the presence of these uranium deposits. The Chinle formation forms the base of the alluvial aquifer at the Grants site.

The hydrologic conditions in this area have been defined by Gordon (1961), Baldwin and Rankin (1995), Baldwin and Anderholm (1992), Frenzel (1992), Stone, et. al. (1983), Brod and Stone (1981), Dam, et. al. (1990) and the New Mexico Improvement Division (1981). Hydro-Search (1981) contains hydrologic information developed on an adjacent uranium mill site. Ground-water conditions for the Grants site have been defined in previous documents (see Hoffman, 1976; Hydro-Engineering, 1983; Hydro-Engineering, 1988; Hydro-Engineering, 1996, Hydro-Engineering, LLC, 2000 and

Hydro-Engineering, LLC, 2003). The Grants project site exists on the San Mateo alluvial system. The San Mateo alluvial system follows the San Mateo alluvium and associated drainage system and extends from northeast of the site to the south and west. Bedrock material exists on the surface to the northeast, southeast and northwest sides of the alluvial material.

The basic well data for the alluvial wells are presented in Table 2-1 for the Homestake on-site wells. Tables 2-2 and 2-3 present the alluvial wells for the four adjacent subdivisions while Table 2-4 lists the Homestake Off-site alluvial wells outside of the four subdivisions and the Homestake on-site wells. Figure 2-1 shows the location of the alluvial wells that have been used to define the ground-water conditions in the alluvial aquifer at the Grants site. This figure presents the current operation of injection and collection wells and is subject to change as conditions progress for the site ground-water restoration program. Different wells are used with time as the restoration moves closer to the tailings piles. A scale of 1" = 1600' is used to present this and subsequent information for the Grants site.

2.2 BASE OF THE ALLUVIAL AQUIFER

The drilling of remediation wells at the Grants site has defined the base of the alluvium in detail. Figure 2-2 presents the contours of the base of the alluvium. The base of the alluvial contours show that an alluvial channel runs through the western portion of the LTP and turns to the southwest near the southwest corner of the LTP (Figure 2-2). The base of the alluvium contains higher elevations in eastern Murray Acres, which extend back to the northeast toward the small tailings pile (STP). This area tends to decrease the amount of alluvial water flowing in this area.

The edge of the alluvial aquifer is defined where the base of the alluvium is equal to the water-level elevation. The green line and green cross-hatched pattern on Figure 2-1 depicts the saturated limits of the alluvial aquifer.

The alluvial zero saturation area in Section 34 extends to the northwest into the southwest portion of Section 28 as shown in Figure 2-1. This ridge of zero saturation in the alluvium forces the ground water in the San Mateo to move through a notch that is approximately one-half mile wide in the western portion of Section 28 prior to joining the Rio San Jose alluvium in Section 29. Some San Mateo alluvial water can also flow through Section 3 prior to reaching the Rio San Jose alluvium in Section 4. The San Mateo alluvial water upgradient of Section 3 combines with the Lobo alluvial water prior to flowing through Section 3. The Rio San Jose alluvium is limited to an area west and southwest of the project area as shown in Figure 2-1 and 2-2.

2.3 WATER LEVELS

This section presents the water-level information for the alluvial aquifer. The direction of ground-water flow is defined by the water-level elevation maps, while gradients from this map are also used to determine rates of ground-water movement. The limits of the alluvial aquifer are shown in Figure 2-1.

2.3.1 WATER-LEVEL DEPTHS AND ELEVATIONS

Water level depths are presented in the well data tables. Figure 2-3 presents the water-level elevations for the alluvial aquifer for 2008. These figures show that the ground water is flowing into the tailings area from the north and converges to the collection wells. Red arrows are shown to indicate the direction of ground-water flow. The fresh-water injection downgradient of the site, used in conjunction with the collection wells, forces ground water to converge from all directions to the collection points in Section 2 near the LTP. Typical gradients in the area of the collection wells are from 0.01 to 0.02 ft/ft.

This piezometric surface shows that the alluvial ground water converges with the Rio San Jose alluvial system in the western portion of Section 28. Flow in the San Mateo alluvial system flows to the west through Section 28, and then turns to the south after it joins the Rio San Jose alluvial system. Flow from the Section 3 area (see Figure 2-3) converges with the Rio San Jose alluvial system in Section 4, which is slightly greater than one-mile downgradient of the Section 28 San Mateo confluence with the Rio San Jose. The San Mateo alluvial flow from Section 3 has a typical gradient of 0.006 ft/ft. Typical gradients in Section 28 are 0.005 ft/ft, while a much flatter gradient typically exist in the Rio San Jose with a typical gradient being 0.001 ft/ft.

2.3.2 WATER-LEVEL CHANGE

The water-level changes at the Grants site have been defined in detail in each of the past years annual performance review reports. The 2008 Annual Report presents the water-level changes through 2008 for the alluvial wells (see Section 4.2 of Hydro-Engineering, LLC, 2009). The 1997 Annual Report presents the historical water-level change plots through 1997, while later annual reports present only the last five or ten years of water-level plot data. Water-level changes at the Grants Project site have been due to variations in the operation of the collection and injection systems. The changes in water level have generally been gradual and in the range of a very few feet per year.

The locations of alluvial wells used to portray the water-level changes are presented in Figures 2-4. The water-level changes in the alluvial wells in this area are shown on Figures 2-5 and 2-6. Water levels for wells NC, F, S4, SUB1, 688 and X are shown on Figure 2-5. Fairly steady water levels have been observed in each of the San Mateo alluvial wells for the last 15 years except for a rise in water levels in wells NC and a decline in well X for the last 6 years. The water levels have steadily declined for the last 14 years in the Rio San Jose alluvial well 994. Water levels in the Rio San Jose are affected by water-level trends in the San Andres aquifer. Some of the declines in water levels are due to the small amount of total precipitation that have been evident in recent years. The lower precipitation would be expected to result in a natural decline in the water levels due to less recharge.

2.4 SATURATED THICKNESS OF THE ALLUVIUM

The alluvial aquifer saturated thickness is defined by the difference between the water-level elevation and the base of the alluvium. The saturated thickness is presented in the alluvial well data tables. The saturated thickness is important because it relates to the quantity of water (area times saturated thickness times specific yield) stored in the aquifer. It is also important because the rate of water a well will yield is partly a function of saturated thickness. These saturated thicknesses are posted on Figure 2-7. The individual data points are influenced by conditions of use of the wells and, therefore, the difference in contours presents a more representative thickness. This shows that the saturated thickness in the southwest corner of the LTP is 60 feet in the alluvial aquifer and decreases to zero at the boundary of the alluvial aquifer. Saturated thicknesses have been increased significantly in the area of the fresh-water injection. Figure 2-7 shows that an additional area of zero saturation exists to the southwest of the Grants site, causing the ground water to either move to the west of the site, which flows through Section 28 into the Rio San Jose alluvium or around the east side of Felice Acres to Section 3.

Figure 2-7 shows that saturated thickness in the San Mateo alluvial system in Section 28 exceeds 30 feet in the southeast portion of this section. Saturated thicknesses are greater in the Rio San Jose alluvium system. The Rio San Jose alluvial system is bounded to the southwest and northeast due to the limit of alluvium in these areas.

2.5 AQUIFER PROPERTIES

The most important aquifer property for the alluvial aquifer is the hydraulic conductivity. Hydraulic conductivity is a representation of the unit transmitting ability of the alluvial sands. Transmissivity (hydraulic conductivity multiplied by saturated thickness) is also presented to convey total transmitting ability of the aquifer. Hydraulic conductivity is important because it is used to calculate the velocity of the ground water and total transmitting ability of the aquifer is also a function of this parameter. The specific yield is the primary storage property for the unconfined alluvial aquifer and is important because it defines the amount of drainable water in the aquifer.

Figure 2-8 presents the hydraulic conductivities measured for the alluvial aquifer at this site. The data presents the hydraulic conductivities determined from pump tests for the alluvial aquifer. Hydro-Engineering (1981 and 1996) presents the pump test results for most of the tests conducted on the alluvial aquifer. These values have been contoured and are presented in Figure 2-8. This figure shows that hydraulic conductivities near the LTP are greatest on the southwest side and generally decrease to the east. A ridge of lower hydraulic conductivities exists from the western edge of the small tailings to the southwest into Murray Acres. Hydraulic conductivities substantially increase to levels greater than 200 ft/day in the northern portion of Pleasant Valley and extend to the west. Hydraulic conductivities also increase in the Broadview Acres area.

Maximum ranges for hydraulic conductivities vary from greater than 200 ft/day in the heart of the San Mateo alluvial system in Section 28 to greater than 800 ft/day in the heart of the Rio San Jose alluvial system. Hydraulic conductivities greatly decrease toward the edge of the alluvial aquifer.

The transmissivity, which yields the total transmitting ability of an aquifer when multiplied by the gradient and the width, is presented from the pump test data. Transmissivity in gallons per day per foot (gpd/ft) is equal to the hydraulic conductivity in feet per day multiplied by saturated thickness with that product being multiplied by 7.48. Figure 2-8 presents the transmissivity for the alluvial aquifer for the Grants Project area. Figure 2-8 shows that the transmissivity through the western portion of the LTP is greater than 10,000 gpd/ft and extends to the west. The transmissivity increases to greater than 50,000 gal/day in the western half of Section 27. A transmissivity of greater than 10,000 gpd/ft also exists in the Broadview Acres area and extends down the alluvial channel through Section 3.

The transmissivities exceed 50,000 gpd/ft in Section 28 in the San Mateo alluvial system and increase to greater than 100,000 gpd/ft in the Rio San Jose alluvial system.

Specific yields for the site have varied from 0.16 to 0.28 for the alluvial aquifer, based on multi-well pump tests. A specific yield of 0.2 is thought to best represent the alluvial aquifer at the Grants site and was selected from calibration of numerical modeling of the site. This value is considered conservative relative to the restoration of the site. The lower hydraulic conductivity area will probably have a slightly smaller specific yield, which should reduce the volume required for restoration. The two factors may offset each other, resulting in similar restoration times for varying aquifer properties.

2.5.1 RATES OF GROUND-WATER MOVEMENT

The ground-water velocity equation is presented on pages 70 and 71 of Freeze and Cherry (1979). It is important to know the velocity of ground-water movement when designing restoration systems. The ground water upgradient of the LTP is moving at an average rate of 0.5 ft/day based on a gradient of 0.0033 ft/ft, a hydraulic conductivity of 30 ft/day and an effective porosity of 0.2. To the southwest of the Murray Acres injection system the ground water is estimated to be moving at a rate of 0.7 ft/day. Similar velocities are expected west of the tailings until the western half of Section 27 and Section 28, where velocities reach up to 4 ft/day. This ground-water movement is upgradient of the confluence with the Rio San Jose.

The ground-water velocity in the west area is estimated to be approximately four feet/day. Ground-water velocities in Section 28 were estimated based on an average hydraulic conductivity of 160 ft/day, a gradient of 0.005 ft/ft and an effective porosity of 0.2. A similar ground-water velocity is estimated for the Rio San Jose alluvial system, where gradients are 0.001 ft/ft with a hydraulic conductivity of 800 ft/day and an effective porosity of 0.2.

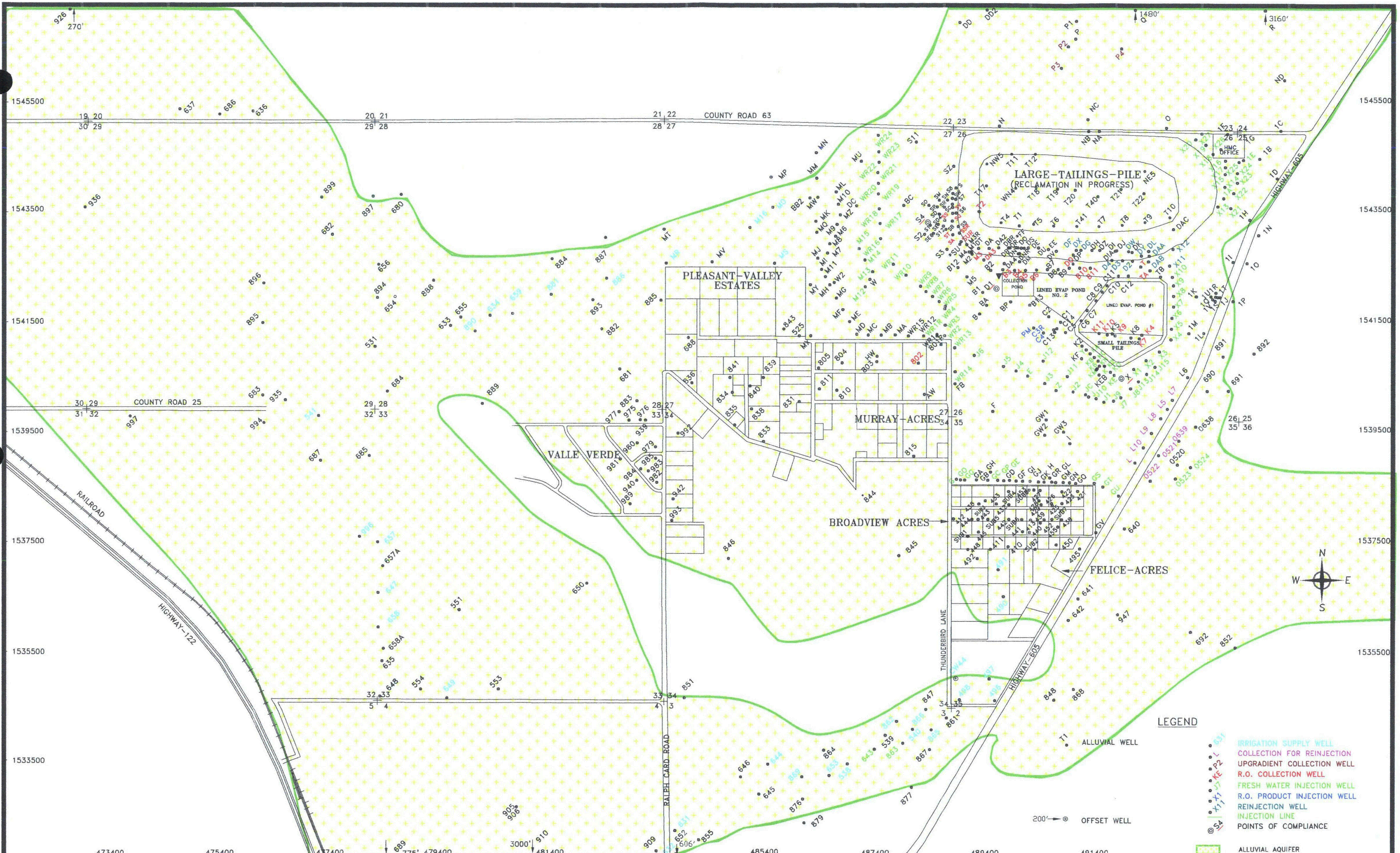
2.5.2 QUANTITY OF GROUND-WATER MOVEMENT

The quantity of water moving in the alluvial aquifer is governed by Darcy's Law where the rate is equal to the product of the transmissivity, gradient and width of the aquifer. An understanding of the quantity of ground water flowing is also needed in the restoration design. The flow of the San Mateo alluvial system north of the tailings has been estimated to be between 58 and 62 gpm. Under the injection conditions that have occurred for over 20 years, the quantity of water moving west of the Homestake Grants site is estimated to be 260 gpm based on an aquifer width of 6000 feet, an average gradient of 0.0062 ft/ft and a transmissivity of 10,000 gal/day/ft. The quantity of ground water in this western branch of the San Mateo alluvium joins the Rio San Jose in Section 29. An estimate of 69 gpm was obtained for the area to the southeast of Broadview Acres. This estimate is based on a width of 4000 feet, a gradient of 0.005 ft/ft and a transmissivity of 5000 gal/day/ft. This indicates that a total of approximately 330 gpm is moving downstream of the Homestake property.

2.6 WATER QUALITY

The water quality for the alluvial aquifer near the Grants aquifer is defined annually in Section 4 of the annual performance report. This section of the annual report presents concentrations maps for sulfate, TDS, chloride, uranium, selenium, molybdenum and several other less important constituents. Nine concentration plots are presented in the annual report to show the changes in alluvial water quality with time.

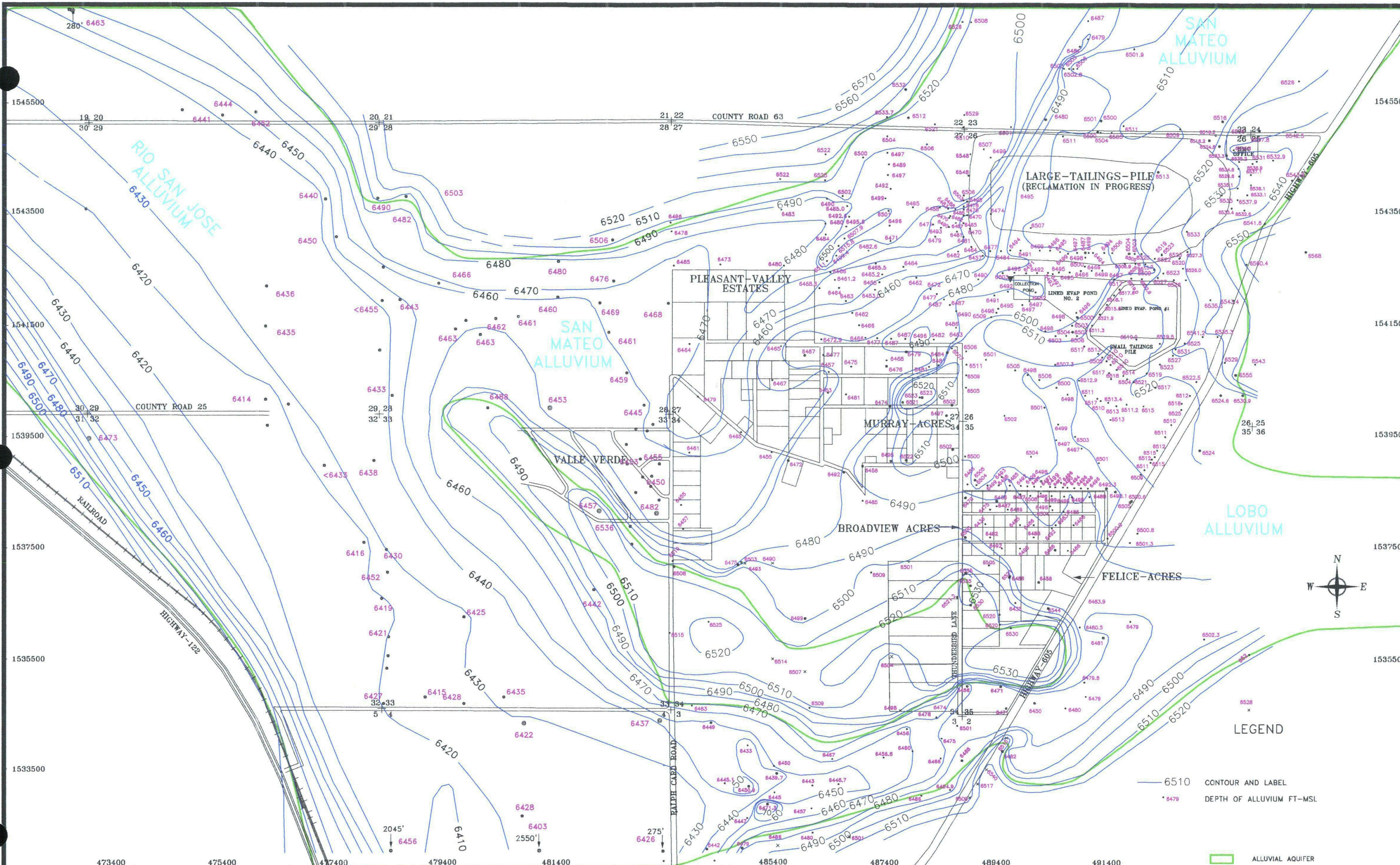
Alluvial water quality data for uranium is presented in Figure 2-10 for 2008. Uranium is selected to present the water quality conditions in the alluvial aquifer because it is the key restoration constituent. The annual report should be reviewed for concentration maps for the other constituents. The green pattern on Figure 2-10 shows where the uranium concentration exceeds 0.16 mg/l, the alluvial site standard. This pattern shows where the alluvial aquifer needs restoration with respect to uranium.



SCALE: 1" = 1600'
C:\PROJECTS\2009-06\PLANFIG1
DATE: 1/6/10

FIGURE 2-1. ALLUVIAL WELL LOCATIONS

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



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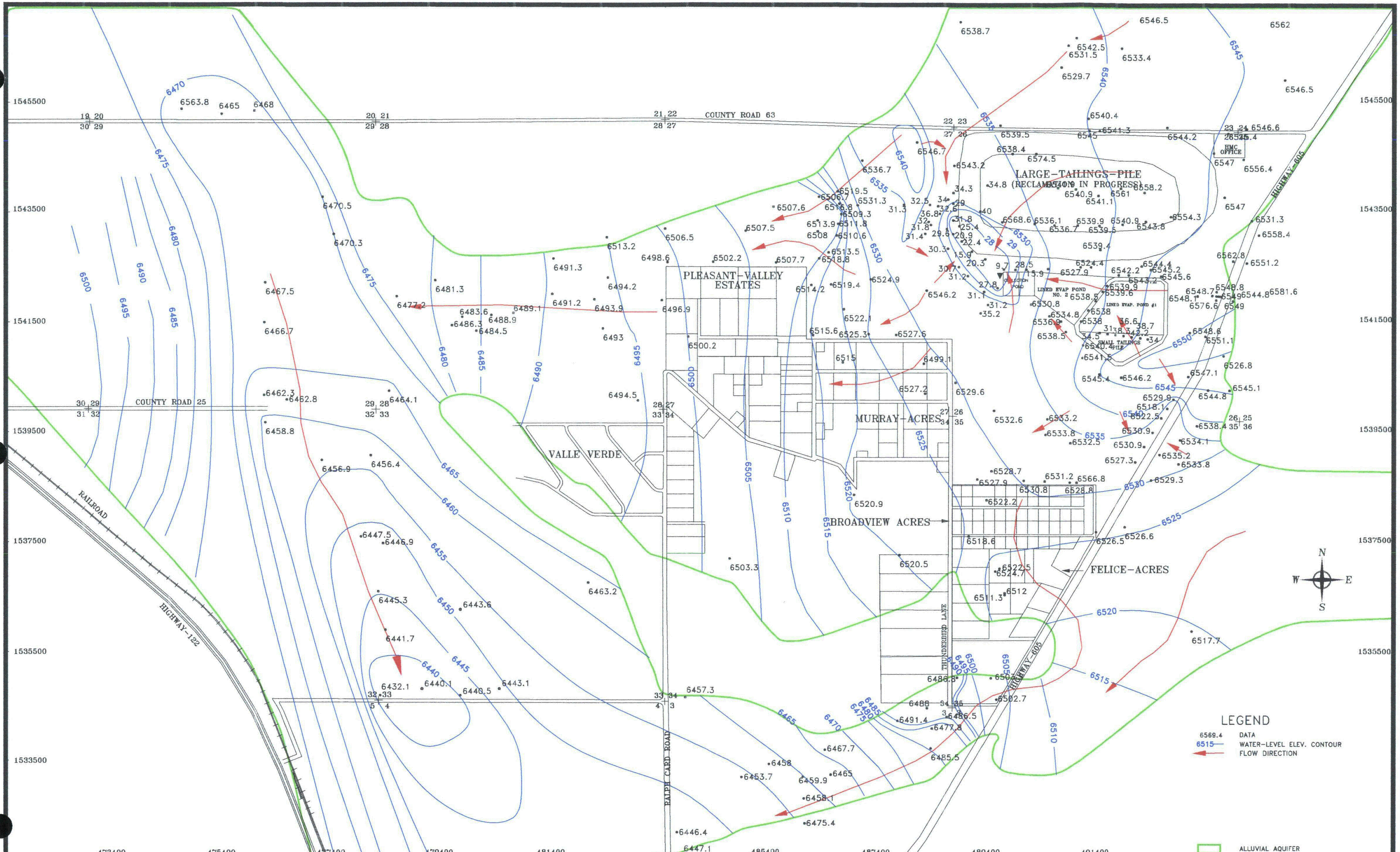
2009-06\1600QAL rts
DATE: 1/6/2010

FIGURE 2-2. ELEVATION OF BASE OF THE ALLUVIUM, FT-MSL

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



SCALE: 1"=1600'
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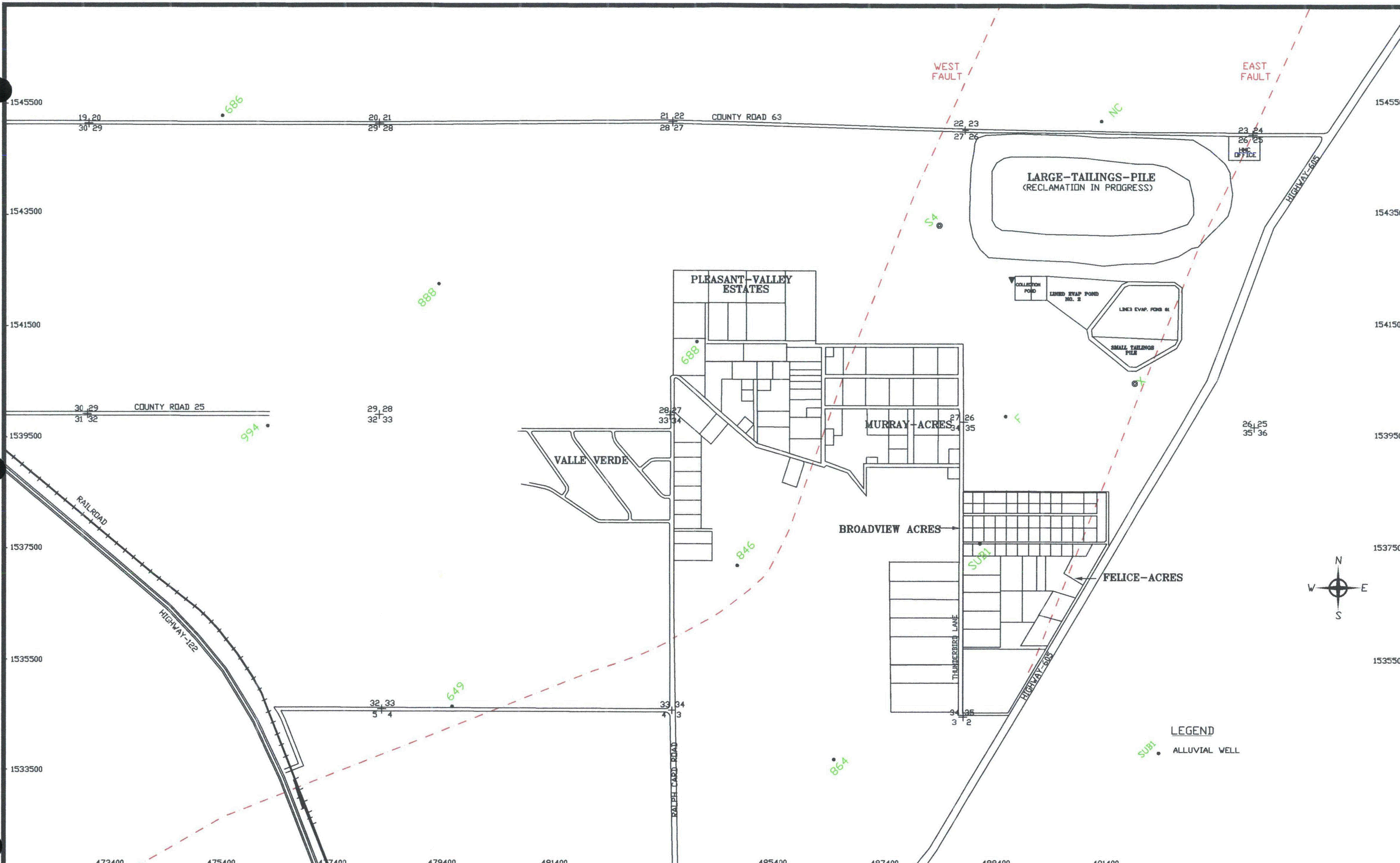
DATE: 1/6/2010

FIGURE 2-3 WATER-LEVEL ELEVATIONS FOR THE ALLUVIAL AQUIFER, 2008, FT-MSL

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



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PERMIT WELLS
DATE: 1/7/10

FIGURE 2-4. LOCATIONS OF ALLUVIAL WELLS USED TO MONITOR WATER-LEVEL CHANGES

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

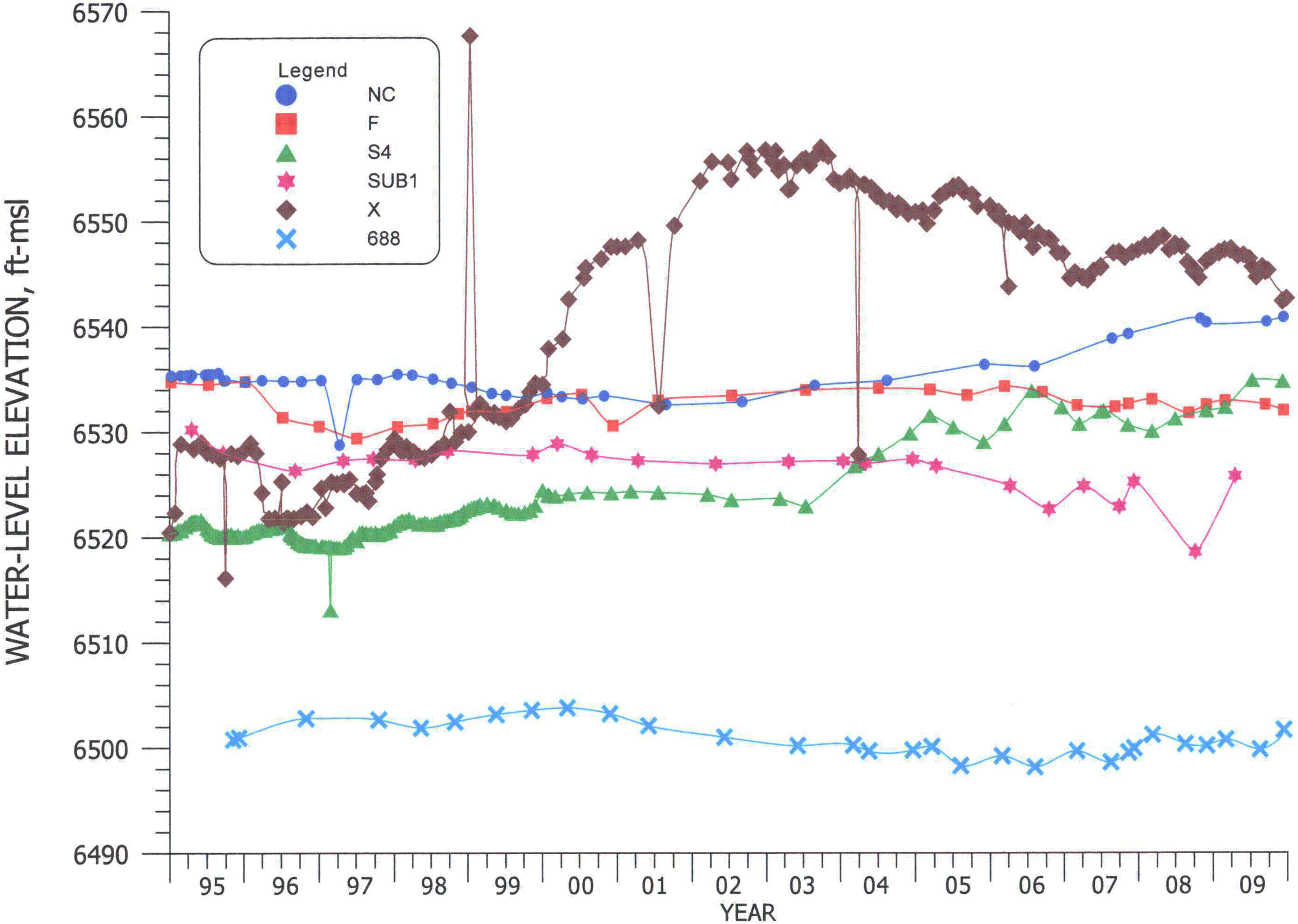

FIGURE 2-5. WATER-LEVEL ELEVATION FOR WELLS NC, F, S4, SUB1, X AND 688, FT-MSL.

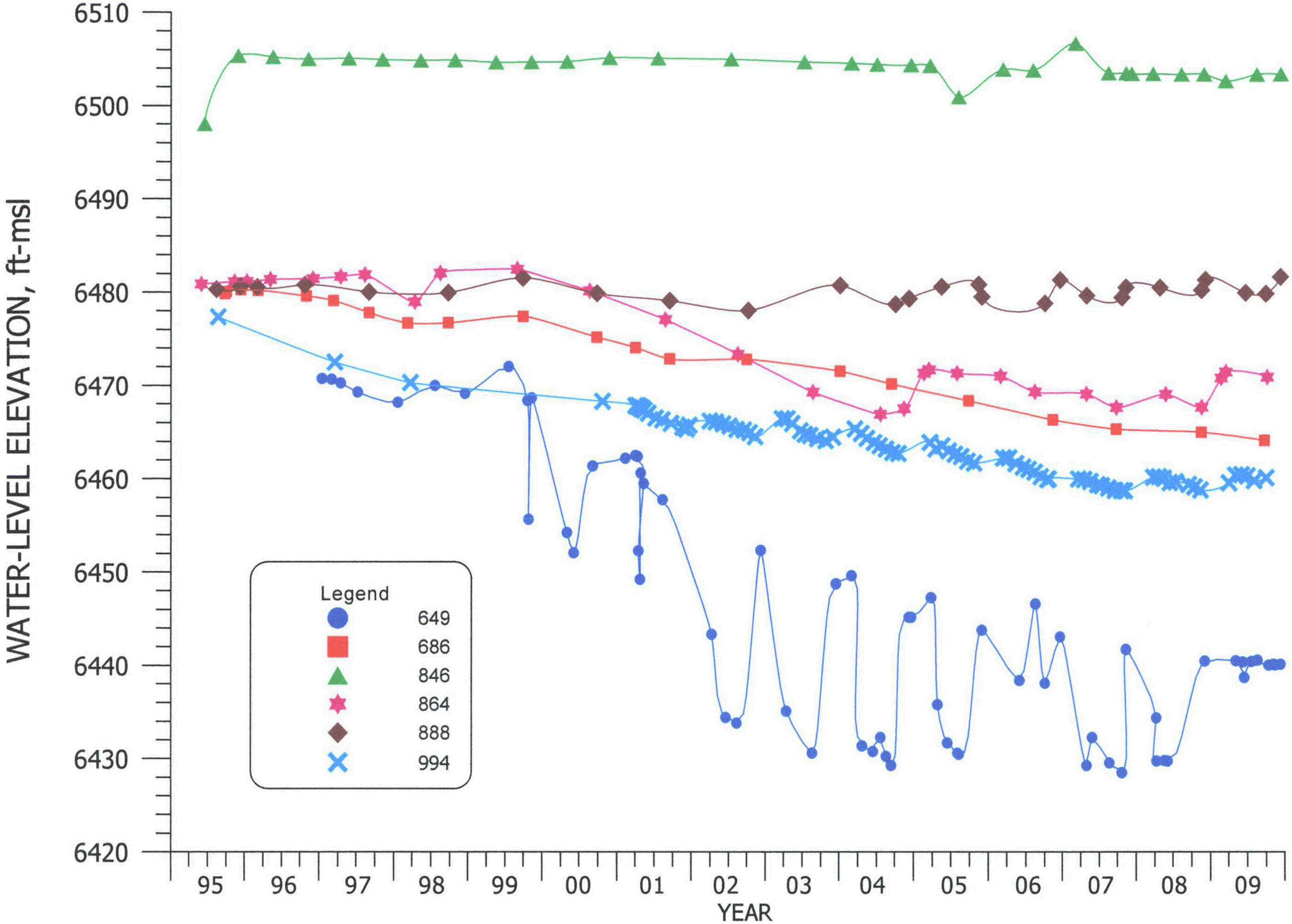

FIGURE 2-6. WATER-LEVEL ELEVATION FOR WELLS 649, 686, 846, 864, 888 AND 994, FT-MSL.

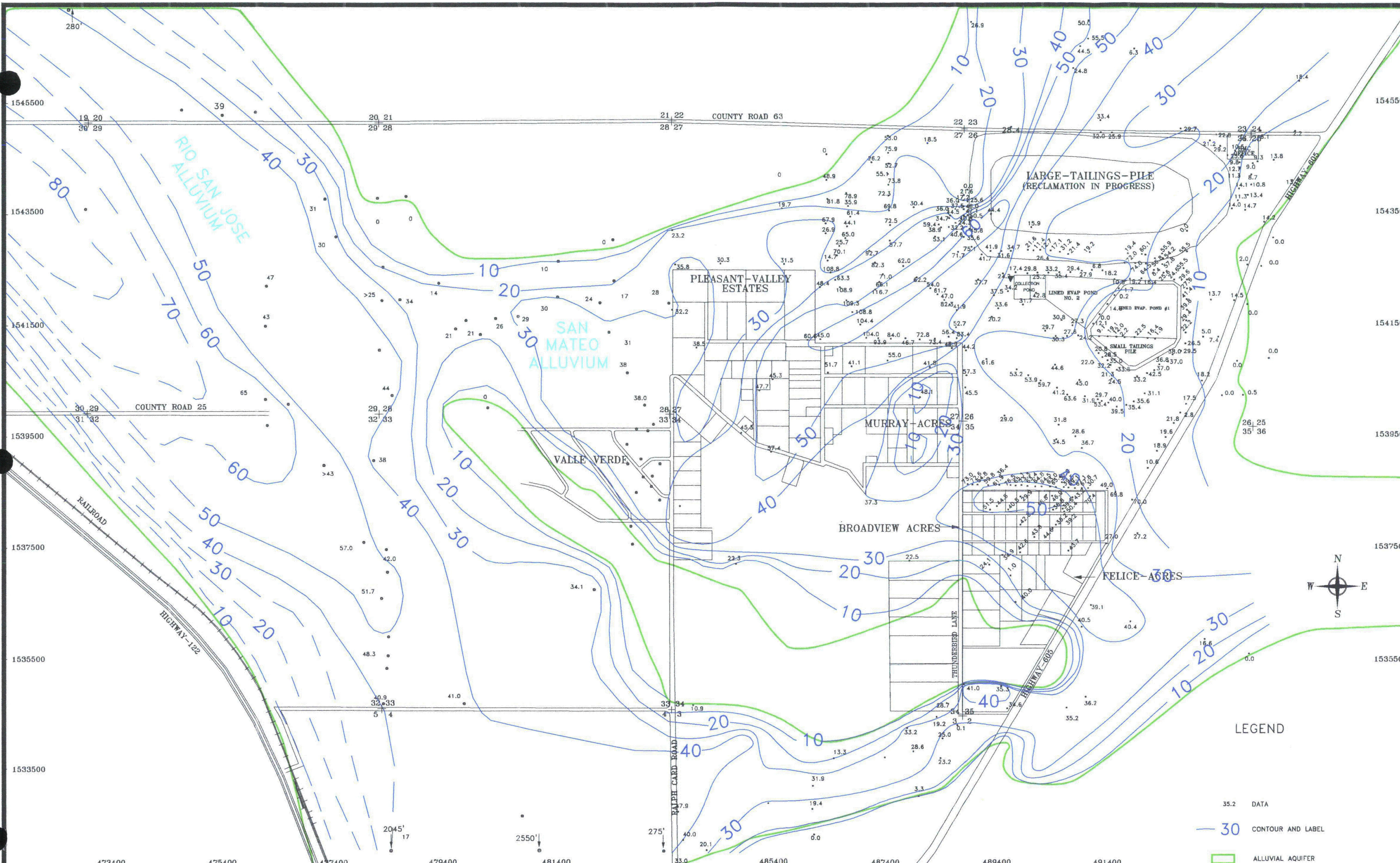

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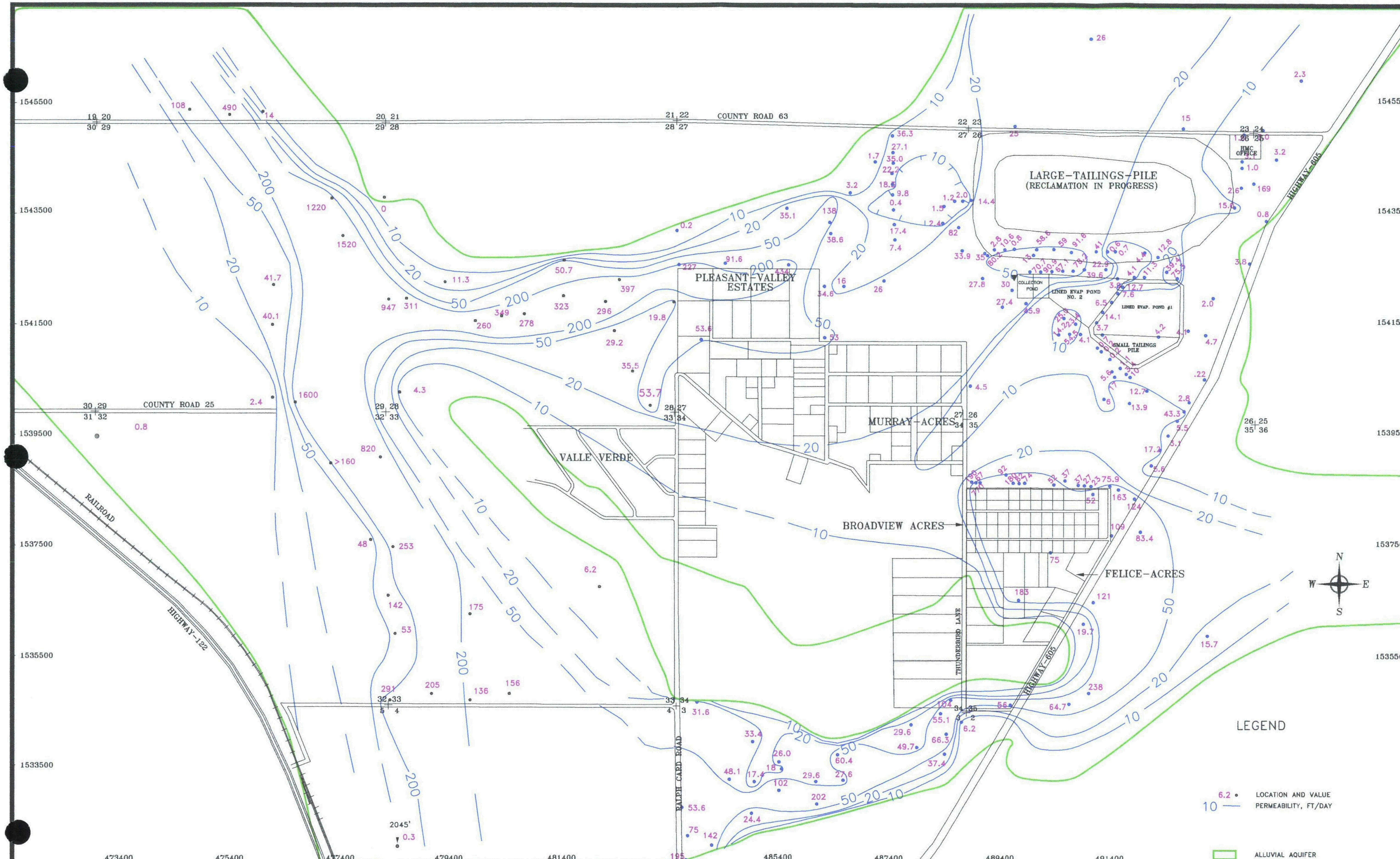
FIGURE 2-7. SATURATED THICKNESS OF THE ALLUVIAL AQUIFER, FEET

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



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DATE: 1/6/2010

FIGURE 2-8. HYDRAULIC CONDUCTIVITY FOR THE ALLUVIAL AQUIFER, FT/DAY

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

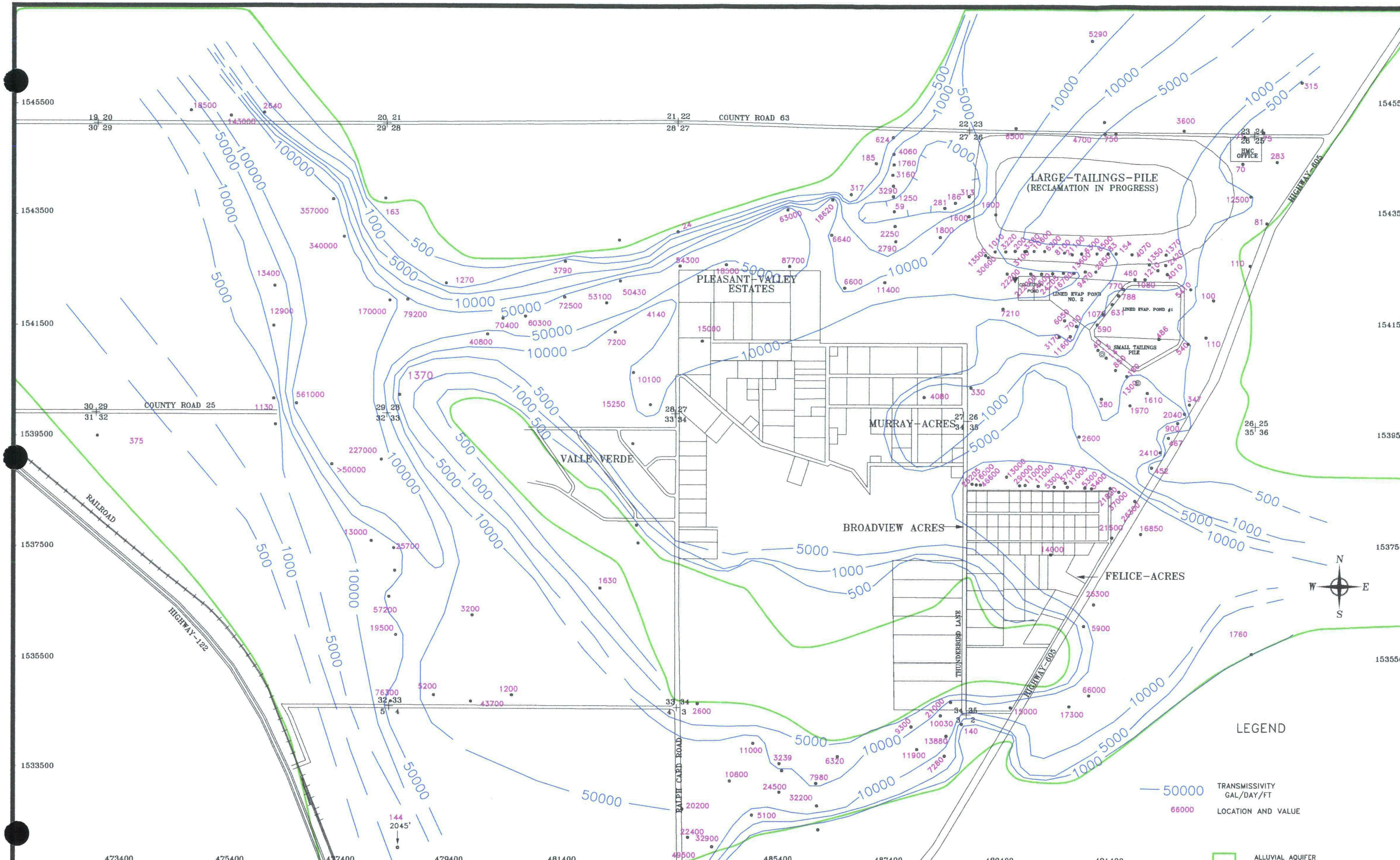

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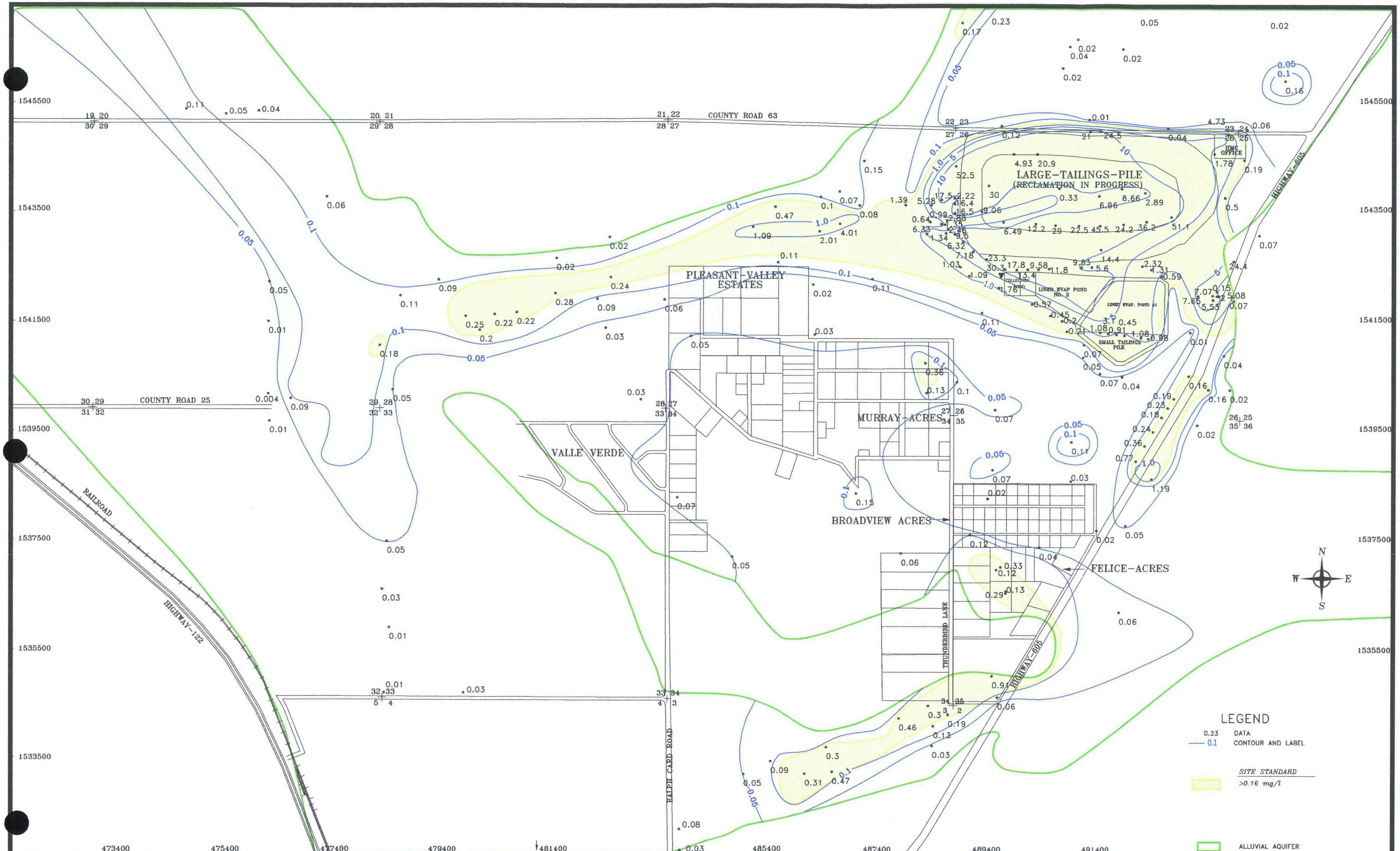
FIGURE 2-9. TRANSMISSIVITY FOR THE ALLUVIAL AQUIFER, GAL/DAY/FT

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



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DATE: 1/6/2010

FIGURE 2-10. URANIUM CONCENTRATIONS OF THE ALLUVIAL AQUIFER, 2008, mg/L

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL WELLS.

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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0690	1540279	493465	65.0	5.0	12/14/2009	38.15	6543.91	2.5	6582.06	55	6524.6 A	25-65	19.3
0691	1540276	493860	66.0	5.0	12/14/2009	44.17	6544.64	2.9	6588.81	55	6530.9 A	26-66	13.7
0891	1540904	493751	54.0	5.0	7/27/2009	33.56	6547.56	2.1	6581.12	50	6529.0 A	24-54	18.5
0892	1540954	494317	50.0	5.0	12/19/2002	41.96	6545.25	2.0	6587.21	42	6543.2 A	30-50	2.0
1A	1543790	493768	61.0	5.0	11/4/2008	38.40	6547.03	2.9	6585.43	47	6535.5 A	39-51	11.5
1B	1544502	494412	51.8	5.0	10/30/2001	38.70	6545.72	1.5	6584.42	50	6532.9 A	20-50	12.8
1C	1545018	494799	52.9	5.0	9/28/2000	43.26	6544.73	2.5	6587.99	43	6542.5 A	34-54	2.2
1D	1544142	494752	42.9	5.0	12/3/2005	26.42	6559.55	2.2	6585.97	40	6543.8 A	22-42	15.8
1E	1544481	494116	51.4	5.0	11/4/2008	27.96	6556.35	2.1	6584.31	43	6539.2 A	34-54	17.1
1F	1544952	493831	61.8	5.0	11/5/2008	42.03	6545.35	1.8	6587.38	54	6531.6 A	30-60	13.8
1G	1545034	494170	57.5	5.0	11/4/2008	40.46	6546.61	2.3	6587.07	48	6536.8 A	35-55	9.8
1H	1543363	494266	55.4	5.0	11/4/2008	55.08	6531.31	1.8	6586.39	43	6541.6 A	25-55	0.0
1I	1542627	493928	49.8	5.0	7/27/2009	35.43	6562.92	1.3	6598.35	35	6562.1 A	27-47	0.8
1J	1541986	493695	50.3	5.0	2/23/2009	38.81	6546.59	2.0	6585.40	40	6543.4 A	30-50	3.2
1K	1541992	493275	55.6	5.0	2/23/2009	36.11	6548.02	1.8	6584.13	47	6535.3 A	30-55	12.7
1L	1541256	493416	53.4	5.0	11/4/2008	27.46	6551.15	3.1	6578.61	40	6535.5 A	35-55	15.6
1M	1541327	493133	43.1	5.0	11/4/2008	26.94	6548.59	1.3	6575.53	33	6541.2 A	25-54	7.4
1N	1543100	494396	45.6	5.0	7/27/2009	32.81	6558.04	2.4	6590.85	25	6563.5 A	15-44	0.0
1O	1542592	494175	44.0	5.0	7/27/2009	43.72	6551.22	0.8	6594.94	29	6565.1 A	14-34	0.0
1P	1541902	493924	52.8	5.0	7/27/2009	37.02	6548.22	2.6	6585.24	35	6547.6 A	20-40	0.6
* A1	1542365	491539	55.6	4.0	1/12/1994	45.29	6527.86	1.1	6573.15	55	6517.1 A	37-57	10.8
* A2	1542356	491539	46.4	4.0	12/23/1991	47.98	6525.42	1.1	6573.40	---	— A	27-47	---
B	1541684	489311	68.6	4.0	1/4/2010	35.85	6535.05	2.4	6570.90	60	6508.5 A	49-69	26.6
B1	1542071	489370	90.9	5.0	12/9/2009	38.55	6533.10	0.6	6571.65	82	6489.1 A	62-82	44.1
B2	1542475	489515	83.0	5.0	10/17/2006	42.08	6532.17	2.0	6574.25	72	6500.3 A	55-75	31.9
B3	1542480	489731	87.0	5.0	7/14/2008	68.00	6506.29	2.6	6574.29	77	6494.7 A	58-78	11.6
B4	1542471	489942	88.8	5.0	7/14/2008	64.98	6509.68	7.4	6574.66	82	6485.3 A	63-83	24.4
B5	1542474	490141	91.0	5.0	7/14/2008	57.60	6515.86	1.4	6573.46	81	6491.1 A	62-82	24.8
B6	1542478	490341	90.0	5.0	12/5/2000	48.94	6528.75	2.0	6577.69	80	6495.7 A	63-83	33.1
B7	1542488	490540	87.0	5.0	7/14/2008	45.88	6528.52	2.2	6574.40	77	6495.2 A	53-78	33.3
B8	1542488	490734	87.0	5.0	6/15/2005	40.30	6535.45	2.3	6575.75	77	6496.5 A	53-78	39.0
B9	1542514	490935	86.0	5.0	6/15/2005	40.03	6536.14	2.2	6576.17	76	6498.0 A	51-78	38.2
B10	1542517	491133	84.8	5.0	7/14/2008	48.91	6527.86	2.3	6576.77	75	6499.5 A	51-78	28.4
B11	1542517	491329	84.9	5.0	7/14/2008	53.00	6524.39	2.2	6577.39	77	6498.2 A	42-80	26.2
B12	1542524	488915	100.0	5.0	12/9/2009	39.91	6533.09	2.2	6573.00	91	6479.8 A	30-100	53.3
B13	1541841	490223	80.0	5.0	12/9/2009	36.47	6531.53	3.1	6568.00	72	6492.9 A	30-80	38.6

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
BA	1541835	489440	86.0	5.0	1/4/2010	39.02	6532.56	1.7	6571.58	76	6493.9 A	64-78	38.7
BB2	1543791	486213	56.6	4.0	11/15/2002	53.36	6520.44	0.6	6573.80	---	— A	42-62	—
BC	1543655	487910	82.8	4.0	12/9/2009	41.00	6533.61	2.6	6574.61	75	6497.0 A	63-83	36.6
BP	1541882	489841	85.4	4.0	8/26/2009	42.10	6530.20	3.0	6572.30	75	6494.3 A	40-85	35.9
* C	1541762	490854	79.7	4.0	5/16/1994	41.50	6529.34	0.3	6570.84	75	6495.5 A	59-79	33.8
C1	1541533	490780	76.0	5.0	7/29/2009	32.80	6539.06	0.8	6571.86	67	6504.1 A	41-68	35.0
C2	1541630	490566	76.0	5.0	7/29/2009	28.00	6537.02	0.9	6565.02	66	6498.1 A	42-67	38.9
* C3	1541344	490481	75.0	5.0	6/20/1994	36.20	6532.33	0.9	6568.53	65	6502.6 A	45-67	29.7
C3R	1541338	490472	75.0	5.0	3/7/2002	18.00	6551.29	2.0	6569.29	66	6501.3 A	43-68	50.0
C4	1541348	490675	75.0	5.0	10/2/2000	39.66	6531.18	1.3	6570.84	66	6503.5 A	46-66	27.6
C5	1541344	490869	72.0	5.0	10/21/2009	32.60	6537.25	0.8	6569.85	62	6507.1 A	43-63	30.2
C6	1541533	491142	80.8	5.0	11/4/2009	48.43	6536.46	1.6	6584.89	72	6511.3 A	34-74	25.2
C7	1541734	491280	72.4	5.0	11/4/2009	48.13	6536.31	1.5	6584.44	61	6521.9 A	25-65	14.4
C8	1541906	491415	78.1	5.0	11/4/2009	47.51	6536.98	1.6	6584.49	67	6515.9 A	31-71	21.1
C9	1542075	491545	77.0	5.0	11/4/2009	46.54	6538.01	1.5	6584.55	65	6518.1 A	27-67	20.0
C10	1542182	491629	71.6	5.0	11/4/2009	47.00	6538.26	2.7	6585.26	65	6517.6 A	30-70	20.7
C11	1542376	491844	68.2	5.0	11/4/2009	47.51	6533.87	2.4	6581.38	60	6519.0 A	35-65	14.9
C12	1542375	492029	63.5	5.0	11/4/2009	38.41	6542.14	2.6	6580.55	55	6523.0 A	34-64	19.2
C13	1541394	490655	63.0	5.0	11/9/2005	30.00	6540.01	2.0	6570.01	63	6505.0 A	36-70	35.0
C14	1541413	490713	63.0	5.0	11/9/2005	29.95	6539.74	2.0	6569.69	63	6504.7 A	36-70	35.0
* D	1542127	490118	89.7	4.0	7/28/1986	48.04	6524.85	0.8	6572.89	90	6482.1 A	71-91	42.8
D1	1542140	489615	89.4	4.0	7/13/2009	39.30	6531.60	1.0	6570.90	80	6489.9 A	58-90	41.7
D2	1542641	492107	70.0	5.0	11/29/1999	0.50	6579.67	3.0	6580.17	62	6515.2 A	40-70	64.5
D3	1542646	491917	80.0	5.0	11/29/1999	0.50	6579.63	2.5	6580.13	72	6505.6 A	40-80	74.0
D4	1542652	491724	78.0	5.0	11/29/1999	0.50	6578.93	2.5	6579.43	70	6506.9 A	48-78	72.0
DA	1542864	489488	99.1	5.0	12/4/1997	61.40	6524.15	3.0	6585.55	90	6492.6 A	50-100	31.6
DA2	1542881	489656	82.1	5.0	1/13/1995	51.11	6536.18	2.8	6587.29	83	6501.5 A	64-74	34.7
DA3	1542664	489390	81.0	5.0	7/14/2008	54.10	6520.26	2.6	6574.36	72	6499.8 A	30-81	20.5
DA4	1542598	489756	81.0	5.0	6/26/2002	76.50	6497.47	1.7	6573.97	71	6501.3 A	31-81	0.0
DAA	1542733	492411	62.7	5.0	12/5/2000	2.00	6578.60	2.2	6580.60	54	6524.4 A	30-60	54.2
DAB	1542633	492399	65.1	5.0	12/5/2000	0.50	6579.38	2.3	6579.88	56	6521.6 A	30-60	57.8
DAC	1543218	492851	67.7	5.0	---	---	---	4.1	6620.36	45	6571.3 A	20-30	—
DB	1542874	489842	73.2	5.0	9/8/1998	66.15	6523.33	0.5	6589.48	---	— A	55-85	—
DBR	1542877	489855	55.6	5.0	1/25/1995	52.19	6536.97	4.8	6589.16	—	— A	-	—
DC	1543646	487060	64.1	4.0	12/9/2009	38.94	6532.37	2.7	6571.31	---	— A	45-65	---
DD	1546989	488943	78.5	4.0	9/21/2009	52.76	6539.83	1.9	6592.59	83	6507.7 A	40-80	32.1

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
DE	1542877	490193	70.2	5.0	10/5/1998	63.70	6527.65	0.8	6591.35	80	6510.6 A	60-90	17.1
DF	1542839	490869	88.5	5.0	5/23/2002	65.06	6525.53	0.6	6590.59	—	— A	65-95	—
DG	1542839	491157	88.9	5.0	5/23/2002	59.80	6531.98	0.4	6591.78	—	— A	65-95	—
DH	1542835	491365	61.7	5.0	12/24/1991	52.65	6538.69	4.8	6591.34	—	— A	65-95	—
DI	1542821	491788	86.1	5.0	12/9/1997	57.87	6531.75	2.3	6589.62	75	6512.3 A	35-85	19.4
DIA	1542821	491793	—	4.0	12/23/1991	50.41	6543.22	1.4	6593.63	—	— A	-	—
DJ	1542821	491793	85.7	5.0	8/24/1988	46.87	6542.69	0.7	6589.56	75	6513.9 A	35-85	28.8
DK	1542799	492094	65.4	5.0	12/23/1991	43.58	6542.33	0.7	6585.91	55	6530.2 A	35-55	12.1
DL	1542813	492398	64.4	5.0	12/5/2000	2.00	6582.87	2.9	6584.87	55	6527.0 A	35-55	55.9
DM	1542628	490035	62.8	5.0	12/14/2000	52.00	6523.08	3.0	6575.08	—	— A	-	—
DN	1542776	490020	66.7	4.0	12/14/2000	51.52	6525.14	3.7	6576.66	—	— A	-	—
DNR	1542779	490031	79.7	4.0	12/5/2000	51.80	6525.26	3.3	6577.06	—	— A	-	—
DO	1542874	490049	75.8	5.0	12/5/2000	65.20	6525.13	1.6	6590.33	75	6513.7 A	65-75	11.4
DP	1542754	491012	79.8	5.0	6/26/2002	53.46	6526.25	3.5	6579.71	—	— A	-	—
DQ	1542592	491006	85.3	5.0	7/11/2002	48.10	6528.33	2.2	6576.43	—	— A	-	—
DR	1542884	489966	87.8	5.0	12/5/2000	66.05	6524.78	2.7	6590.83	85	6503.1 A	65-85	21.6
DS	1542876	490118	87.0	5.0	8/2/1999	65.22	6523.59	0.9	6588.81	77	6510.9 A	62-77	12.7
DT	1542871	489293	72.3	5.0	12/5/2000	59.80	6524.01	2.7	6583.81	99	6482.1 A	59-99	41.9
DU	1542879	490380	84.6	5.0	7/6/1988	51.56	6539.51	1.8	6591.07	81	6508.3 A	61-81	31.2
DV	1542826	490702	80.0	5.0	8/28/2006	54.64	6530.96	2.9	6585.60	77	6505.7 A	60-80	25.3
DW	1542818	492029	73.4	5.0	12/5/2000	2.50	6586.16	3.6	6588.66	59	6526.1 A	45-60	60.1
DX	1542838	491074	90.0	6.0	8/2/1999	61.80	6530.18	1.0	6591.98	80	6511.0 A	60-90	19.2
DY	1542737	492271	65.7	5.0	12/5/2000	1.50	6579.11	2.3	6580.61	56	6522.3 A	15-65	56.8
DZ	1542834	491501	81.8	5.0	1/4/2010	49.83	6540.70	2.2	6590.53	—	— A	-	—
E	1540553	490187	61.7	4.0	12/5/2000	2.00	6566.94	1.7	6568.94	60	6507.2 A	44-64	59.7
EE	1542853	490523	91.2	5.0	1/31/1995	45.26	6542.85	0.6	6588.11	80	6507.5 A	50-90	35.3
F	1539908	489554	63.8	4.0	12/14/2009	32.76	6532.06	1.2	6564.82	62	6501.6 A	45-65	30.4
FB	1540417	488857	62.0	4.0	9/14/2009	35.00	6530.66	2.0	6565.66	58	6505.7 A	43-58	25.0
* FF	1542878	490017	—	4.0	6/21/1983	41.08	6535.46	0.2	6576.54	124	6452.3 A	52-132	83.1
G	1538672	488890	78.3	4.0	12/13/2004	4.00	6559.09	2.0	6563.09	75	6486.1 A	50-80	73.0
GA	1538657	489255	—	4.0	12/9/2009	35.33	6527.46	1.8	6562.79	62	6499.0 A	45-65	28.5
GB	1538654	489456	65.2	4.0	4/3/2000	4.00	6558.99	1.9	6562.99	64	6497.1 A	45-65	61.9
GC	1538650	489654	—	4.0	12/11/2003	33.82	6531.35	2.5	6565.17	78	6484.7 A	60-80	46.7
GD	1538646	489855	—	4.0	12/4/1995	0.50	6565.12	1.8	6565.62	72	6491.8 A	55-75	73.3
GE	1538637	489972	117.0	4.0	12/11/2003	34.61	6531.66	2.4	6566.27	65	6498.9 A	50-120	32.8
GF	1538632	490097	119.2	4.0	12/9/2009	36.75	6529.26	1.8	6566.01	67	6497.2 A	50-120	32.1

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
GG	1538662	489055	58.7	4.0	4/3/2000	4.00	6559.13	1.8	6563.13	57	6504.3 A	48-68	54.8
GH	1538807	489509	69.2	4.0	12/9/2009	34.48	6528.28	1.3	6562.76	67	6494.5 A	55-65	33.8
GI	1538631	490218	119.0	4.0	4/3/2000	4.00	6561.85	1.5	6565.85	67	6497.4 A	50-120	64.5
GJ	1538629	490382	119.2	4.0	4/3/2000	4.00	6562.15	2.0	6566.15	65	6499.2 A	50-120	63.0
GK	1538622	490482	115.7	4.0	12/9/2009	36.10	6530.66	2.4	6566.76	67	6497.4 A	50-120	33.3
GL	1538614	490701	119.3	4.0	4/3/2000	4.00	6563.15	2.1	6567.15	71	6494.1 A	50-120	69.1
GM	1538605	490824	118.2	4.0	4/3/2000	4.00	6563.65	2.1	6567.65	69	6496.6 A	50-120	67.1
GN	1538602	490944	116.5	4.0	7/22/2009	36.68	6531.29	1.8	6567.97	70	6496.2 A	50-120	35.1
GO	1538663	488973	122.3	4.0	4/3/2000	4.00	6559.00	1.6	6563.00	75	6486.4 A	50-120	72.6
GP	1538649	489752	121.4	4.0	12/5/2000	5.00	6559.87	2.1	6564.87	68	6494.8 A	50-120	65.1
GQ	1538599	491067	70.0	4.0	12/9/2009	1.70	6566.46	0.9	6568.16	71	6496.3 A	50-70	70.2
GR	1538619	490619	85.0	4.0	12/23/1991	36.55	6528.66	1.0	6565.21	75	6489.2 A	50-85	39.5
GS	1538597	491408	86.4	5.0	12/5/2000	33.00	6541.31	2.0	6574.31	80	6492.3 A	50-85	49.0
GT	1538534	491565	84.0	5.0	12/5/2000	8.30	6567.87	2.1	6576.17	76	6498.1 A	60-84	69.8
GU	1538367	491854	80.0	5.0	3/7/2002	15.00	6560.65	2.0	6575.65	73	6500.7 A	60-80	60.0
GV	1537701	491428	83.0	5.0	12/9/2009	51.08	6526.30	2.5	6577.38	74	6500.9 A	62-82	25.4
GW1	1539755	490530	73.0	5.0	12/9/2009	33.25	6532.02	1.0	6565.27	65	6499.3 A	48-73	32.8
GW2	1539471	490497	75.0	5.0	12/9/2009	34.35	6531.73	1.0	6566.08	68	6497.1 A	47-75	34.7
GW3	1539532	490835	72.0	5.0	5/4/1993	34.42	6531.86	1.0	6566.28	62	6503.3 A	45-72	28.6
H	1538703	490582	69.3	4.0	12/23/1991	37.93	6528.65	1.8	6566.58	69	6495.8 A	50-70	32.9
I	1539319	490954	70.0	4.0	6/22/2009	33.39	6533.81	1.6	6567.20	68	6497.6 A	52-72	36.2
J	1540174	491302	65.6	4.0	12/5/2000	6.00	6564.19	3.4	6570.19	56	6510.8 A	46-68	53.4
J1	1540082	491585	57.0	6.0	12/5/2000	18.80	6553.05	3.8	6571.85	55	6513.1 A	50-57	40.0
J2	1540271	491013	58.0	6.0	12/5/2000	26.00	6544.19	2.9	6570.19	55	6512.3 A	50-58	31.9
J3	1540414	490499	70.0	6.0	12/5/2000	27.40	6541.74	2.6	6569.14	66	6500.5 A	43-70	41.2
J4	1540643	489974	80.0	6.0	12/5/2000	18.00	6551.52	3.9	6569.52	68	6497.6 A	40-70	53.9
J5	1540728	489747	65.0	6.0	12/5/2000	10.55	6559.24	2.8	6569.79	61	6506.0 A	50-65	53.2
J6	1540919	489221	67.0	6.0	12/5/2000	7.10	6563.00	3.7	6570.10	65	6501.4 A	48-67	61.6
J7	1540168	491892	61.9	5.0	12/5/2000	19.50	6550.88	2.1	6570.38	53	6515.3 A	40-60	35.6
J8	1540318	492064	63.2	5.0	12/5/2000	23.30	6547.49	2.4	6570.79	52	6516.4 A	35-61	31.1
J9	1540101	491759	68.0	5.0	12/5/2000	24.60	6546.60	2.0	6571.20	58	6511.2 A	36-68	35.4
J10	1540138	491436	66.0	5.0	12/5/2000	18.00	6552.91	3.5	6570.91	36	6531.4 A	66-	21.5
J11	1540545	490909	66.0	5.0	12/5/2000	12.00	6557.86	2.0	6569.86	55	6512.9 A	36-66	45.0
J12	1540827	490466	70.0	5.0	12/5/2000	18.44	6551.86	3.0	6570.30	60	6507.3 A	40-70	44.6
J13	1540451	492218	55.0	5.0	2/5/2002	4.00	6564.40	1.8	6568.40	46	6520.6 A	15-55	43.8
J14	1540585	492367	55.0	5.0	2/5/2002	12.90	6556.08	1.7	6568.98	44	6523.3 A	15-55	32.8

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
J15	1540719	492521	55.0	4.0	2/5/2002	3.10	6566.53	2.2	6569.63	46	6521.4 A	15-55	45.1
JC	1540215	491240	60.0	5.0	12/5/2000	22.10	6546.34	1.8	6568.44	50	6516.6 A	35-55	29.7
K	1540730	491590	61.7	4.0	8/12/2002	2.00	6571.51	3.8	6573.51	60	6509.7 A	44-64	61.8
K2	1540736	491587	58.9	4.0	7/19/2005	19.40	6552.81	2.5	6572.21	58	6511.7 A	46-56	41.1
K3	1540744	491571	56.7	2.0	7/19/2005	19.10	6551.57	1.3	6570.67	---	— A	53-58	—
K4	1541211	492371	86.2	5.0	10/6/2009	81.40	6520.62	2.5	6602.02	80	6519.5 A	65-85	1.1
K5	1541269	491935	86.4	5.0	10/6/2009	52.79	6548.94	2.8	6601.73	80	6518.9 A	55-85	30.0
K6	1540689	491459	58.0	5.0	3/6/2002	13.00	6557.07	2.0	6570.07	---	— A	33-58	—
K7	1541232	492237	86.0	5.0	10/6/2009	65.24	6536.29	2.0	6601.53	79	6520.5 A	56-86	15.8
K8	1541250	492081	86.0	5.0	10/6/2009	58.22	6542.27	2.0	6600.49	78	6520.5 A	66-86	21.8
K9	1541287	491787	86.0	5.0	10/6/2009	65.48	6534.86	2.0	6600.34	79	6519.3 A	56-86	15.5
K10	1541305	491638	87.0	5.0	10/6/2009	76.60	6524.21	2.0	6600.81	81	6517.8 A	47-87	6.4
K11	1541325	491490	84.0	5.0	10/6/2009	73.70	6526.91	2.0	6600.61	78	6520.6 A	64-84	6.3
KA	1540959	491331	67.8	5.0	8/12/2002	13.00	6559.19	1.9	6572.19	65	6505.3 A	42-72	53.9
KB	1540893	491406	61.8	5.0	8/12/2002	0.60	6571.05	0.8	6571.65	60	6510.9 A	40-70	60.2
KC	1540826	491477	68.6	5.0	8/12/2002	0.50	6569.81	0.7	6570.31	59	6510.6 A	42-72	59.2
KD	1540627	491701	62.1	5.0	8/12/2002	1.10	6569.12	0.6	6570.22	---	— A	40-70	—
KE	1540566	491776	60.8	5.0	8/12/2002	9.10	6563.18	2.5	6572.28	---	— A	40-70	—
KEB	1540570	491487	59.9	5.0	7/20/2009	25.21	6544.52	1.5	6569.73	50	6518.2 A	40-60	26.3
KF	1540870	491169	63.5	5.0	7/20/2009	28.49	6541.72	2.2	6570.21	50	6518.0 A	30-60	23.7
KM	1540671	491444	52.4	5.0	3/6/2002	12.20	6557.57	2.2	6569.77	---	— A	-	—
KN	1540734	491492	50.1	5.0	10/11/2002	8.36	6561.23	2.3	6569.59	---	— A	-	—
KZ	1541100	491183	58.4	5.0	1/4/2010	33.12	6538.60	1.2	6571.72	---	— A	-	—
L	1538970	492150	67.0	4.0	10/6/2009	50.13	6524.84	0.8	6574.97	59	6515.2 A	46-66	9.7
L5	1539946	492730	60.2	5.0	10/6/2009	28.00	6548.07	1.3	6576.07	50	6524.8 A	25-55	23.3
L6	1540526	493110	51.1	5.0	10/6/2009	28.31	6546.33	2.1	6574.64	50	6522.5 A	25-55	23.8
L7	1540113	492842	67.8	5.0	10/6/2009	65.00	6511.61	2.3	6576.61	62	6512.3 A	36-66	0.0
L8	1539773	492621	73.9	5.0	10/6/2009	51.00	6525.49	2.1	6576.49	65	6509.4 A	32-72	16.1
L9	1539509	492463	74.9	5.0	10/6/2009	42.06	6535.17	2.2	6577.23	64	6511.0 A	43-73	24.1
L10	1539250	492310	74.2	5.0	10/6/2009	46.81	6530.02	2.0	6576.83	63	6511.8 A	53-73	18.2
M1	1542797	489157	103.4	4.0	1/3/1989	79.80	6505.17	1.5	6584.97	120	6463.5 A	66-106	41.7
M2	1542785	489159	40.4	4.0	1/20/1995	34.85	6541.41	1.4	6576.26	---	— A	-	---
M3	1542805	489151	105.3	4.0	7/14/2008	60.23	6515.87	1.0	6576.10	---	— A	79-99	---
M4	1542804	489134	81.8	5.0	10/31/2000	56.72	6521.54	3.7	6578.26	---	— A	78-82	—
M5	1542360	489080	92.3	5.0	12/9/2009	42.02	6533.32	3.2	6575.34	84	6488.1 A	60-90	45.2
M6	1543097	486674	110.0	5.0	12/9/2009	62.16	6512.88	2.2	6575.04	65	6507.9 A	60-110	5.0

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
M7	1542790	486523	83.0	5.0	12/9/2009	57.91	6514.94	2.4	6572.85	71	6499.4 A	63-83	15.5
M8	1542960	486567	83.0	5.0	9/5/2000	33.71	6541.52	2.4	6575.23	57	6515.8 A	53-83	25.7
M9	1543310	486699	103.0	5.0	12/9/2009	63.21	6513.60	3.2	6576.81	78	6495.6 A	63-103	18.0
M10	1543677	486723	88.0	5.0	12/9/2009	61.20	6512.16	2.4	6573.36	86	6485.0 A	58-88	27.2
M11	1542358	486486	118.0	5.0	12/8/2003	53.98	6519.24	3.0	6573.22	109	6461.2 A	58-118	58.1
M12	1542174	487209	124.0	5.0	12/5/2000	3.87	6569.64	2.5	6573.51	118	6453.0 A	57-124	116.7
M13	1542450	487336	117.0	5.0	12/5/2000	29.81	6546.35	3.0	6576.16	108	6465.2 A	57-117	81.2
M14	1542661	487216	117.0	5.0	12/5/2000	29.42	6547.75	2.7	6577.17	109	6465.5 A	57-117	82.3
M15	1542872	487094	102.0	5.0	12/5/2000	3.71	6575.37	3.5	6579.08	93	6482.6 A	52-102	92.7
MA	1541290	487767	85.0	4.0	12/9/2009	42.40	6529.82	1.0	6572.22	85	6486.2 A	70-85	43.6
MB	1541296	487512	90.0	4.0	9/5/2000	2.05	6570.01	1.0	6572.06	85	6486.1 A	60-90	84.0
MC	1541304	487264	100.0	4.0	12/9/2009	45.06	6527.00	1.0	6572.06	95	6476.1 A	70-100	50.9
MD	1541311	487050	105.0	4.0	9/5/2000	2.00	6569.46	1.0	6571.46	105	6465.5 A	75-105	104.0
ME	1541537	486934	105.0	4.0	9/5/2000	1.61	6569.31	1.0	6570.92	105	6464.9 A	75-105	104.4
MF	1541757	486808	110.0	4.0	12/9/2009	48.43	6523.85	1.0	6572.28	110	6461.3 A	90-110	62.6
MG	1541972	486694	110.0	4.0	9/5/2000	1.72	6571.36	1.0	6573.08	110	6462.1 A	90-110	109.3
MH	1542208	486569	110.0	4.0	12/9/2009	52.75	6521.17	1.0	6573.92	110	6462.9 A	90-110	58.3
MI	1542486	486413	110.0	4.0	9/5/2000	2.24	6574.03	1.0	6576.27	110	6465.3 A	90-110	108.8
MJ	1542682	486350	60.0	4.0	12/9/2009	54.07	6518.87	1.8	6572.94	60	6511.1 A	40-60	7.7
MK	1543373	486324	57.0	4.5	12/3/2008	59.90	6513.89	1.5	6573.79	92	6480.3 A	-	33.6
ML	1543902	486691	76.0	5.0	12/9/2009	50.29	6522.41	2.3	6572.70	80	6490.4 A	56-76	32.0
MM	1544154	486324	63.0	5.0	9/5/2000	3.46	6573.99	2.4	6577.45	50	6525.1 A	33-63	48.9
MN	1544613	486325	63.0	5.0	12/18/1996	64.15	6513.41	1.9	6577.56	42	6533.7 A	23-63	0.0
MO	1543620	485518	88.0	4.5	12/10/2009	63.48	6509.41	2.0	6572.89	80	6490.9 A	45-85	18.5
MP	1544164	485492	80.0	5.0	12/18/1996	62.66	6511.82	2.1	6574.48	50	6522.4 A	33-63	0.0
MQ	1543173	486326	98.0	5.0	12/9/2009	64.24	6510.06	1.6	6574.30	88	6484.7 A	58-98	25.4
MR	1542609	483574	100.0	5.0	12/10/2009	65.97	6500.29	1.8	6566.26	100	6464.5 A	54-94	35.8
MS	1542607	485570	82.0	5.0	12/10/2009	61.25	6509.42	1.5	6570.67	89	6480.2 A	52-82	29.3
MT	1543221	483531	98.0	4.5	10/14/2009	55.04	6512.39	2.3	6567.43	87	6478.1 A	34-94	34.3
MU	1544461	487143	80.0	5.0	12/9/2009	37.20	6536.99	1.5	6574.19	72	6500.7 A	50-80	36.3
MV	1542618	484418	105.0	4.5	12/8/2008	67.55	6502.23	1.3	6569.78	95	6473.5 A	75-105	28.7
MW	1543802	486346	85.0	5.0	12/9/2009	65.91	6509.00	1.9	6574.91	83	6490.0 A	35-85	19.0
MX	1541287	486244	103.0	5.0	12/14/2009	52.00	6516.61	1.7	6568.61	94	6472.9 A	63-103	43.7
MY	1542200	486213	112.0	5.0	12/14/2009	57.26	6516.30	3.0	6573.56	102	6468.6 A	72-112	47.7
MZ	1543485	486757	92.0	5.0	12/9/2009	65.49	6511.15	0.0	6576.64	84	6492.6 A	60-92	18.5
N	1545101	489665	92.0	4.0	11/3/2008	44.48	6539.49	0.9	6583.97	80	6503.1 A	54-94	36.4

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
NA	1545000	491488	91.4	5.0	10/28/2008	49.67	6541.31	1.1	6590.98	80	6509.9 A	50-90	31.4
NB	1545000	491296	96.4	5.0	10/28/2008	48.31	6544.99	3.5	6593.30	80	6509.8 A	50-90	35.2
NC	1545220	491282	95.0	4.0	12/14/2009	44.91	6540.92	0.8	6585.83	85	6500.0 A	65-95	40.9
ND	1545927	494872	70.0	4.0	9/21/2009	45.70	6547.19	1.1	6592.89	65	6526.8 A	50-70	20.4
NE5	1544279	492332	156.8	5.0	4/3/2007	57.00	6610.00	3.2	6667.00	150	— T	50-110	—
										150	6513.8 A	135-155	96.2
NW5	1544408	489433	149.8	5.0	5/29/2007	42.72	6614.86	2.7	6657.58	155	— T	39-79	—
										155	6499.9 A	119-159	115.0
O	1545060	492725	69.9	4.0	10/28/2008	43.61	6544.22	1.3	6587.83	77	6509.5 A	40-70	34.7
P	1546691	491058	109.1	4.0	9/15/2009	47.88	6539.38	1.7	6587.26	107	6478.6 A	82-112	60.8
P1	1547017	491060	105.0	6.0	11/28/2000	55.75	6536.72	0.8	6592.47	105	6486.7 A	60-105	50.1
P2	1546555	490912	105.0	6.0	3/6/2009	60.18	6529.61	0.9	6589.79	105	6483.9 A	60-105	45.7
P3	1546159	490785	95.0	5.0	12/10/2009	49.24	6540.71	2.2	6589.95	85	6502.8 A	55-95	38.0
P4	1546504	491899	92.0	5.0	12/10/2009	47.76	6541.76	3.6	6589.52	84	6501.9 A	52-92	39.8
PM	1541426	490292	81.9	4.0	1/12/2004	12.33	6555.09	1.8	6567.42	—	— A	-	—
Q	1548693	492153	98.3	4.0	10/12/2009	47.03	6546.79	2.3	6593.82	100	6491.5 A	72-102	55.3
R	1550372	494514	85.0	4.0	10/12/2009	41.70	6562.33	0.3	6604.03	95	6508.7 A	60-90	53.6
S	1543871	488816	72.2	4.0	12/9/2009	44.11	6537.06	2.0	6581.17	75	6504.2 A	52-72	32.9
S1	1543288	488401	85.0	2.0	9/28/2009	40.97	6534.22	5.3	6575.19	85	6484.9 A	60-85	49.3
S2	1543127	488299	100.0	3.0	1/4/2010	39.75	6533.97	2.0	6573.72	100	6471.7 A	90-100	62.3
S3	1542857	488714	122.6	5.0	12/9/2009	41.98	6532.80	6.2	6574.78	116	6452.6 A	80-120	80.2
S4	1543344	488359	112.4	5.0	12/9/2009	40.48	6534.81	2.3	6575.29	108	6465.0 A	50-110	69.8
S5	1543269	488923	115.0	5.0	1/4/2010	46.54	6528.15	1.0	6574.69	105	6468.7 A	54-106	59.5
S6	1543515	488874	113.2	5.0	1/3/2000	55.85	6524.22	1.3	6580.07	105	6473.8 A	55-105	50.5
S7	1543763	488874	97.0	5.0	1/4/1999	57.38	6522.51	1.0	6579.89	82	6496.9 A	40-84	25.6
S8	1543968	488879	43.8	5.0	8/22/1995	43.28	6537.06	1.0	6580.34	40	6539.3 A	12-42	0.0
S11	1544793	488150	76.2	5.0	12/9/2009	32.57	6545.82	1.9	6578.39	70	6506.5 A	48-78	39.3
S12	1543297	488628	93.0	5.0	12/9/2009	26.30	6552.55	2.1	6578.85	80	6496.7 A	53-93	55.8
SA	1543122	488811	123.7	5.0	6/29/2009	45.77	6534.54	1.0	6580.31	115	6464.3 A	100-130	70.2
SB	1543371	488811	125.0	5.0	2/23/2009	48.50	6532.59	0.9	6581.09	115	6465.2 A	100-130	67.4
SC	1543617	488815	105.4	5.0	12/5/2000	57.11	6521.69	1.2	6578.80	103	6474.6 A	55-105	47.1
SD	1543490	488564	90.1	5.0	2/23/2009	41.50	6536.81	0.6	6578.31	107	6470.7 A	50-110	66.1
SD4	1543497	488556	95.0	5.0	2/23/2009	46.17	6532.60	1.1	6578.77	95	6482.7 A	45-95	49.9
SE	1543301	488550	111.8	5.0	2/23/2009	7.88	6570.11	0.5	6577.99	88	6489.5 A	50-90	80.6
SE4	1543308	488560	105.3	2.0	2/23/2009	45.78	6532.22	—	6578.00	—	— A	-	—
SM	1543748	488566	86.0	5.0	1/4/2010	42.22	6536.52	0.7	6578.74	—	— A	-	—

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
SN	1543752	488716	67.5	4.0	1/4/2010	43.58	6535.68	1.1	6579.26	—	— A	-	—
SO	1543652	488381	92.3	5.0	1/4/2010	43.56	6535.23	0.6	6578.79	—	— A	-	—
SP	1543630	488531	94.4	4.0	1/4/2010	43.27	6535.39	2.0	6578.66	—	— A	-	—
SQ	1543507	488814	95.0	5.0	6/29/2009	59.50	6519.70	0.9	6579.20	95	6483.3 A	55-95	36.4
SR	1543611	488669	95.0	5.0	9/21/2007	47.54	6531.65	0.8	6579.19	95	6483.4 A	50-90	48.3
SS	1543374	488666	101.0	5.0	2/23/2009	48.66	6529.72	1.2	6578.38	90	6487.2 A	51-101	42.5
ST	1543215	488688	97.0	5.0	2/23/2009	48.90	6530.41	2.2	6579.31	96	6481.1 A	55-97	49.3
* SU	1542946	488953	110.0	5.0	9/5/1995	35.60	6542.50	0.7	6578.10	110	6467.4 A	50-110	75.1
SUR	1542991	488968	115.0	5.0	7/14/2008	58.28	6522.44	2.6	6580.72	106	6472.1 A	35-115	50.3
SV	1543676	488813	78.2	6.0	6/29/2009	45.66	6533.59	1.7	6579.25	100	6477.6 A	55-105	56.0
SW	1543783	488812	81.9	6.0	5/19/2008	50.31	6530.98	2.9	6581.29	75	6503.4 A	35-80	27.6
SX	1544510	489025	45.0	5.0	—	—	—	1.0	6581.49	40	6540.5 A	20-40	—
SZ	1544367	488833	62.6	5.0	12/9/2009	36.79	6544.68	0.4	6581.47	60	6521.1 A	40-70	23.6
T	1542536	492260	70.2	4.0	8/24/2009	34.30	6544.93	2.4	6579.23	68	6508.8 A	61-71	36.1
T1	1543285	490027	—	5.0	12/6/2002	102.40	6561.51	1.0	6663.91	161	6501.9 A	121-171	59.6
T2	1543538	489303	186.0	5.0	8/24/2009	121.38	6543.44	5.0	6664.82	180	6479.8 A	100-186	63.6
T4	1543340	489699	205.0	5.0	8/24/2009	70.26	6587.48	2.9	6657.74	175	— T	-	—
										175	6479.8 A	145-205	107.6
T5	1543307	490289	182.0	5.0	8/24/2009	119.29	6538.04	3.1	6657.33	151	— T	-	—
										151	6503.2 A	122-182	34.8
T6	1543282	490655	160.0	5.0	8/24/2009	120.88	6537.89	3.3	6658.77	156	— T	-	—
										156	6499.5 A	130-160	38.4
T7	1543272	491484	160.0	5.0	1/26/2009	119.60	6540.07	2.4	6659.67	142	— T	-	—
										142	6515.3 A	130-160	24.8
T8	1543296	491914	162.0	5.0	1/26/2009	120.00	6541.61	2.6	6661.61	158	— T	-	—
										158	6501.0 A	132-162	40.6
T9	1543347	492337	141.0	5.0	8/24/2009	119.76	6544.19	3.3	6663.95	138	— T	-	—
										138	6522.7 A	121-141	21.5
T10	1543434	492791	148.0	5.0	8/24/2009	106.40	6553.56	2.4	6659.96	142	— T	-	—
										142	6515.6 A	108-148	38.0
T11	1544585	489887	193.0	5.0	8/24/2009	116.52	6540.29	2.8	6656.81	160	— T	-	—
										160	6494.0 A	113-193	46.3
T12	1544583	490317	200.0	5.0	8/24/2009	82.81	6574.42	2.8	6657.23	170	— T	-	—
										170	6484.4 A	120-200	90.0
T18	1543977	490333	195.0	5.0	1/28/2009	123.36	6541.80	3.0	6665.16	162	— T	-	—
										162	6500.2 A	115-195	41.6
T41	1543278	491079	160.0	5.0	1/26/2009	83.00	6576.96	3.2	6659.96	155	— T	-	—
										155	6501.8 A	130-160	75.2

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
TA	1542471	492426	62.4	5.0	9/21/2009	35.31	6544.99	2.4	6580.30	55	6522.9 A	35-65	22.1
TB	1542351	492616	64.4	5.0	9/21/2009	38.01	6545.56	1.9	6583.57	55	6526.7 A	35-65	18.9
W	1542302	487297	99.3	4.0	12/9/2009	45.15	6526.99	0.3	6572.14	117	6454.8 A	58-118	72.1
W2	1542251	486654	79.1	4.0	3/2/1998	56.21	6515.29	0.9	6571.50	—	— A	-	—
WN4	1543958	489961	142.4	5.0	12/2/2009	66.80	6595.98	3.0	6662.78	165	— T	40-100	—
										165	6494.8 A	50-190	101.2
WR1	1541280	488529	—	5.0	6/27/1989	46.54	6521.86	0.8	6568.40	—	— A	-	—
WR1R	1541302	488536	85.0	5.0	12/5/2000	28.62	6539.85	0.0	6568.47	85	6483.5 A	-	56.4
WR2	1541290	488678	94.1	5.0	12/5/2000	2.52	6566.07	0.9	6568.59	85	6482.7 A	65-95	83.4
WR3	1541490	488671	82.3	5.0	12/5/2000	32.96	6536.58	2.7	6569.54	83	6483.8 A	63-93	52.7
WR4	1541788	488678	62.0	5.0	12/5/2000	1.92	6570.89	0.0	6572.81	—	— A	-	—
WR5	1541813	488683	72.4	5.0	12/5/2000	38.69	6532.54	0.6	6571.23	80	6490.6 A	60-80	41.9
WR6	1541902	488566	96.8	5.0	12/5/2000	3.04	6569.99	1.3	6573.03	84	6487.7 A	55-85	82.3
WR7	1541997	488456	97.3	5.0	12/5/2000	38.91	6534.82	2.0	6573.73	84	6487.8 A	55-85	47.0
WR8	1542095	488328	110.2	5.0	11/10/2008	26.40	6546.20	0.4	6572.60	100	6472.2 A	50-100	74.0
WR9	1542185	488217	111.3	5.0	12/5/2000	46.82	6526.23	0.8	6573.05	100	6472.3 A	50-100	54.0
WR10	1542389	487961	120.6	5.0	1/29/2003	14.84	6558.35	0.7	6573.19	110	6462.5 A	60-110	95.9
WR11	1542586	487728	120.5	5.0	1/29/2003	14.88	6559.61	0.3	6574.49	110	6464.2 A	60-110	95.4
WR12	1541280	488277	96.7	4.0	11/12/2007	30.85	6537.34	1.1	6568.19	85	6482.1 A	55-85	55.2
WR13	1541068	488861	70.0	5.0	12/5/2000	18.98	6550.19	3.2	6569.17	60	6506.0 A	50-60	44.2
WR14	1540638	488863	70.0	5.0	5/28/2003	15.50	6551.41	2.3	6566.91	61	6503.6 A	50-60	47.8
WR15	1541280	488016	70.0	4.0	5/28/2003	10.90	6560.29	0.0	6571.19	75	6496.2 A	60-75	64.1
WR16	1543051	487495	122.3	5.0	1/29/2003	6.54	6566.24	1.9	6572.78	100	6470.9 A	40-120	95.4
WR17	1543328	487485	124.4	5.0	1/29/2003	2.45	6570.64	2.2	6573.09	75	6495.9 A	40-120	74.7
WR18	1543597	487465	73.6	5.0	1/29/2003	2.97	6569.94	2.2	6572.91	70	6500.7 A	20-70	69.2
WR19	1543873	487458	87.8	5.0	1/29/2003	3.31	6571.62	2.2	6574.93	74	6498.7 A	25-85	72.9
WR20	1544059	487449	102.3	5.0	1/29/2003	3.98	6570.49	2.1	6574.47	80	6492.4 A	42-102	78.1
WR21	1544241	487449	88.9	5.0	1/29/2003	6.28	6569.77	2.1	6576.05	77	6497.0 A	28-88	72.8
WR22	1544434	487462	91.5	5.0	1/29/2003	3.44	6574.45	2.4	6577.89	86	6489.5 A	30-90	85.0
WR23	1544632	487445	94.3	5.0	1/29/2003	1.72	6574.75	2.2	6576.47	77	6497.3 A	32-92	77.5
WR24	1544938	487438	89.2	5.0	1/29/2003	2.04	6586.63	3.0	6588.67	82	6503.7 A	50-90	83.0
X	1540512	491892	50.7	4.0	12/28/2009	28.92	6542.69	1.7	6571.61	—	— A	-	—
X1	1540671	492129	54.0	5.0	8/12/2002	7.50	6566.04	3.9	6573.54	47	6522.6 A	37-47	43.4
X2	1540836	492363	53.0	6.0	8/12/2002	2.50	6569.43	1.9	6571.93	45	6525.0 A	40-45	44.4
X3	1540992	492599	52.0	5.0	8/12/2002	2.50	6570.78	2.0	6573.28	42	6529.3 A	32-42	41.5
X4	1541210	492814	54.0	5.0	8/12/2002	13.10	6563.84	3.2	6576.94	45	6528.7 A	37-45	35.1

TABLE 2-1. WELL DATA FOR THE HOMESTAKE ALLUVIAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
X5	1541408	492821	44.0	6.0	8/12/2002	7.80	6569.81	3.6	6577.61	35	6539.0 A	24-36	30.8
X6	1541609	492828	46.0	6.0	8/12/2002	8.00	6570.72	3.5	6578.72	35	6540.2 A	22-37	30.5
X7	1541808	492851	56.0	6.0	12/5/2000	8.60	6571.83	3.4	6580.43	45	6532.0 A	32-46	39.8
X8	1542007	492852	61.0	5.0	12/5/2000	13.00	6568.76	3.4	6581.76	51	6527.4 A	32-52	41.4
X9	1542194	492852	61.0	5.0	12/5/2000	27.00	6555.92	3.6	6582.92	51	6528.3 A	24-52	27.6
X10	1542352	492835	61.0	5.0	8/12/2002	4.00	6578.43	3.6	6582.43	53	6525.8 A	30-55	52.6
X11	1542553	492782	57.0	5.0	12/5/2000	0.50	6581.50	3.0	6582.00	53	6526.0 A	17-57	55.5
X12	1542861	492852	57.0	5.0	12/5/2000	0.50	6582.83	3.0	6583.33	53	6527.3 A	17-57	55.5
X13	1543640	493665	56.0	5.0	4/9/2002	40.76	6546.18	2.5	6586.94	51	6533.4 A	16-56	12.7
X14	1544002	493777	56.0	5.0	4/9/2002	39.80	6546.40	2.1	6586.20	49	6535.1 A	16-56	11.3
X15	1544222	493800	57.0	5.0	4/9/2002	40.54	6542.37	2.3	6582.91	51	6529.6 A	17-57	12.8
X16	1544473	493795	47.0	5.0	4/9/2002	40.64	6544.15	2.3	6584.79	47	6535.5 A	22-47	8.7
X17	1544356	493793	55.0	5.0	4/9/2002	41.06	6544.78	3.3	6585.84	48	6534.6 A	35-55	10.2
X18	1544593	493569	57.0	5.0	10/20/2009	37.76	6548.32	3.8	6586.08	49	6533.3 A	37-57	15.1
X19	1544753	493437	63.0	5.0	11/17/2006	32.46	6552.74	4.5	6585.20	56	6524.8 A	33-63	28.0
X20	1544855	493256	71.0	5.0	11/17/2006	40.15	6545.58	3.5	6585.73	64	6518.2 A	31-71	27.3
X21	1543606	493894	55.0	5.0	12/5/2000	38.99	6547.34	2.7	6586.33	51	6532.6 A	35-55	14.7
X22	1543874	493946	56.0	5.0	12/5/2000	39.21	6546.49	2.6	6585.70	50	6533.1 A	36-56	13.4
X23	1544064	494012	56.0	5.0	12/5/2000	38.96	6546.98	2.8	6585.94	47	6536.1 A	36-56	10.8
X24	1544244	494011	56.0	5.0	12/5/2000	39.94	6545.78	2.6	6585.72	46	6537.1 A	36-56	8.7
X25	1544445	494042	53.0	5.0	12/5/2000	39.41	6546.22	2.8	6585.63	46	6536.9 A	33-53	9.3
X26	1544693	493702	53.0	5.0	12/5/2000	35.34	6552.30	2.8	6587.64	43	6541.8 A	33-53	10.5
X27	1544953	493374	71.0	5.0	11/17/2006	39.75	6545.55	5.1	6585.30	64	6516.2 A	31-71	29.3
X28	1540545	491971	56.0	5.0	8/12/2002	8.30	6561.66	2.0	6569.96	48	6520.0 A	16-56	41.7
X29	1540735	492256	51.0	5.0	8/12/2002	4.00	6566.03	2.0	6570.03	43	6525.0 A	11-51	41.0
X30	1540897	492493	51.0	5.0	8/12/2002	3.00	6569.53	2.0	6572.53	43	6527.5 A	11-51	42.0
X31	1541052	492731	51.0	5.0	8/12/2002	8.00	6566.13	2.0	6574.13	44	6528.1 A	11-51	38.0
Y	1541025	491256	60.8	4.0	10/15/2002	15.20	6557.68	2.4	6572.88	57	6513.5 A	54-59	44.2
Z	1540290	490701	73.9	4.0	12/5/2000	5.00	6564.22	0.6	6569.22	68	6500.6 A	60-70	63.6

Note: A = Alluvial Aquifer
MP = Measuring Point
LSD = Land Surface Datum
IN = Inches
FT = Feet
MSL = Mean Sea Level

TABLE 2-2. WELL DATA FOR THE ALLUVIAL AQUIFER BROADVIEW AND FELICE ACRES WELLS.

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL			MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
					DATE	DEPTH (FT-MP)	ELEV. (FT-MSL)						
							Broadview						
0410	1537459	489882	105.0	6.0	5/25/2005	40.47	6519.19	0.0	6559.66	75	6484.7 A	90-105	34.5
0411	1537400	489510	70.0	6.0	8/7/1996	35.10	6524.90	0.0	6560.00	70	6490.0 A	65-70	34.9
0412	1537940	488830	—	6.0	—	—	—	0.0	6561.00	—	— A	-	—
0413	1537900	490100	—	—	4/27/1994	35.25	6530.75	0.0	6566.00	—	— A	-	—
0421	1538450	491100	88.0	5.0	1/30/1996	37.58	6534.42	0.9	6572.00	92	6479.1 A	72-102	55.3
0422	1538440	490810	80.0	4.0	4/6/1994	32.82	6537.18	0.0	6570.00	75	6495.0 A	60-80	42.2
0423	1538223	490926	—	—	—	—	—	0.0	6570.00	—	— A	-	—
0425	1538430	490630	90.0	6.0	4/7/1994	32.42	6534.58	0.0	6567.00	71	6496.0 A	50-90	38.6
0426	1538230	490620	100.0	—	11/10/1981	30.65	6534.35	0.0	6565.00	80	6485.0 A	80-100	49.4
0427	1538450	490410	121.0	6.0	4/12/1994	35.00	6535.00	0.0	6570.00	81	6489.0 A	62-120	46.0
0428	1538367	490435	110.0	4.0	—	—	—	0.0	6570.00	66	6504.0 A	83-104	—
0429	1538210	490430	100.0	6.0	9/1/1995	37.21	6532.79	0.0	6570.00	74	6496.0 A	58-75	36.8
0430	1538469	490300	145.0	—	—	—	—	0.0	6568.00	—	— A	-	—
										114	6454.0 U	-	—
0431	1538045	490090	130.0	6.0	4/12/1994	35.00	6533.00	0.0	6568.00	60	6508.0 A	125-130	25.0
										60	6450.0 U	125-130	83.0
0432	1538210	489840	—	—	—	—	—	0.0	6565.00	—	— A	-	—
0433	1538220	489620	90.0	4.0	5/2/1997	36.05	6527.95	1.5	6564.00	75	6487.5 A	58-84	40.5
0435	1538220	489300	85.0	6.0	3/25/2003	34.48	6526.52	1.3	6561.00	85	6474.7 A	-	51.8
0438	1537854	490840	120.0	4.0	—	—	—	0.0	6571.00	105	6466.0 A	70-100	—
0439	1537940	490490	97.0	4.0	8/7/1996	39.80	6527.20	0.0	6567.00	75	6492.0 A	77-97	35.2
0440	1537700	490230	—	—	—	—	—	0.0	6566.00	—	— A	-	—
0441	1537720	490090	116.0	6.0	1/30/1995	35.19	6530.81	0.0	6566.00	78	6488.0 A	106-116	42.8
0442	1537940	489840	100.0	4.0	8/7/1996	37.15	6527.85	0.0	6565.00	80	6485.0 A	70-100	42.8
0443	1537940	489280	—	4.0	—	—	—	0.0	6561.00	75	6486.0 A	60-80	—
0444	1537940	489180	80.0	4.0	5/18/1994	28.84	6532.16	0.0	6561.00	—	— A	-	—
0445	1537720	489300	108.0	6.0	—	—	—	0.0	6561.00	79	6482.0 A	75-105	—
0446	1537830	488960	110.0	6.0	9/8/1983	41.28	6518.72	0.0	6560.00	60	6500.0 U	60-95	18.7
										60	6500.0 A	60-95	18.7
0447	1537490	490480	142.0	6.0	4/11/1985	41.18	6526.82	0.0	6568.00	—	— A	120-142	—
										80	6488.0 U	120-142	38.8
0448	1537400	489100	—	—	—	—	—	0.0	6561.00	—	— A	-	—
0450	1537448	490763	—	6.0	1/25/1995	42.29	6528.71	0.0	6571.00	85	6486.0 A	70-105	42.7
* 0451	1537700	490600	—	—	—	—	—	0.0	0.00	—	— A	-	—
0452	1537880	490420	100.0	4.0	8/7/1996	41.20	6525.80	0.8	6567.00	85	6481.2 A	40-100	44.6

TABLE 2-2. WELL DATA FOR THE ALLUVIAL AQUIFER BROADVIEW AND FELICE ACRES 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0453	1538375	490300	110.0	4.0	7/1/2002	34.93	6533.07	0.9	6568.00	80	6487.1 A	60-110	46.0
* 0454	1537920	489025	—	4.0	—	—	—	0.0	0.00	—	— A	-	—
SUB1	1537620	489100	—	4.0	4/20/2009	35.16	6525.84	0.0	6561.00	—	— A	-	—
SUB2	1537392	490370	—	4.0	5/4/2004	40.10	6527.47	0.0	6567.57	—	— A	-	—
SUB3	1538280	489420	84.0	6.0	12/14/2009	31.08	6525.99	0.0	6557.07	72	6485.1 A	56-72	40.9
SUB4	1538440	489840	100.0	4.0	9/21/1978	49.11	6515.89	0.0	6565.00	78	6487.0 A	60-85	28.9
SUB5	1537940	489470	86.0	4.0	—	—	—	0.0	6562.31	66	6496.3 A	55-80	—
SUB6	1537940	490090	82.0	4.0	—	—	—	0.0	6566.00	80	6486.0 A	52-82	—
SUB7	1537940	490630	98.0	4.0	—	—	—	0.0	6568.00	85	6483.0 A	78-98	—
SUB8	1538450	490210	150.0	5.0	—	—	—	0.0	6568.00	72	6496.0 A	60-90	—
SUB9	—	—	—	—	—	—	—	0.0	0.00	—	— A	-	—
						Felice Acres							
0481	1538350	490180	320.0	4.0	—	—	—	0.0	6568.00	110	6458.0 A	270-310	—
										110	6298.0 M	270-310	—
0482	1536981	489579	260.0	5.0	12/10/2009	38.37	6524.29	0.0	6562.66	80	6482.7 A	220-260	41.6
										80	6352.7 M	220-260	171.6
0483	1536586	489753	280.0	5.0	10/6/2009	53.11	6509.55	0.0	6562.66	—	— A	-	—
										—	— M	-	—
0490	1536553	489752	63.0	4.0	12/14/2009	38.98	6523.44	0.0	6562.42	75	6487.4 A	20-80	36.0
0491	1537031	489658	63.0	4.0	12/10/2009	40.41	6522.21	0.0	6562.62	40	6522.6 A	30-63	0.0
0492	1537220	489280	60.0	4.0	4/12/2006	35.46	6525.22	1.2	6560.68	55	6504.5 A	40-60	20.7
0495	1537400	497100	—	—	—	—	—	0.0	6571.00	—	— A	-	—
0496	1534650	489603	93.0	5.0	12/14/2009	57.43	6505.09	1.6	6562.52	86	6474.9 A	53-93	30.2
0497	1535039	489503	94.0	5.0	12/14/2009	56.79	6505.83	2.0	6562.62	89	6471.6 A	64-94	34.2
CW44	1535048	488891	208.0	6.0	12/10/2009	63.93	6496.81	2.5	6560.74	94	6464.2 A	-	32.6
										94	6428.2 M	69-208	68.6

Note: A = Alluvial Aquifer
MP = Measuring Point
LSD = Land Surface Datum
IN = Inches
FT = Feet
MSL = Mean Sea Level

TABLE 2-3. WELL DATA FOR THE ALLUVIAL AQUIFER MURRAY ACRES AND PLEASANT VALLEY WELLS.

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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
						Murray							
0801	1541020	488600	100.0	4.0	7/15/2004	39.20	6528.53	0.0	6567.73	85	6482.7 A	80-100	45.8
0802	1540765	488277	98.0	6.0	12/28/2009	37.51	6525.21	0.0	6562.72	81	6481.7 A	75-81	43.5
0803	1540800	487430	—	6.0	9/19/1983	84.86	6476.14	0.0	6561.00	85	— C	85-180	—
										85	6476.0 A	85-180	0.1
0804	1540790	486790	137.0	6.0	2/24/2009	46.20	6515.80	0.0	6562.00	85	6477.0 A	125-136	38.8
0805	1540818	486241	140.0	5.0	10/6/1994	59.34	6507.66	0.0	6567.00	110	6457.0 A	100-140	50.7
0810	1540244	486563	105.0	6.0	—	—	—	0.0	6562.00	81	6481.0 A	75-101	—
0811	1540320	486373	140.0	4.0	—	—	—	0.0	6563.00	110	6453.0 A	100-140	—
0815	1539090	488100	255.0	4.0	5/22/1991	29.14	6526.12	0.0	6555.26	—	— A	-	—
0844	1538376	487002	75.0	4.0	12/12/2009	36.64	6519.49	1.2	6556.13	70	6484.9 A	35-75	34.6
0845	1537280	487833	65.0	4.0	12/12/2009	36.72	6520.33	1.7	6557.05	55	6500.4 A	45-65	20.0
AW	1540235	488015	156.0	6.0	12/14/2009	35.09	6528.34	0.1	6563.43	63	6500.3 A	-	28.0
										63	6463.3 U	66-155	65.0
HW	1540920	487435	115.0	6.0	11/9/1994	40.00	6517.00	0.0	6557.00	95	6462.0 A	60-94	55.0
						Pleasant Valley							
0525	1541283	486020	—	4.5	7/12/2002	55.36	6514.64	—	6570.00	—	— A	-	—
0688	1541257	483955	105.0	5.0	12/14/2009	60.92	6501.70	2.9	6562.62	95	6464.7 A	65-105	37.0
0831	1540090	486030	—	—	9/6/1983	54.95	6506.05	0.0	6561.00	—	— A	-	—
0833	1539335	485445	110.0	6.0	12/10/1996	46.61	6511.39	0.0	6558.00	103	6455.0 A	60-90	56.4
0834	1540259	484847	100.0	4.0	—	—	—	0.0	6560.00	80	6480.0 A	60-80	—
0835	1539610	484795	98.0	5.0	5/2/2000	49.74	6509.26	0.0	6559.00	94	6465.0 A	73-94	44.3
0836	1540250	484010	90.0	4.0	—	—	—	0.0	6558.00	80	6478.0 A	65-80	—
0838	1540600	485640	100.0	—	7/22/1995	49.03	6513.97	0.0	6563.00	—	— A	-	—
0839	1540782	485371	100.0	5.0	12/19/1994	50.00	6510.00	0.0	6560.00	94	6466.0 A	80-96	44.0
0840	1540440	485360	98.0	6.0	9/8/1983	47.32	6513.68	0.0	6561.00	94	6467.0 A	73-94	46.7
0841	1540835	485020	100.0	—	7/22/1995	54.66	6506.34	0.0	6561.00	—	— A	-	—
0843	1541411	485738	120.0	4.0	6/27/1989	52.40	6517.60	0.0	6570.00	112	6458.0 A	100-110	59.6

Note: A = Alluvial Aquifer
MP = Measuring Point
LSD = Land Surface Datum
IN = Inches
FT = Feet
MSL = Mean Sea Level

TABLE 2-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL WELLS.

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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0520	1538934	492935	75.0	5.0	12/14/2009	51.92	6534.10	0.3	6586.02	68	6517.7 A	35-75	16.4
0521	1539104	492588	75.0	5.0	9/23/2009	52.33	6532.11	2.5	6584.44	65	6516.9 A	35-75	15.2
0522	1538640	492437	77.0	5.0	9/23/2009	52.68	6527.85	2.8	6580.53	68	6509.7 A	37-77	18.1
0523	1538680	492896	74.0	5.0	9/10/2002	2.00	6584.79	3.0	6586.79	62	6521.8 A	34-74	63.0
0524	1538889	493173	78.0	5.0	1/28/2003	3.47	6586.88	3.0	6590.35	70	6517.4 A	33-78	69.5
0531	1541086	478262	—	—	10/30/1996	79.24	6474.55	2.0	6553.79	—	— A	-	—
0532	1518700	482400	214.0	—	—	—	—	0.0	6515.00	—	— A	-	—
0533	—	—	195.0	—	—	—	—	0.0	6520.00	—	— A	-	—
0631	1532234	483756	118.0	6.0	12/12/2009	96.25	6444.85	2.2	6541.10	109	6429.9 A	58-118	15.0
0632	1531850	483767	110.0	6.0	12/10/2009	99.02	6442.28	3.0	6541.30	102	6436.3 A	70-110	6.0
0633	1541467	479642	83.0	8.0	12/10/2009	73.33	6484.23	0.0	6557.56	95	6462.6 A	11-83	21.7
0634	1541652	480362	103.0	4.5	12/10/2009	70.21	6489.86	2.8	6560.07	95	6462.3 A	80-100	27.6
0635	1535363	478401	63.0	12.0	—	—	—	—	6546.25	—	— A	4-63	—
0636	1545374	476038	123.0	4.5	9/23/2009	105.60	6467.84	2.3	6573.44	119	6452.1 A	103-123	15.7
0637	1545409	474710	124.0	4.5	9/23/2009	111.88	6463.32	2.5	6575.20	118	6454.7 A	104-124	8.6
0638	1539628	493265	75.0	5.0	12/14/2009	46.74	6538.82	0.0	6585.56	65	6520.6 A	35-75	18.3
0639	1539370	492961	80.0	5.0	9/23/2009	62.91	6524.97	2.5	6587.88	71	6514.4 A	35-80	10.6
0640	1537790	491961	84.0	5.0	12/14/2009	53.38	6526.59	2.2	6579.97	77	6500.8 A	64-84	25.8
0641	1536494	491110	95.0	5.0	2/28/2007	51.75	6521.61	2.5	6573.36	87	6483.9 A	65-95	37.8
0642	1536104	490932	95.0	5.0	2/28/2007	52.61	6519.27	2.4	6571.88	89	6480.5 A	65-95	38.8
0643	1533760	487386	108.0	5.0	10/16/2002	75.89	6475.44	1.5	6551.33	93	6456.8 A	58-108	18.6
0644	1533481	485450	110.0	5.0	12/10/2009	85.55	6458.35	2.2	6543.90	102	6439.7 A	55-110	18.7
0645	1532924	485282	80.0	5.0	12/11/2006	80.00	6463.79	2.5	6543.79	70	6471.3 A	60-80	0.0
0646	1533246	484953	100.0	5.0	10/7/2009	90.60	6452.75	1.5	6543.35	91	6450.9 A	60-100	1.9
0647	1536623	478308	140.0	4.5	12/9/2009	105.96	6445.95	1.4	6551.91	132	6418.5 A	80-140	27.4
0648	1534730	478343	120.0	4.5	12/9/2009	120.00	6427.79	0.5	6547.79	120	6427.3 A	80-120	0.5
0649	1534730	479798	124.0	4.5	12/9/2009	103.18	6440.11	0.3	6543.29	115	6428.0 A	84-124	12.1
0650	1536779	482135	109.0	4.5	12/12/2009	82.03	6465.08	2.2	6547.11	103	6441.9 A	89-109	23.2
0652	1531170	483779	88.0	5.0	12/10/2009	86.24	6451.91	1.5	6538.15	79	6457.7 A	60-88	0.0
0653	1533283	486570	206.0	6.0	12/10/2009	79.85	6465.12	1.3	6544.97	97	6446.7 A	69-206	18.5
										97	6408.7 L	-	56.5
0654	1541994	478636	120.0	4.5	12/10/2009	72.78	6477.72	1.4	6550.50	106	6443.1 A	60-120	34.6
0655	1541620	479830	96.0	8.0	12/14/2009	72.61	6485.57	—	6558.18	88	— A	21-84	—
0656	1542578	478333	88.0	8.0	10/23/2007	75.10	6478.97	—	6554.07	88	— A	6-88	—
0657	1537497	478392	128.0	6.0	12/9/2009	101.92	6449.89	2.2	6551.81	120	6429.6 A	87-128	20.3
0657A	1537083	478412	35.0	12.0	4/13/1999	37.00	6512.00	—	6549.00	—	— A	17-35	—

TABLE 2-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0658	1535922	478436	130.0	6.0	12/9/2009	108.11	6442.07	0.4	6550.18	129	6420.8 A	89-130	21.3
0659	1541689	480772	101.0	4.5	12/10/2009	69.58	6490.59	2.0	6560.17	97	6461.2 A	61-101	29.4
0680	1543850	478746	80.0	4.5	10/25/1996	77.39	6481.48	2.0	6558.87	75	6481.9 A	50-80	0.0
0681	1540676	482734	117.0	6.0	9/24/1998	64.18	6496.34	2.1	6560.52	111	6447.4 A	67-117	48.9
0682	1543125	477489	94.0	4.0	9/29/2009	84.97	6469.00	2.8	6553.97	102	6449.2 A	54-94	19.8
0683	1540198	476217	120.0	6.0	12/14/2009	90.53	6465.51	2.0	6556.04	140	6414.0 A	80-120	51.5
0684	1540273	478499	143.0	6.0	10/20/2009	87.34	6465.94	2.0	6553.28	118	6433.3 A	83-143	32.7
0685	1539098	478170	100.0	4.5	12/12/2009	98.10	6458.47	1.7	6556.57	116	6438.9 A	60-100	19.6
0686	1545319	475438	115.0	4.5	9/23/2009	114.70	6464.10	1.8	6578.80	136	6441.0 A	75-115	23.1
0687	1539011	477276	102.0	6.0	12/12/2009	96.68	6459.28	2.2	6555.96	120	6433.8 A	62-102	25.5
0689	1530024	478478	80.0	4.5	11/24/2008	83.65	6458.37	2.6	6542.02	75	6464.4 A	60-80	0.0
0692	1535892	493175	90.0	5.0	7/15/2009	67.00	6517.82	2.5	6584.82	80	6502.3 A	58-90	15.5
0846	1537219	484730	75.0	4.0	12/12/2009	45.58	6503.34	1.1	6548.92	65	6482.8 A	40-65	20.5
0847	1534736	488508	92.0	5.0	11/22/1996	53.88	6504.39	2.6	6558.27	80	6475.7 A	52-92	28.7
0848	1534634	490660	92.0	5.0	2/28/2007	60.78	6511.71	2.7	6572.49	91	6478.8 A	52-92	32.9
0851	1534692	483909	91.0	5.0	12/1/2008	89.13	6457.31	3.3	6546.44	80	6463.1 A	41-91	0.0
0852	1535610	493989	74.0	5.0	11/22/1996	73.26	6516.88	2.5	6590.14	70	6517.7 A	54-74	0.0
0855	1532111	484184	105.0	5.0	2/24/2009	93.94	6447.17	2.1	6541.11	97	6442.0 A	70-105	5.2
0861	1534332	488702	100.0	5.0	8/19/2009	71.13	6488.72	2.3	6559.85	65	6492.6 A	50-100	0.0
0862	1534265	487800	110.0	5.0	12/10/2009	65.55	6490.63	3.3	6556.18	97	6455.9 A	63-103	34.7
0863	1533867	487912	110.0	5.0	9/12/2007	96.08	6460.48	2.5	6556.56	94	6460.1 A	63-103	0.4
0864	1533735	486464	95.0	5.0	10/7/2009	75.84	6470.88	1.9	6546.72	78	6466.9 A	44-84	4.0
0865	1534123	488429	97.0	5.0	7/20/2009	68.30	6488.48	2.2	6556.78	88	6466.6 A	37-97	21.9
0866	1534494	488340	120.0	5.0	9/11/2009	101.00	6457.12	1.8	6558.12	80	6476.3 A	33-113	0.0
0867	1533762	488409	88.0	5.0	12/10/2009	71.78	6484.12	2.0	6555.90	86	6467.9 A	48-88	16.2
0868	1534848	491033	103.0	5.0	2/28/2007	62.10	6512.64	2.2	6574.74	94	6478.5 A	53-103	34.1
0869	1533251	486073	94.0	5.0	12/10/2009	83.88	6460.61	2.0	6544.49	99	6443.5 A	44-94	17.1
* 0870	1532680	484906	93.0	5.0	1/11/1996	68.56	6475.60	1.9	6544.16	95	6447.3 A	69-89	28.3
0871	1533603	485400	100.0	5.0	1/11/1996	66.86	6477.85	2.4	6544.71	93	6449.3 A	60-100	28.5
* 0872	1533092	485407	100.0	5.0	1/11/1996	65.80	6477.51	1.8	6543.31	96	6445.5 A	55-100	32.0
* 0873	1533286	484505	100.0	5.0	1/11/1996	67.55	6475.46	1.9	6543.01	96	6445.1 A	60-100	30.3
* 0874	1533968	484925	105.0	5.0	1/11/1996	68.68	6476.66	2.2	6545.34	110	6433.1 A	55-105	43.5
* 0875	1532785	483634	125.0	5.0	1/11/1996	69.85	6472.99	1.7	6542.84	116	6425.1 A	65-125	47.9
0876	1532853	486088	95.0	5.0	12/10/2009	85.74	6458.52	1.9	6544.26	85	6457.4 A	58-88	1.2
0877	1533068	488067	70.0	5.0	8/18/1998	63.58	6489.50	1.9	6553.08	65	6486.2 A	58-68	3.3
0879	1532401	486104	70.0	5.0	12/10/2009	69.20	6475.35	2.2	6544.55	62	6480.4 A	48-68	0.0

TABLE 2-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0881	1542034	481478	96.0	4.5	12/10/2009	73.26	6491.78	2.0	6565.04	103	6460.0 A	76-96	31.7
0882	1541404	482396	110.0	4.5	11/18/2008	68.21	6492.95	2.0	6561.16	98	6461.2 A	70-110	31.7
0883	1540097	483039	100.0	5.0	12/14/2009	62.00	6495.13	1.9	6557.13	96	6459.3 A	60-90	35.9
0884	1542677	481498	90.0	5.0	6/22/2009	74.66	6491.44	1.0	6566.10	85	6480.2 A	58-88	11.3
0885	1541919	483474	100.0	5.0	12/10/2009	65.25	6499.39	1.5	6564.64	95	6468.1 A	70-100	31.3
0886	1542327	482487	90.0	5.0	12/10/2009	68.78	6495.77	1.5	6564.55	87	6476.1 A	60-90	19.7
0887	1543063	482469	67.0	5.0	6/16/2009	57.54	6510.19	1.5	6567.73	60	6506.2 A	42-67	4.0
0888	1542285	479335	105.0	5.0	12/10/2009	75.70	6481.63	1.1	6557.33	90	6466.2 A	75-105	15.4
0889	1540047	480222	65.0	5.0	10/24/1996	63.31	6486.32	1.5	6549.63	60	6488.2 A	35-65	0.0
0890	1541365	480088	101.0	5.0	12/10/2009	72.87	6485.56	1.7	6558.43	93	6463.7 A	81-101	21.8
0893	1541934	482244	98.0	4.5	12/10/2009	68.80	6495.17	2.1	6563.97	93	6468.9 A	78-98	26.3
0894	1541976	478317	78.0	4.5	11/16/2005	77.40	6476.89	3.0	6554.29	97	6454.3 A	58-78	22.6
0895	1541521	476222	104.0	5.0	9/29/2009	86.00	6467.84	2.4	6553.84	116	6435.4 A	61-101	32.4
0896	1542246	476237	113.0	5.0	9/29/2009	87.14	6468.47	2.0	6555.61	117	6436.6 A	73-113	31.9
0897	1543819	478237	93.0	4.0	9/27/1998	83.28	6478.97	2.0	6562.25	70	6490.3 A	63-93	0.0
0899	1543801	477288	110.0	4.0	9/16/2009	101.78	6469.06	2.0	6570.84	120	6448.8 A	70-110	20.2
0905	1532700	480850	120.0	5.0	11/13/2006	0.00	6545.00	0.0	6545.00	120	6425.0 A	100-120	120.0
0906	1532900	480450	—	—	8/29/1995	74.65	6462.75	0.0	6537.40	—	— A	-	—
0909	1531900	483400	140.0	4.0	5/7/2009	92.20	6446.70	0.0	6538.90	112	6426.9 A	80-135	19.8
										112	6426.9 L	80-135	19.8
0910	1528800	481150	138.0	5.0	—	—	—	0.0	6535.00	132	6403.0 A	120-134	—
0912	1471000	478250	—	—	—	—	—	0.0	6530.00	—	— A	-	—
0913	1555800	500950	—	8.0	1/24/1996	38.40	6604.60	0.3	6643.00	—	— A	-	—
0914	1555500	500850	93.0	6.0	5/6/2009	42.87	6599.13	1.4	6642.00	—	— A	-	—
0915	1552650	499650	100.0	4.0	6/19/2006	30.00	6595.00	0.0	6625.00	70	6555.0 A	55-85	40.0
0916	1552350	499600	160.0	4.0	5/7/2009	36.63	6588.37	0.0	6625.00	—	— A	45-70	—
0917	1542200	514600	—	—	—	—	—	0.0	6800.00	—	— A	-	—
0920	1555800	496900	—	7.0	5/11/1994	33.40	6594.20	0.7	6627.60	—	— A	-	—
0921	1555400	495800	73.0	5.0	5/6/2009	39.05	6584.95	1.9	6624.00	—	— A	-	—
0922	1555200	492500	96.0	6.0	5/6/2009	58.83	6562.87	1.7	6621.70	—	— A	-	—
0924	1547500	438900	135.0	4.0	—	—	—	0.0	6592.90	112	6480.9 A	94-114	—
0925	1548600	480800	150.0	4.0	—	—	—	0.0	6601.40	140	6461.4 A	126-141	—
0926	1547500	472700	134.0	4.0	—	—	—	0.0	6596.90	132	6464.9 A	123-132	—
0935	1540115	476629	300.0	16.0	10/20/2009	93.00	6465.12	2.6	6558.12	125	6430.5 A	95-132	34.6
0936	1543621	472978	160.0	5.0	—	—	—	0.0	6573.38	160	6413.4 A	100-160	—
0939	1539766	483191	97.0	8.0	7/25/1996	59.31	6497.69	2.3	6557.00	—	— A	-	—

TABLE 2-4. WELL DATA FOR THE ALLUVIAL AQUIFER REGIONAL 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 BASE OF ALLUVIUM (FT-LSD)	ELEV. TO BASE OF ALLUVIUM (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	SATURATED THICKNESS
0940	1538651	483040	70.0	—	7/24/1996	57.30	6495.70	8.8	6553.00	—	— A	-	—
0942	1538300	483710	102.0	6.0	—	—	—	0.0	6550.20	95	6455.2 A	85-95	—
0947	1536206	491841	100.0	4.0	7/27/1994	54.63	6520.55	0.0	6575.18	95	6480.2 A	70-100	40.4
0950	1560400	498300	81.0	5.0	7/12/2000	25.70	6631.30	0.5	6657.00	—	— A	-	—
0952	1534550	477800	140.0	—	—	—	—	0.0	6550.00	—	— A	-	—
0975	1539780	482880	—	—	—	—	—	0.0	6556.00	—	— A	-	—
0976	1539750	483100	115.0	—	—	—	—	0.0	0.00	—	— A	-	—
0977	1539400	482730	—	—	12/9/1995	61.47	6495.53	1.0	6557.00	—	— A	-	—
0979	1539180	483340	105.0	5.0	7/10/2002	57.56	6593.44	0.0	6651.00	100	6551.0 A	90-100	42.4
0980	1539260	483080	—	—	11/8/1995	57.70	6497.30	0.0	6555.00	—	— A	-	—
0981	1538970	482820	—	—	—	—	—	0.0	6554.00	—	— A	-	—
0982	1538570	483400	110.0	5.0	—	—	—	0.0	6651.00	105	6546.0 A	90-105	—
0983	1538820	483250	—	—	—	—	—	0.0	6552.00	—	— A	-	—
0984	1538990	483100	103.0	5.0	—	—	—	0.0	6651.00	98	6553.0 A	88-98	—
0985	1539000	483260	115.0	5.0	7/18/1996	58.75	6592.25	0.0	6651.00	102	6549.0 A	90-110	43.3
0989	1538185	482813	—	—	11/2/1995	58.10	6494.90	1.0	6553.00	—	— A	-	—
0992	1539460	483800	100.0	5.0	—	—	—	0.0	6652.00	95	6557.0 A	85-95	—
0993	1537860	483680	102.0	5.0	—	—	—	0.0	6650.00	98	6552.0 A	85-98	—
0994	1539700	476240	144.0	6.0	10/2/2009	94.90	6460.10	0.0	6555.00	—	— A	95-110	—
										—	— L	95-110	—
0996	1537621	477989	138.0	5.0	12/12/2009	103.73	6448.79	1.7	6552.52	136	6414.8 A	126-136	34.0
0997	1539821	473807	—	—	3/12/1996	76.90	6491.40	0.0	6568.30	—	— A	-	—
0999	1524230	480187	185.0	—	—	—	—	0.0	6527.00	—	— A	-	—
1012	—	—	—	6.0	—	—	—	0.0	0.00	—	— A	-	—
1013	—	—	—	4.0	—	—	—	0.0	0.00	—	— A	-	—
1014	—	—	—	9.0	—	—	—	0.0	0.00	—	— A	-	—
1015	—	—	—	6.0	—	—	—	0.0	0.00	—	— A	-	—
1018	—	—	—	5.0	—	—	—	0.0	0.00	—	— A	-	—
1020	—	—	—	5.0	1/18/1996	15.17	-15.17	0.0	0.00	—	— A	-	—
1021	—	—	—	—	1/18/1996	18.00	-18.00	0.0	0.00	—	— A	-	—

Note: A = Alluvial Aquifer
MP = Measuring Point
LSD = Land Surface Datum
IN = Inches
FT = Feet
MSL = Mean Sea Level

3.0 GROUND-WATER HYDROLOGY OF THE UPPER CHINLE FORMATION

The Chinle Formation typically consists of shale and is a very good aquitard between the alluvial and San Andres aquifers in this area. Two main sandstones have been defined in the Chinle Formation in the Homestake area that are significant aquifers. These two sandstones have been named the Upper and Middle Chinle sandstones. A third Chinle aquifer, Lower Chinle aquifer, has been defined where the Chinle shale has developed enough secondary permeability to act as a limited aquifer.

Two faults exist in the area of the Grants project. These faults are shown on the USGS geologic map Grants quadrangle. Additional drilling and evaluation of geophysical logs has shown that these fault locations are slightly further to the west and east than those shown on the quadrangle map. Figure 3-1 shows the location of the West Fault which is west of the LTP and the East Fault which is near the eastern edge of the LTP and beneath the east margin of the STP. These faults are very important relative to the Chinle aquifers. The faults generally separate these Chinle Sandstones and act as impermeable barriers.

Figure 3-2 shows a typical cross section of the bedrock aquifers in this area (See Figure 3-1 for locations). This figure shows the saturated alluvium in green and the Upper Chinle sandstone in blue. This cross section shows the Upper Chinle sandstone subcropping against the alluvium and these two aquifers are in direct contact. This figure also shows the other two aquifers in the Chinle Formation and how the Middle Chinle subcrops against the alluvium. Two detailed geologic cross sections - Figures 3-3 and 3-4, located as shown on Figure 3-1, are presented to further illustrate the geologic setting. Figure 3-3 (cross section B-B') runs generally from the west to the east, south of the LTP. Cross section D-D' is shown on Figure 3-4. Cross-sections B-B' and D-D' were selected from numerous cross sections that have been developed because they have an orthogonal orientation through the central portion of the study area. The geologic cross section location map, Figure 3-1, also shows the location of the wells used to develop each of the cross sections. The depths and completion intervals of these wells are shown on the cross sections with a crosshatch line pattern indicating the completion interval. These cross sections portray the displacement of the Chinle aquifers by the faults and show some of the subcrops to the alluvial aquifer. The following section presents information on the Upper Chinle aquifer and its connection with the alluvial aquifer.

3.1 GEOLOGIC SETTING OF THE UPPER CHINLE AQUIFER

The Upper Chinle aquifer is the uppermost significant sandstone unit in the Chinle Formation near the Grants Project. Figure 3-5 presents the limits of the Upper Chinle aquifer and Upper Chinle well locations near the Grants Project area. This figure shows where the Upper Chinle sandstone exists between the two faults with Chinle shale above the Upper Chinle sandstone in a blue dot pattern. The Upper Chinle does not extend to the west of the West Fault but subcrops against the alluvial aquifer on its western and southern edges. The blue dot pattern also shows where the Upper Chinle exists east of the East Fault with the shale above the sandstone. The blue cross-hatched pattern shows where the Upper Chinle aquifer subcrops against saturated alluvium and a blue plus symbol pattern shows where the alluvium is not saturated over the Upper Chinle sandstone subcrop. The Upper Chinle sandstone aquifer and the alluvial aquifer are in direct connection in the saturated subcrop area and, therefore, act as one aquifer near this area.

3.2 STRUCTURE OF THE UPPER CHINLE AQUIFER

The elevation of the top of the Upper Chinle sandstone is shown in Figure 3-6. This structure map shows the difference in elevations on each side of the East Fault. Numerous cross sections have been developed to correlate geophysical logs in Upper Chinle drill holes and wells. These cross sections were used to develop this structure map. The structure on the south side of the project area turns up and dips to the northeast at a steeper gradient, which causes the sandstone to subcrop with the alluvial aquifer in the area of southern Felice Acres. Multi-well pump tests have shown that the

Upper Chinle aquifer acts as a separate ground-water system on each side of the East Fault.

3.3 UPPER CHINLE WATER LEVELS

Measured water levels in Homestake's Upper, Middle and Lower Chinle aquifer wells are presented in well data tables 3-1 through 3-4. Figure 3-7 presents water-level elevation contours of the Upper Chinle aquifer during the fall of 2008. The blue arrows on Figure 3-7 show the direction of ground-water flow, which is greatly influenced by fresh-water injection into the Upper Chinle at wells CW4R, CW5, CW13 and CW25 and collection from wells CE2, CE5, CE6, CE11 and CE12. Well CW13, an injection well on the east side of the East Fault, is in a high permeability zone of the Upper Chinle aquifer that parallels the East Fault. This high permeability zone extends to a distance of at least 1000 feet parallel and adjacent to the East Fault near well CW18. Injection of fresh water has created piezometric-surface mounds along the east side of the East Fault. The permeability is much smaller at greater distances to the east of the East Fault and, therefore, an easterly gradient occurs in the Upper Chinle away from the East Fault near injection well CW13. The CW13 injection affects water levels on the west side of the East Fault in the area of Upper Chinle well CW53. Water level changes in well CW53 respond quickly to change in levels in well CW13 showing that a good connection exists in the Upper Chinle where the East Fault pinches out south of well CW53.

Injection of fresh water into Upper Chinle well CW5 is causing ground water flow to the north and south of this area. The flow that moves to the south discharges to the alluvial aquifer in the subcrop area of the Upper Chinle, and the flow that moves to the north converges toward collection wells CE2, CE5, CE6, CE11 or CE12. Injection into Upper Chinle well CW25 was started in 2000, and this injection is causing ground water to flow from this well back toward these collection wells. The naturally occurring flow direction in the Upper Chinle aquifer west of the East Fault is from north to south. Well CW3 has not been pumped since January 2007 and therefore does not currently intercept any of the flow from the north.

Figure 3-8 shows the locations of Upper Chinle wells used to portray the water-level changes for this aquifer. Figure 3-9 shows the water level changes for Upper Chinle wells 494, 934, CW3, CW5, CW9 and CW18. The water levels in well CW3 have remained high except during the period the well was pumping. The changes in water levels from wells 934 and CW18 are lower during pumping periods for these two wells but generally have been significantly higher due to the CW13 injection since 1996. Water levels in well 494 have overall been steady with a small affect from the irrigation supply pumping.

3.4 UPPER CHINLE AQUIFER PROPERTIES

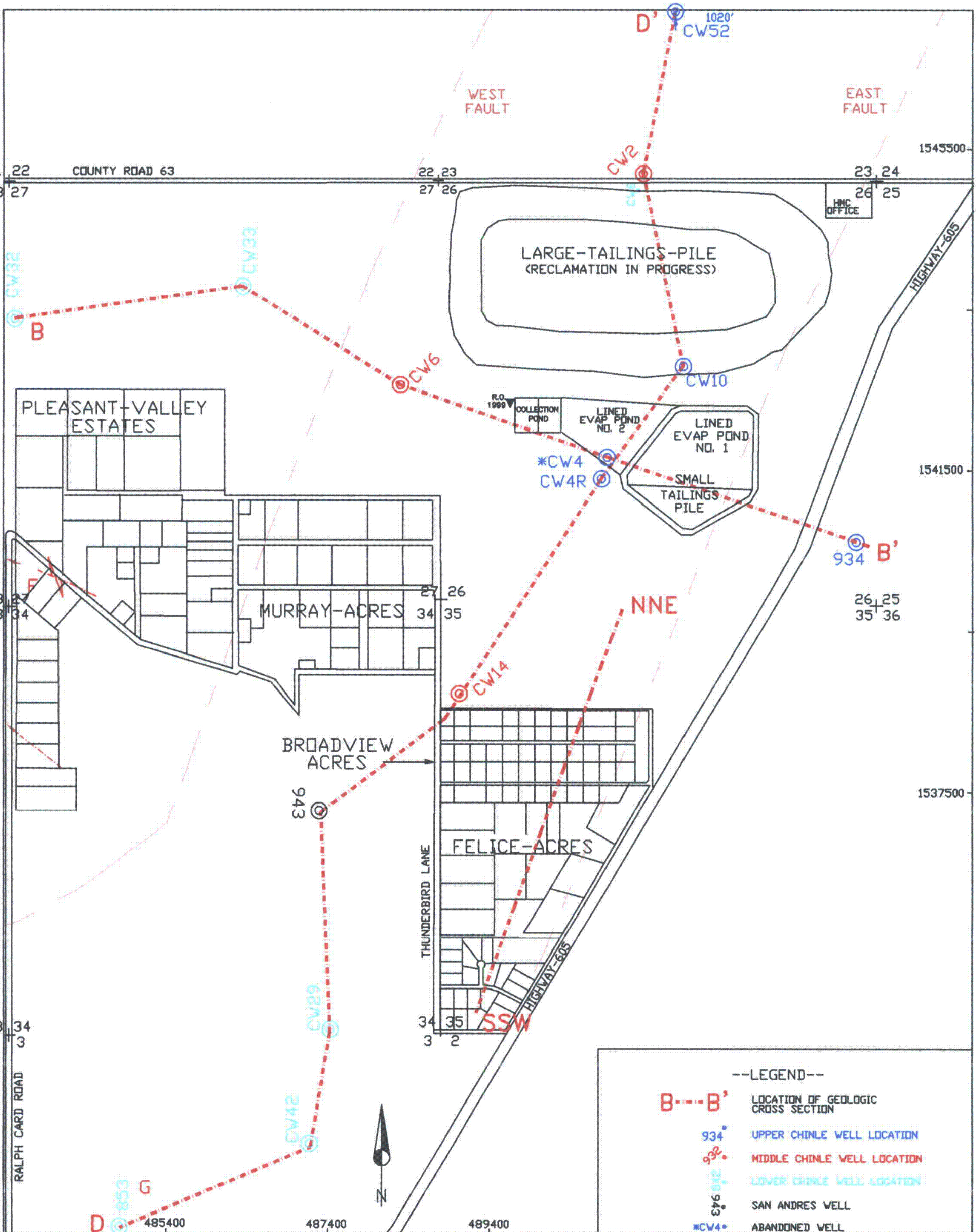
Properties in the Upper Chinle aquifer vary significantly over the site due to the effects of secondary permeability, specifically fracturing of the sandstone due to faulting. Transmissivity (hydraulic conductivity times aquifer thickness) is the most influential aquifer conveyance property for a confined aquifer. Adjacent to the east side of the East Fault, transmissivity of the Upper Chinle aquifer is approximately 2000 gal/day/ft (see Figure 3-10), but it decreases to less than 100 gal/day/ft east of this area. High transmissivity values also exist in the area west of the East Fault on the west side of the STP area. The zone of a higher transmissivity east of the East Fault is well correlated with their proximity to the fault and probably is a result of fracturing of the sandstone during displacement along the faults. The zone of high transmissivity west of the East Fault is offset to the west of the west side of the East Fault.

Hydraulic conductivity of the Upper Chinle aquifer varies from less than 0.01 ft/day to greater than 100 ft/day. The Upper Chinle aquifer is a confined aquifer and, in general, has a storage coefficient estimated to be 5E-05. The specific yield of this confined aquifer is estimated to be 0.1, which is significantly less than that of the alluvial aquifer.

3.5 UPPER CHINLE WATER QUALITY

The Upper Chinle water quality has been defined in each annual report in Section 5. That report section presents sulfate, TDS, chloride, uranium, selenium, molybdenum, nitrate, radium-226 and 228, vanadium and thorium 230 concentration maps for the Upper Chinle aquifer. Time concentration plots are also presented in each annual report for the Upper Chinle.

Figure 3-11 presents the uranium concentrations for the Upper Chinle aquifer for 2008. This figure shows the site standard for the Upper Chinle aquifer with a mixing zone site standard of 0.18 mg/l and a non-mixing zone site standard of 0.09 mg/l. The blue dot pattern depicts where uranium concentrations exceed 0.18 mg/l in the mixing zone while the blue dashed pattern shows where concentrations in the non-mixing zone exceed 0.09 mg/l. These two patterns show where the Upper Chinle aquifer needs restoration with respect to uranium concentrations. The annual report should be reviewed to identify where restoration in other parameters is needed in the Upper Chinle aquifer.



SCALE: 1"=1600' | HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W | DATE: 1/6/10

FIGURE 3-1. LOCATIONS OF GEOLOGIC CROSS SECTIONS

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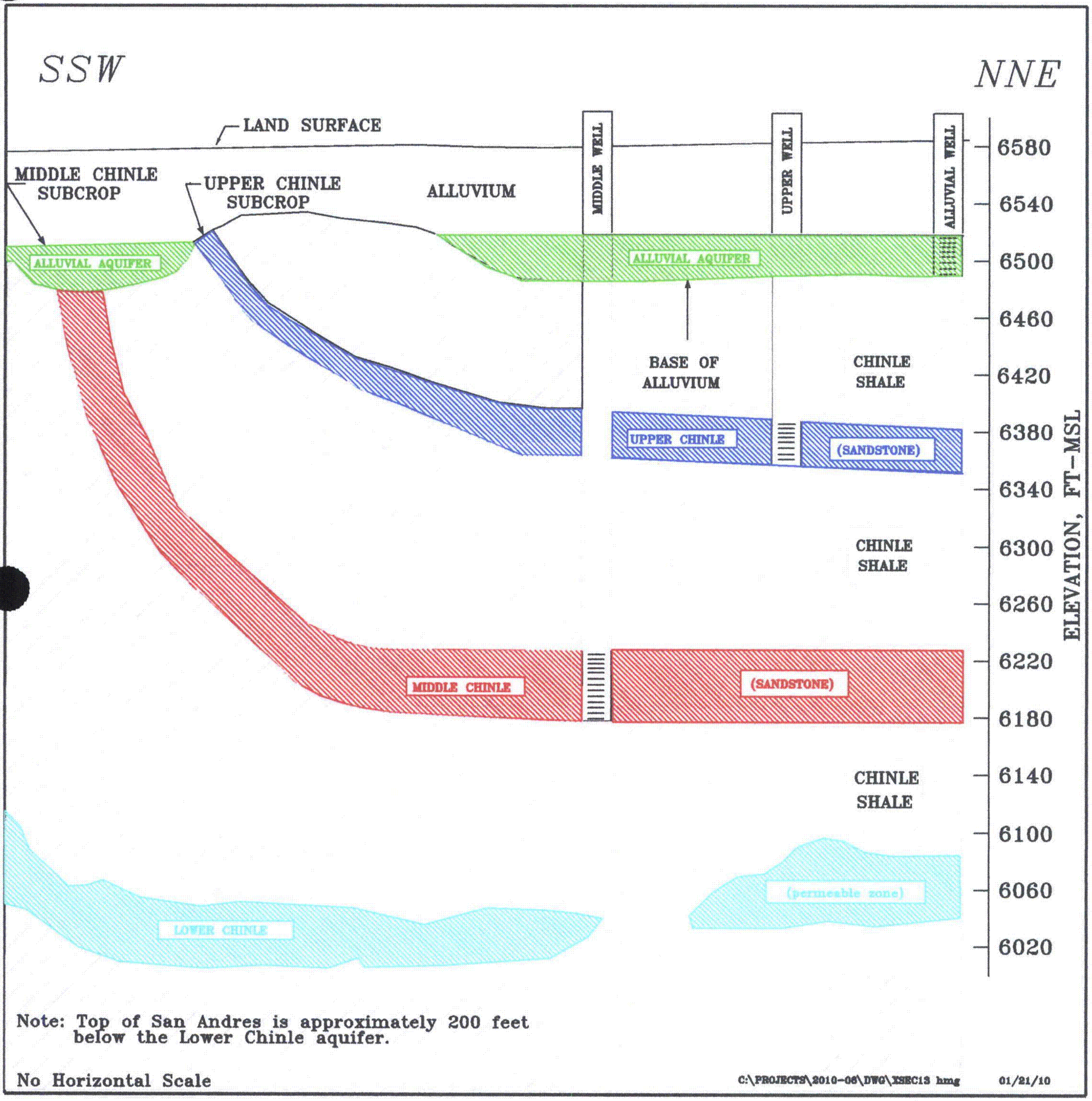

FIGURE 3-2. TYPICAL GEOLOGIC CROSS SECTION

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THAT CAN BE VIEWED AT THE RECORD TITLED:

FIGURE 3-3
"GEOLOGIC CROSS-SECTION B-B' WITH POST RESTORATION FLOW DIRECTION
Page 3-8"

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THIS PAGE IS AN OVERSIZED DRAWING OR FIGURE,

THAT CAN BE VIEWED AT THE RECORD TITLED:
FIGURE 3-4
"GEOLOGIC CROSS-SECTION D-D' WITH POST RESTORATION FLOW DIRECTION
Page 3-9"

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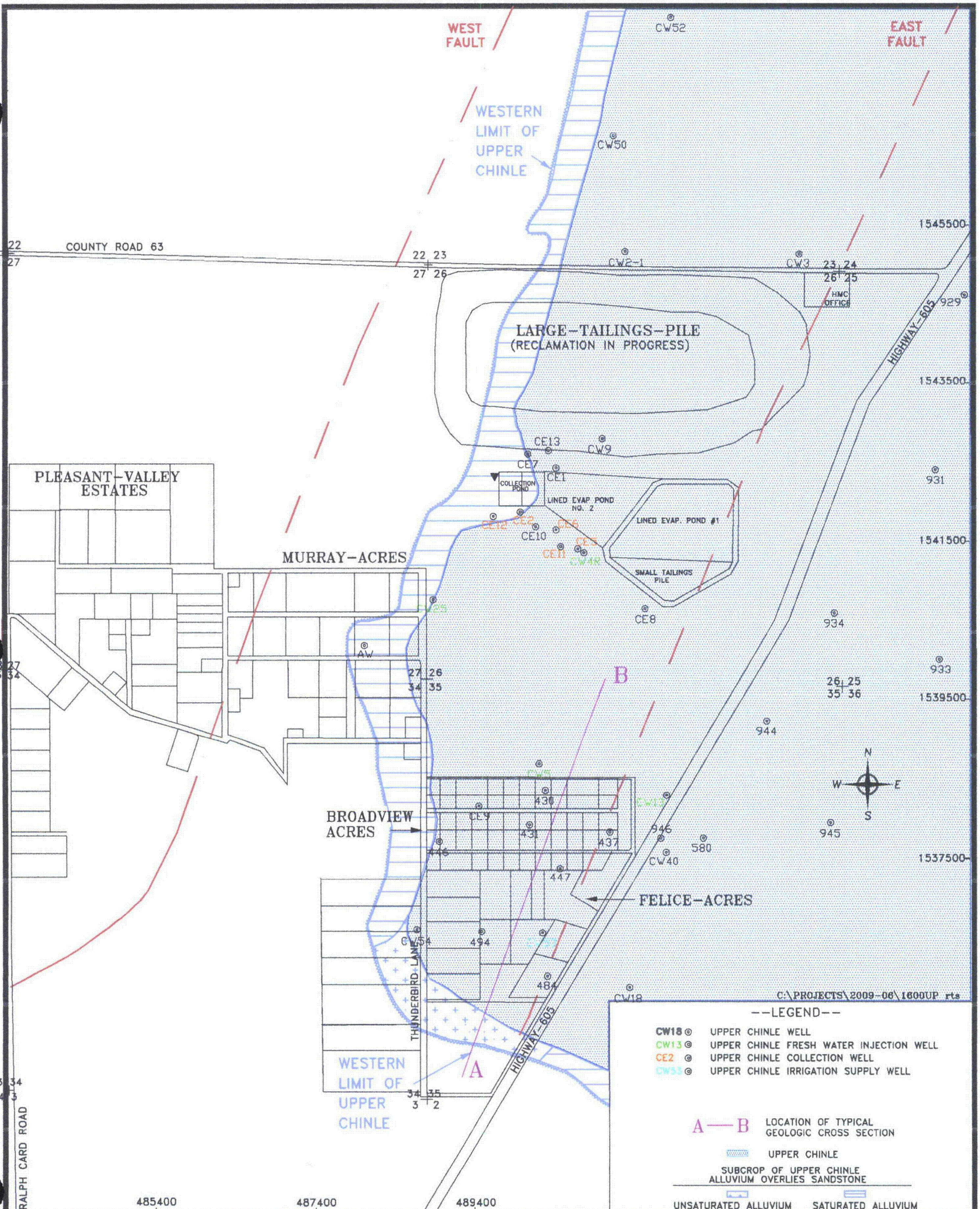
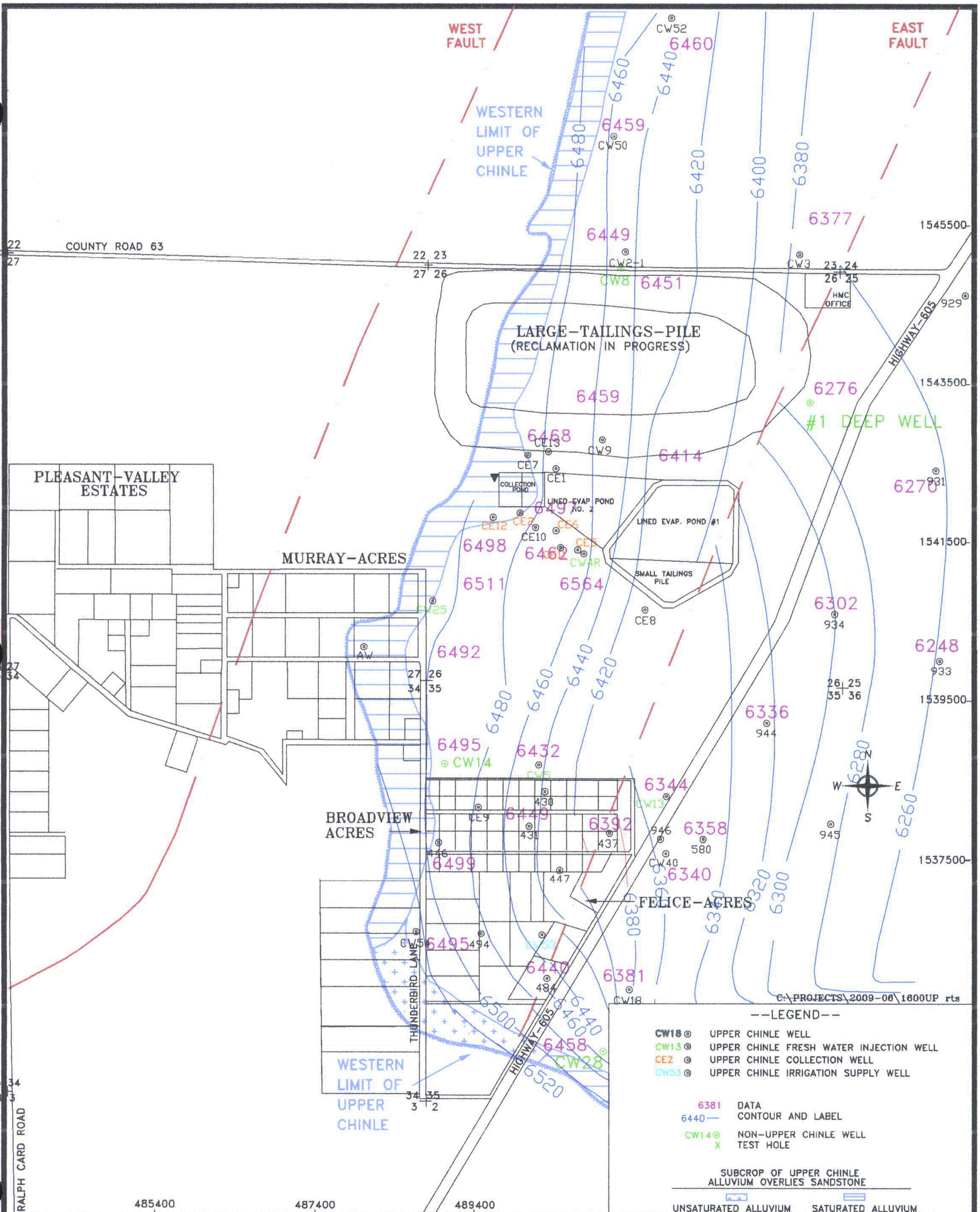


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W	DATE: 1/6/10
FIGURE 3-5. LIMITS OF UPPER CHINLE AQUIFER AND WELL LOCATIONS	SCALE: 1"=1600'
	PAGE: 3-10

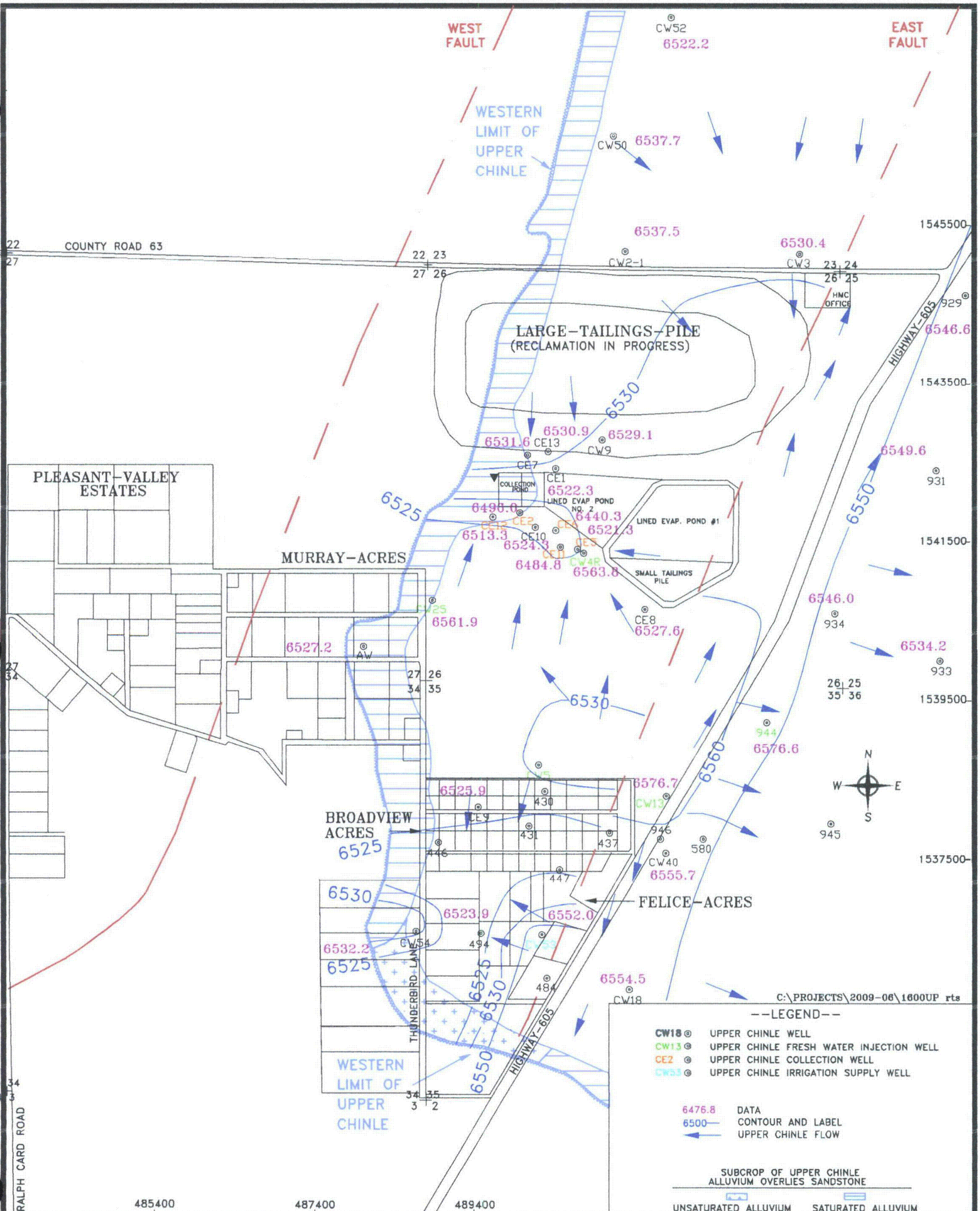


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 1/6/10

FIGURE 3-6. ELEVATION OF THE TOP OF THE UPPER CHINLE AQUIFER, FT-MSL

SCALE: 1"=1600'

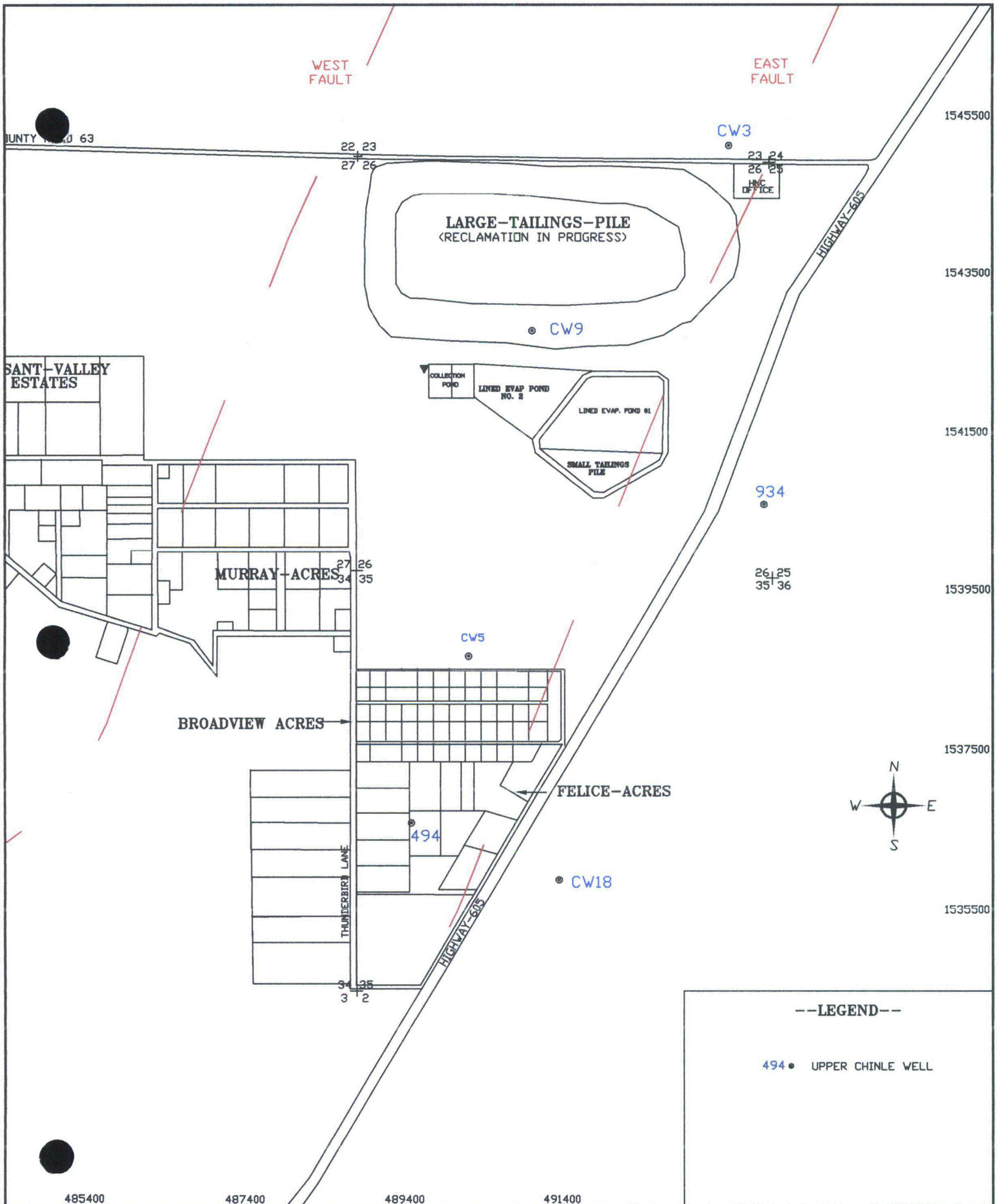


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 1/6/10

FIGURE 3-7. WATER-LEVEL ELEVATIONS OF THE UPPER CHINLE AQUIFER, FALL 2008, FT-MSL

SCALE: 1"=1600'



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DATE: 1/6/10

FIGURE 3-8. LOCATIONS OF UPPER CHINLE WELLS USED TO MONITOR WATER-LEVEL CHANGES

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

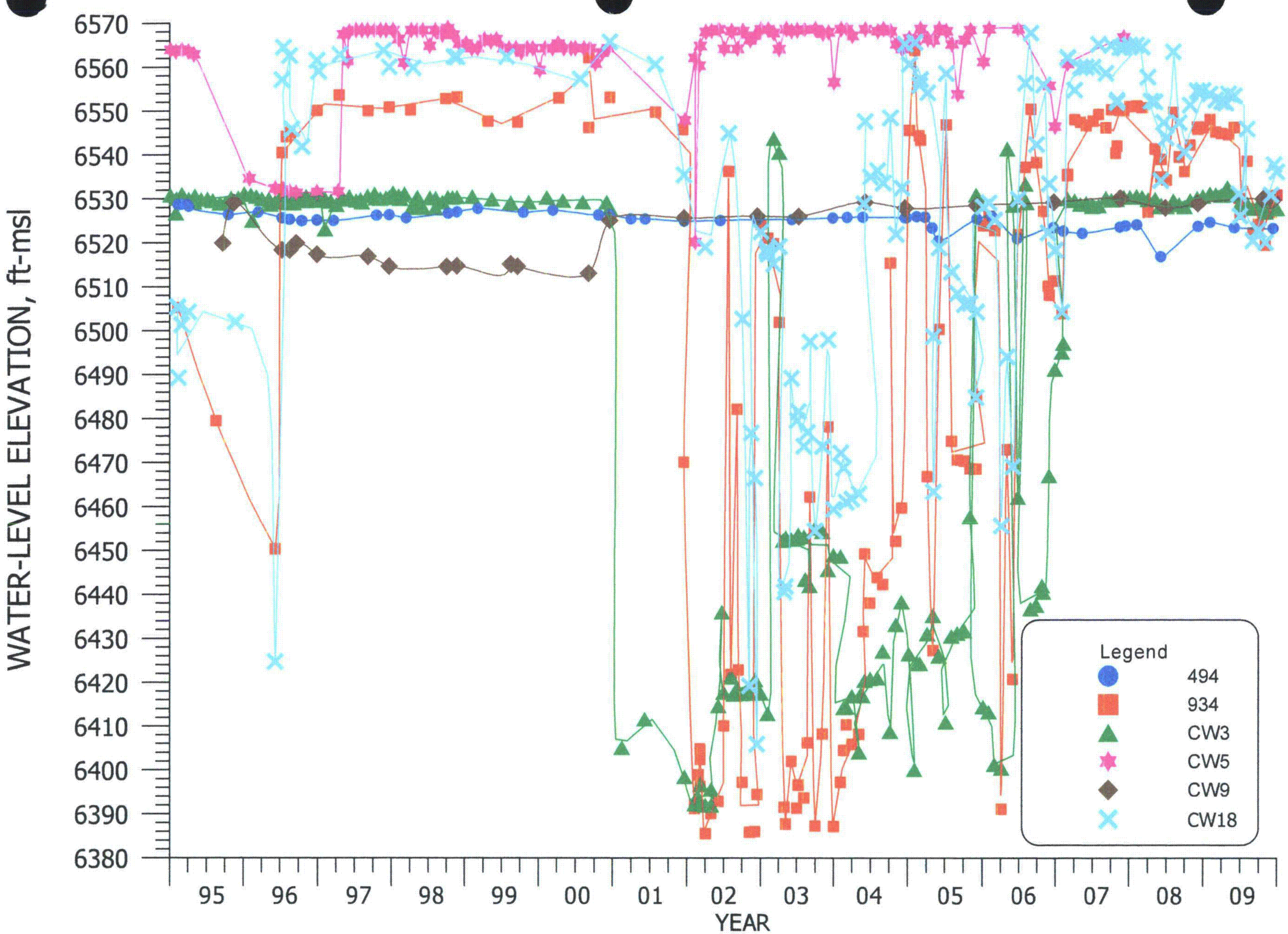
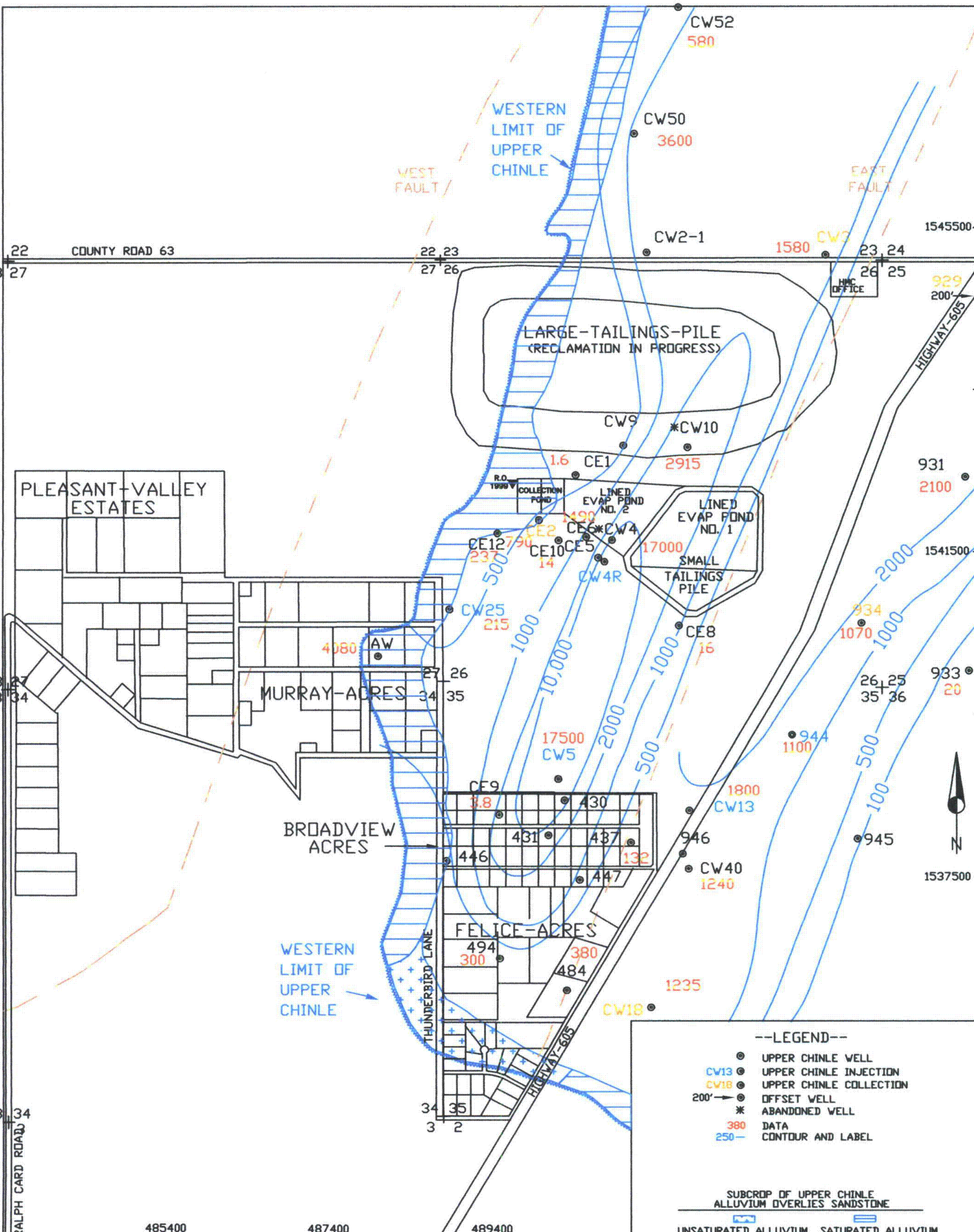


FIGURE 3-9. WATER-LEVEL ELEVATION FOR WELLS 494, 934, CW3, CW5, CW9 AND CW18, FT-MSL.



SCALE: 1"=1600'	HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W	DATE: 12/30/09

FIGURE 3-10. TRANSMISSIVITY OF THE UPPER CHINLE AQUIFER, GAL/DAY/FT

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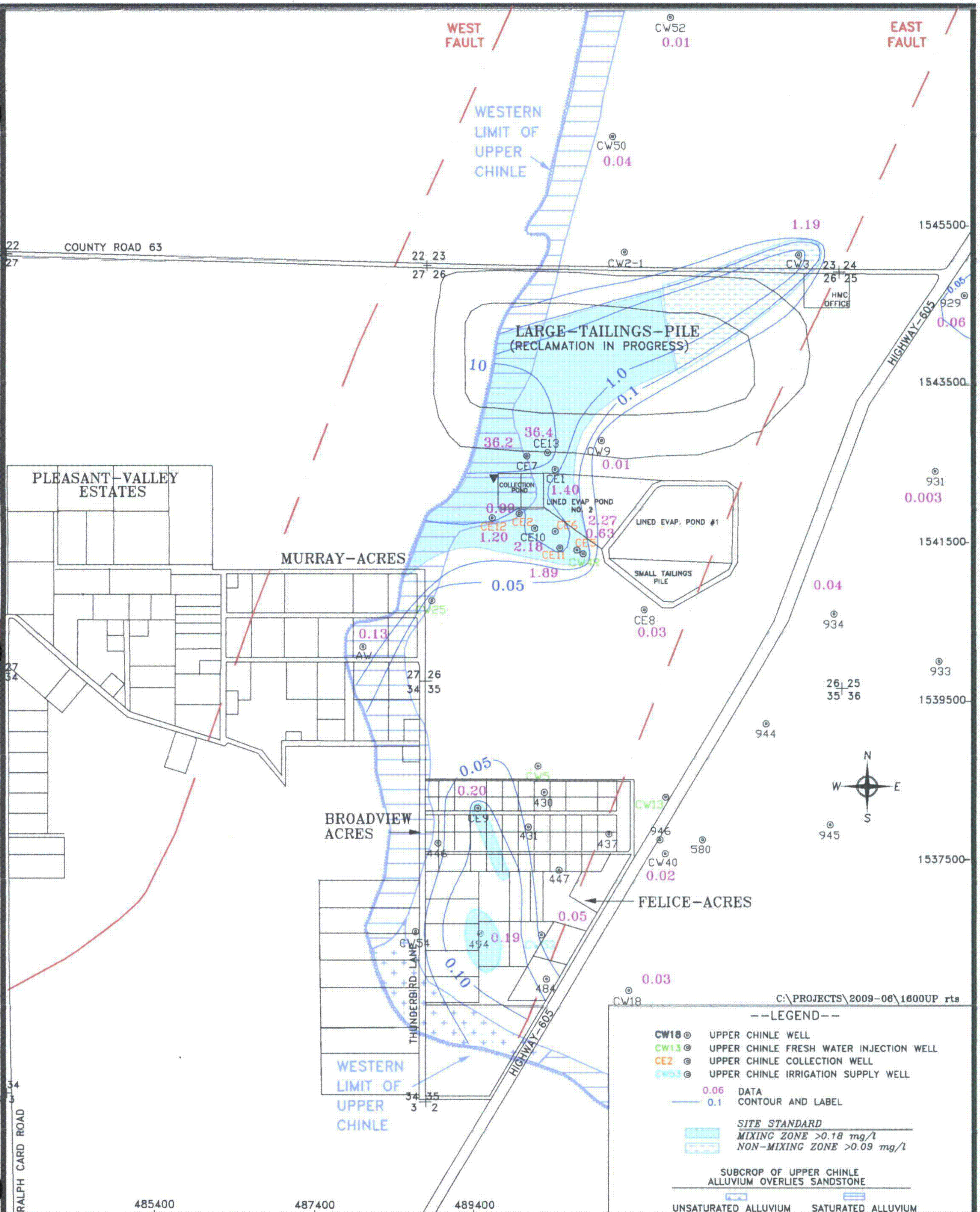


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W	DATE: 1/6/10
FIGURE 3-11. URANIUM CONCENTRATIONS OF THE UPPER CHINLE AQUIFER, 2008, mg/l	SCALE: 1"=1600'
	PAGE: 3-16

TABLE 3-1. WELL DATA FOR THE CHINLE HOMESTAKE WELLS.

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 AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)		CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
0930	1542848	494997	410.0	6.0	12/14/2009	178.28	6420.26	0.0	6598.54	30	6569	A	-	—
										306	6293	U	330-400	Upper
										414	6185	M	-	—
0931	1542461	495207	366.7	6.0	12/14/2009	80.43	6530.13	0.9	6610.56	339	6271	U	-	Upper
0934	1540641	493941	293.0	6.0	12/28/2009	54.60	6530.99	2.0	6585.59	30	6554	A	-	—
										282	6302	U	-	Upper
CE1	1541923	489979	137.0	5.0	12/12/2009	15.88	6554.31	4.4	6570.19	75	6491	A	-	—
										106	6460	U	98-138	Upper
CE2	1542475	490434	119.7	5.0	12/28/2009	62.70	6513.65	1.8	6576.35	74	6501	U	78-118	Upper
										74	6501	A	-	—
CE5	1541453	490695	140.0	5.0	12/28/2009	46.42	6522.13	1.6	6568.55	63	6504	A	-	—
										103	6464	U	100-140	Upper
CW1	1545235	490295	325.0	5.0	12/28/2009	155.30	6429.92	0.7	6585.22	105	6480	A	-	—
										272	6313	M	212-323	Middle
CW2	1545212	491302	355.0	5.0	12/28/2009	143.20	6442.28	1.7	6585.48	85	6499	A	-	—
										136	6448	U	-	—
										305	6279	M	306-353	Middle
CW2-1	1545212	491302	168.0	5.0	12/9/2009	47.42	6538.06	1.7	6585.48	85	6499	A	-	—
										136	6448	U	243-253	Upper
CW3	1545200	493496	235.0	5.0	12/28/2009	59.29	6527.89	0.7	6587.18	70	6516	A	-	—
										209	6377	U	210-235	Upper
										348	6238	M	-	—
* CW4	1541682	490874	145.0	5.0	9/7/1994	39.06	6531.89	0.8	6570.95	70	6500	A	-	—
										112	6458	U	110-145	Upper
CW4R	1541416	490787	138.9	6.0	6/29/2009	9.55	6559.18	1.3	6568.73	61	6506	A	-	—
										104	6463	U	102-142	Upper
CW5	1538729	490221	170.0	5.0	12/3/2007	2.41	6566.93	1.6	6569.34	65	6503	A	-	—
										137	6431	U	135-170	Upper
CW6	1542588	488301	282.0	4.0	12/9/2009	112.28	6463.36	1.0	6575.64	236	6339	M	246-276	Middle
CW7	1545285	488773	—	—	10/17/1995	60.80	6522.79	0.0	6583.59	—	—	C	120-130	Chinle
CW8	1545009	491238	285.0	6.0	12/5/2000	38.90	6552.93	0.0	6591.83	—	—	C	276-286	Chinle
										85	6507	A	-	—
CW9	1542840	491015	180.0	5.0	12/9/2009	62.00	6529.83	0.0	6591.83	—	—	U	130-180	Upper
										80	6512	A	-	—
* CW10	1542823	491803	185.0	5.0	11/13/1995	50.03	6537.86	0.0	6587.89	75	6513	A	-	—
										167	6421	U	155-185	Upper
CW13	1538349	491827	267.7	6.0	8/3/2009	2.00	6574.70	2.7	6576.70	230	6344	U	225-265	Upper
										378	6196	M	-	—
CW14	1538786	488884	360.9	6.0	11/2/2009	22.00	6544.09	2.9	6566.09	56	6507	A	-	—
										66	6497	U	-	—

TABLE 3-1. WELL DATA FOR THE CHINLE HOMESTAKE 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 AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
CW14	1538786	488884	360.9	6.0	11/2/2009	22.00	6544.09	2.9	6566.09	310	6253 M	278-358	Middle
CW17	1545279	487771	108.0	5.0	12/14/2009	50.41	6538.91	3.1	6589.32	73	6513 A	-	—
										85	6501 M	83-103	Middle
CW24	1545773	487760	118.0	5.0	12/14/2009	50.28	6538.39	3.0	6588.67	61	6525 A	-	—
										65	6521 M	78-118	Middle
CW25	1540802	488866	102.0	5.0	3/2/2009	96.80	6470.40	3.0	6567.20	53	6511 U	62-102	Upper
										53	6511 A	-	—
CW32	1543413	483523	300.0	6.0	12/14/2009	141.51	6425.77	1.7	6567.28	70	6496 A	-	—
										157	6409 L	218-303	—
										157	6409 L	158-188	Lower
CW33	1543814	486347	347.0	6.0	12/14/2009	105.91	6468.98	1.8	6574.89	83	6490 A	-	—
										272	6301 L	307-347	—
										272	6301 L	267-287	Lower
CW34	1547827	487707	65.7	6.0	8/27/1996	65.65	6528.75	3.2	6594.40	20	6571 A	-	—
										40	6551 M	33-63	Middle
CW35	1547001	488794	120.0	5.0	12/14/2009	51.96	6539.21	1.9	6591.17	63	6526 A	-	—
										90	6499 M	93-118	Middle
CW50	1546687	491159	170.9	5.0	12/9/2009	49.76	6537.24	3.0	6587.00	128	6456 U	130-170	Upper
CW52	1548171	491887	180.0	5.0	12/9/2009	70.32	6527.68	2.0	6598.00	138	6458 U	140-180	Upper
										302	6294 M	-	—
WR25	1545267	487430	113.3	5.0	12/14/2009	48.01	6538.45	2.8	6586.46	50	6534 A	-	—
										71	6513 M	71-111	Middle

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

TABLE 3-2. WELL DATA FOR THE CHINLE BROADVIEW AND FELICE ACRES WELLS.

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)		CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
					Broadview									
0430	1538469	490300	145.0	—	—	—	—	0.0	6568.00	—	—	A	-	Alluvium
										114	6454	U	-	Upper
0431	1538045	490090	130.0	6.0	4/12/1994	35.00	6533.00	0.0	6568.00	60	6508	A	125-130	Alluvium
										118	6450	U	125-130	Upper
0434	1538370	489420	280.0	6.0	10/4/2007	39.51	6524.17	0.0	6563.68	75	6489	A	-	—
										265	6299	M	-	Middle
0436	1538439	488947	295.0	5.0	10/29/1996	71.82	6490.91	0.0	6562.73	90	6473	A	-	—
										280	6283	M	280-295	Middle
0437	1537859	491128	340.0	5.0	10/29/1996	63.23	6508.77	1.8	6572.00	90	6480	A	-	—
										180	6390	U	-	—
										280	6290	M	240-300	Middle
0446	1537830	488960	110.0	6.0	9/8/1983	41.28	6518.72	0.0	6560.00	60	6500	U	60-95	Upper
										60	6500	A	60-95	Alluvium
0447	1537490	490480	142.0	6.0	4/11/1985	41.18	6526.82	0.0	6568.00	—	—	A	120-142	Alluvium
										80	6488	U	120-142	Upper
0449	1537440	488830	267.0	6.0	12/5/1994	63.42	6496.58	0.0	6560.00	—	—	M	-	Middle
					Felice Acres									
0481	1538350	490180	320.0	4.0	—	—	—	0.0	6568.00	110	6458	A	270-310	Alluvium
										270	6298	M	270-310	Middle
0482	1536981	489579	260.0	5.0	12/10/2009	38.37	6524.29	0.0	6562.66	80	6483	A	220-260	Alluvium
										210	6353	M	220-260	Middle
0483	1536586	489753	280.0	5.0	10/6/2009	53.11	6509.55	0.0	6562.66	—	—	M	-	Middle
										—	—	A	-	Alluvium
0484	1536448	490356	320.0	5.0	12/26/1996	39.43	6524.55	0.0	6563.98	38	6526	A	-	—
										129	6435	U	-	—
										280	6284	M	220-300	Middle
0485	1535800	489630	260.0	6.0	7/18/1996	70.90	6494.10	0.0	6565.00	35	6530	A	-	—
										70	6495	U	-	—
										223	6342	M	220-260	Middle
0486	1535800	489024	260.0	4.0	8/4/2004	90.40	6468.00	0.0	6558.40	—	—	M	200-260	Middle
										21	6537	A	-	—
										21	6537	U	-	—
0487	1536175	488950	260.0	—	7/24/1996	49.20	6511.80	0.0	6561.00	—	—	M	-	Middle
0488	1536500	488950	190.0	6.0	8/19/2003	113.80	6448.20	0.0	6562.00	—	—	M	-	Middle
0489	1536850	488950	—	—	—	—	—	0.0	6562.00	—	—	M	-	Middle
0493	1536702	489492	300.0	5.0	12/10/2009	110.36	6449.92	0.9	6560.28	40	6519	A	-	—
										65	6494	U	-	—
										236	6323	M	270-300	Middle

TABLE 3-2. WELL DATA FOR THE CHINLE BROADVIEW AND FELICE ACRES WELLS. (cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)		CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
0494	1536689	489494	85.0	5.0	12/10/2009	36.72	6523.42	0.6	6560.14	40	6520	A	-	---
										65	6495	U	65-85	Upper
CW44	1535048	488891	208.0	6.0	12/10/2009	63.93	6496.81	2.5	6560.74	94	6464	A	-	Alluvium
										130	6428	M	69-208	Middle
CW45	1535036	489494	193.0	5.0	12/10/2009	62.18	6499.13	0.6	6561.31	90	6471	A	-	---
										166	6395	M	163-193	Middle
CW46	1534642	489595	187.3	5.0	12/18/2006	72.20	6490.06	1.5	6562.26	88	6473	A	-	---
										112	6449	M	125-185	Middle

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

TABLE 3-3. WELL DATA FOR THE CHINLE MURRAY ACRES AND PLEASANT VALLEY WELLS.

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
						Murray							
0803	1540800	487430	---	6.0	9/19/1983	84.86	6476.14	0.0	6561.00	---	---	C 85-180	Chinle
										85	6476	A 85-180	Alluvium
0807	1540598	488610	287.0	6.0	---	---	---	0.0	6565.00	63	6502	A -	---
										275	6290	M 275-285	Middle
0808	1540080	487490	290.0	5.0	---	---	---	1.6	6561.00	85	6474	A -	---
										255	6304	M 260-290	Middle
0812	1539910	488505	300.0	6.0	---	---	---	0.6	6566.00	68	6497	A -	---
										268	6297	M 264-284	Middle
0813	1539300	488620	280.0	6.0	---	---	---	0.0	6565.00	63	6502	A -	---
										230	6335	M 235-255	Middle
0814	1539030	488590	280.0	6.0	---	---	---	0.0	6565.00	---	---	M -	Middle
0816	1539110	487705	255.0	6.0	---	---	---	0.0	6557.00	35	6522	A -	---
										240	6317	M 240-250	Middle
0817	1539190	487590	---	---	7/22/1995	70.34	6486.66	0.0	6557.00	---	---	M -	Middle
0818	1539085	487547	243.0	4.0	---	---	---	0.0	6557.00	62	6495	A -	---
										230	6327	M 223-243	Middle
0819	1539000	487000	222.0	6.0	---	---	---	0.0	6557.00	62	6495	A -	---
										210	6347	M 210-220	Middle
0820	1539254	486513	230.0	---	5/9/2002	99.20	6458.80	0.0	6558.00	---	---	M 125-230	Middle
0821	1538810	487320	260.0	7.0	11/1/1994	35.88	6524.12	0.0	6560.00	---	---	M -	Middle
0823	1540150	487720	265.0	6.0	---	---	---	0.0	6561.00	---	---	M 257-267	Middle
										40	6521	A -	---
ACW	1540235	488070	325.0	6.0	12/14/2009	118.54	6445.26	1.2	6563.80	40	6523	A -	---
										57	6506	U -	---
										264	6299	M 265-325	Middle
AW	1540235	488015	156.0	6.0	12/14/2009	35.09	6528.34	0.1	6563.43	63	6500	A -	Alluvium
										100	6463	U 66-155	Upper
HCW	1541060	487785	295.0	6.0	7/20/2000	75.61	6486.39	1.0	6562.00	82	6479	A -	---
										264	6297	M 264-295	Middle
WCW	1541045	488520	307.0	6.0	12/9/2009	122.21	6445.16	0.8	6567.37	83	6484	A -	---
										254	6313	M 257-307	Middle
						Pleasant Valley							
0530	1540229	484358	490.0	5.0	10/30/1998	95.78	6463.41	1.5	6559.19	265	6293	L -	Lower
0832	1539263	485629	280.0	4.0	---	---	---	0.0	6557.00	85	6472	A -	---
										240	6317	L 238-278	Lower
0837	1540995	485950	200.0	5.0	9/7/1983	59.87	6507.13	0.0	6567.00	80	6487	A -	---
										160	6407	L 160-200	Lower
* 0842	1541650	483980	250.0	---	---	---	---	0.0	6558.00	---	---	L -	Lower

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

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
0900	1540800	483700	172.1	---	7/24/1995	91.41	6468.59	1.5	6560.00	---	--- L	-	Lower

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

TABLE 3-4. WELL DATA FOR THE CHINLE REGIONAL WELLS.

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 AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
0536	1539560	479701	160.0	5.0	9/12/2000	144.70	---	-2.0	---	---	---	L -	Lower
0536R	1539888	479654	264.0	4.0	12/5/2007	139.06	---	---	---	---	---	L -	Lower
0653	1533283	486570	206.0	6.0	12/10/2009	79.85	6465.12	1.3	6544.97	97	6447	A 69-206	Alluvium
										135	6409	L -	Lower
0850	1534652	486044	54.0	5.0	12/10/2009	55.71	6493.44	3.2	6549.15	37	6509	A -	---
										37	6509	M 29-54	Middle
0853	1532124	484824	95.0	5.0	12/10/2009	82.99	6458.39	1.7	6541.38	60	6480	L 55-95	Lower
										60	6480	A -	---
0859	1534549	487426	83.0	5.0	12/10/2009	71.06	6481.70	2.7	6552.76	52	6498	M 50-83	Middle
0901	1531531	492847	270.0	5.0	11/4/1981	46.88	6552.12	0.0	6599.00	40	6559	A -	---
										190	6409	L 240-260	Lower
0902	1533700	488800	150.0	6.0	1/28/1995	52.10	6507.90	0.0	6560.00	72	6488	M 78-102	Middle
										72	6488	A -	---
0903	1530250	486900	281.0	5.0	---	---	---	0.0	6559.00	220	6339	L 120-260	Lower
0904	1531100	487150	200.0	4.0	---	---	---	0.0	6560.00	---	---	L 170-200	Lower
0908	1534430	483325	282.8	5.0	11/3/1998	81.16	6463.21	1.5	6544.37	107	6436	A -	---
										232	6311	L -	Lower
0909	1531900	483400	140.0	4.0	5/7/2009	92.20	6446.70	0.0	6538.90	112	6427	A 80-135	Alluvium
										112	6427	L 80-135	Lower
0927	1548300	491700	---	---	10/8/2008	160.00	6435.00	1.0	6595.00	---	---	C -	Chinle
0929	1544684	495585	320.0	5.0	12/28/2009	50.52	6542.05	2.0	6592.57	---	---	U 290-320	Upper
0932	1540436	495407	501.0	6.0	4/19/2001	86.73	6515.38	0.0	6602.11	354	6248	U -	---
										492	6110	M 450-490	Middle
0933	1540087	495231	---	5.0	12/14/2009	78.28	6522.23	0.5	6600.51	---	---	U -	Upper
0937	1542180	471478	182.0	5.0	---	---	---	0.0	6578.00	70	6508	A -	---
										160	6418	L 95-182	Lower
0944	1539280	493091	300.0	5.0	12/28/2009	57.45	6531.16	1.6	6588.61	64	6523	A -	---
										252	6335	U 220-280	Upper
0945	1537986	493900	300.0	---	3/21/1985	92.41	6498.08	0.0	6590.49	---	---	U -	Upper
0946	1537804	491754	260.0	5.0	10/17/1996	37.45	6541.59	0.0	6579.04	220	6359	U 230-260	Upper
0948	1535190	490400	255.0	5.0	---	---	---	0.0	6568.10	200	6368	M 200-255	Middle
0949	1540350	483600	551.0	6.0	2/13/2008	130.60	6431.70	0.0	6562.30	112	6450	A -	---
										155	6407	L 260-290	Lower
										460	6102	S 505-551	San Andres
										460	6102	S 400-493	San Andres
0954	1534187	483910	307.0	5.0	12/27/1994	77.22	6467.78	0.0	6545.00	225	6320	L 285-307	Lower
0960	1534730	490110	305.0	6.0	4/5/1995	67.46	6497.54	0.0	6565.00	280	6285	M 285-305	Middle
0961	1534190	489720	240.0	5.0	4/5/1995	67.40	6497.60	6.9	6565.00	200	6358	M 200-240	Middle

TABLE 3-4. WELL DATA FOR THE CHINLE REGIONAL 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 AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
0962	1533750	489796	238.0	6.0	---	---	---	0.0	6560.00	225	6335	M 220-238	Middle
0963	1532555	488792	—	4.0	—	—	—	0.0	6557.00	—	—	L -	Lower
0964	1531817	488371	200.0	6.0	—	—	—	0.0	6560.00	170	6390	L 170-200	Lower
0965	1531550	489100	200.0	4.0	8/21/2003	3.00	6572.00	0.0	6575.00	—	—	L 130-200	Lower
0966	1531300	489000	---	---	—	---	---	0.0	6575.00	—	—	L -	Lower
0967	1530500	487600	—	—	—	—	—	0.0	6570.00	—	—	L -	Lower
0968	1529700	488400	—	---	---	---	---	0.0	6630.00	---	—	L -	Lower
0969	1529400	488450	—	—	—	—	—	0.0	6640.00	—	—	L -	Lower
0970	1529100	488500	---	5.0	—	---	---	0.0	6660.00	---	—	L -	Lower
0988	1538270	482400	155.0	5.0	7/18/1996	59.86	6589.14	1.3	6649.00	18	6630	A -	—
										152	6496	L 152-155	Lower
0990	1537800	482840	—	—	—	—	—	0.5	6550.00	—	—	L -	Lower
0994	1539700	476240	144.0	6.0	10/2/2009	94.90	6460.10	0.0	6555.00	—	—	A 95-110	Alluvium
										—	—	L 95-110	Lower
CW15	1536259	485961	134.6	5.0	12/12/2009	102.47	6448.85	2.6	6551.32	50	6499	A -	—
										91	6458	M 73-133	Middle
										311	6238	L -	—
CW16	1534747	488507	—	5.0	12/26/1996	68.02	6490.52	0.0	6558.54	82	6477	A -	—
										82	6477	M 112-152	Middle
CW18	1535924	491378	230.7	5.0	12/28/2009	36.35	6536.30	1.5	6572.65	90	6481	A -	—
										190	6381	U 177-232	Upper
										340	6231	M -	—
CW26	1534116	489593	300.0	5.0	12/14/2009	108.66	6452.77	0.5	6561.43	50	6511	M -	—
										50	6511	A -	—
										231	6330	L 245-285	Lower
CW27	1534109	489600	110.0	5.0	12/14/2009	70.56	6492.32	1.9	6562.88	50	6511	A -	—
										50	6511	M 80-110	Middle
CW28	1535112	491008	370.0	5.0	12/28/2009	164.30	6407.38	1.9	6571.68	90	6480	A -	—
										110	6460	U -	—
										294	6276	M 280-360	Middle
CW29	1534551	487435	290.0	5.0	12/10/2009	95.93	6456.29	1.7	6552.22	52	6499	M -	—
										52	6499	A -	—
										228	6323	L 230-270	Lower
CW30	1536642	488704	251.5	5.0	12/14/2004	8.00	6550.31	2.0	6558.31	35	6521	A -	—
										220	6336	M 219-249	Middle
CW31	1540689	482738	311.0	6.0	12/14/2009	87.91	6472.35	2.0	6560.26	111	6447	A -	—
										254	6304	L 291-311	---
										254	6304	L 231-271	—
										254	6304	L 136-156	Lower
CW36	1540053	481329	180.0	5.0	12/9/2009	79.48	6471.61	2.8	6551.09	96	6452	A -	—

TABLE 3-4. WELL DATA FOR THE CHINLE REGIONAL 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 AQUIFER (FT-LSD)	ELEV. OF AQUIFER (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	AQUIFER
CW36	1540053	481329	180.0	5.0	12/9/2009	79.48	6471.61	2.8	6551.09	152	6396	L 155-177	Lower
CW37	1537240	484853	150.1	5.0	12/12/2009	60.93	6490.24	1.3	6551.17	55	6495	A -	---
										100	6450	L 100-150	Lower
CW38	1540103	483429	174.8	5.0	11/14/1997	55.18	6500.42	2.1	6555.60	108	6446	A -	---
										130	6424	L 133-173	Lower
CW39	1537260	483754	126.3	5.0	12/12/2009	60.88	6489.83	3.4	6550.71	40	6507	A -	---
										87	6460	L 90-123	Lower
CW40	1537624	491819	264.0	5.0	12/14/2009	40.08	6538.86	2.6	6578.94	75	6501	A -	---
										220	6356	U 224-264	Upper
CW41	1533174	488584	206.0	6.0	12/10/2009	102.23	6453.18	1.5	6555.41	59	6495	A -	---
										138	6416	L 146-206	Lower
CW42	1533169	487177	205.0	6.0	12/10/2009	89.25	6459.53	0.0	6548.78	98	6451	A -	---
										124	6425	L 125-205	Lower
CW43	1537587	482493	104.1	5.0	12/12/2009	63.00	6485.79	2.0	6548.79	57	6490	L 81-101	Lower
										57	6490	A -	---

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

4.0 GROUND-WATER HYDROLOGY OF THE MIDDLE CHINLE AQUIFER

4.1 GEOLOGIC SETTING OF THE MIDDLE CHINLE AQUIFER

The cross-sections in Section 3 have been used to define the geologic setting for the Middle Chinle aquifer. The Middle Chinle sandstone and associated well locations are shown on Figure 3-3. The red dot area is where the Middle Chinle aquifer exists in the Grants Project area and has shale between the top of the Middle Chinle sandstone and the base of the alluvium. The red cross-hatched pattern areas show where saturated alluvium overlies the Middle Chinle sandstone and produces direct contact between these two units. The Middle Chinle sandstone subcrop is very important with respect to transfer of water between these two aquifers and is shown with a red cross hatch. The area where the Middle Chinle subcrops against alluvium that is not saturated is shown by the red "+" pattern. The Middle Chinle also exists east of the East Fault in the red patterned area with a subcrop zone on the south side of the area. A limited area of Middle Chinle aquifer exists west of the West Fault. All three of these Middle Chinle aquifers act as separate ground-water systems with the exception of some contact between the two areas where the East Fault ceases near the southern limit of the Middle Chinle sandstone.

4.2 STRUCTURE OF THE MIDDLE CHINLE AQUIFER

Figure 4-2 presents the structure on top of the Middle Chinle sandstone. This structure map shows the elevation of the top of the Middle Chinle sandstone on each side of the two faults in the area of the Grants tailings and the displacement of these sandstones. This structure map was developed in the same manner as the Upper Chinle sandstone structure map. The Middle Chinle sandstone also dips at a steeper rate in southern Felice Acres, which causes the Middle Chinle sandstone to subcrop against the alluvium on the south side of Felice Acres. This allows a direct connection between the Middle Chinle and alluvial aquifers. Multi-well pump tests in the Middle Chinle aquifer have shown that all three of the Middle Chinle aquifer zones in this area act as separate aquifers except for the Middle Chinle aquifer near the southern end of the East Fault where the fault displacement of this sandstone diminishes.

4.3 MIDDLE CHINLE WATER LEVELS

Water levels in Homestake's Upper, Middle and Lower Chinle wells are presented in the attached well data tables. The 2008 water-level elevation contours for the Middle Chinle aquifer are presented on Figure 4-3. The hydraulic gradient in the Middle Chinle aquifer is steeper in its alluvial subcrop area in the southern portion of Felice Acres near wells 498, CW45 and CW46. This increase in gradient is due to an influx of water to the Middle Chinle aquifer from the alluvial aquifer. The red arrows on Figure 4-3 show the direction of ground water flow in the Middle Chinle aquifer. Flow on the east side of the East Fault is mainly to the northeast toward well CW28 near the East Fault in the area of the Middle Chinle subcrop in Sections 2 and 3.

Ground water flow west of the West Fault in the Middle Chinle aquifer is mainly to the southwest, and it discharges into the alluvial aquifer. This had prevented the alluvial aquifer from affecting the water quality of the Middle Chinle aquifer on the west side of the West Fault until the movement of some alluvial water into the Middle Chinle aquifer starting in 2006. This Middle Chinle water flows from up-gradient of the site into the area west of the LTP. The alluvial injection in the northern portion of Section 27 has temporarily reversed the gradient near wells CW17 and CW24 in 2006 through 2008. This has allowed some movement to the north until the water level elevation is increased in this area above those near wells CW17 and WR25. The remainder of the Middle Chinle aquifer, between the East and West Faults, is recharged by the alluvial aquifer south of Felice Acres.

The injection of fresh water into wells CW14 (north of Broadview Acres) and CW30 (west of Felice Acres) has created ground water mounds in their respective areas. These mounds cause the ground water to flow both north and south from these two wells. Collection of ground water from wells CW1 and CW2 intercepts the water flowing from the south in the Middle Chinle aquifer between the two faults. Pumping from these wells also draws water flow from the north. The head in the Middle Chinle aquifer on each side of the two faults is significantly different than the head between the two faults, which demonstrates that the ground water is not readily connected on each side of these faults.

The locations of Middle Chinle wells used to show water-level changes in this aquifer are presented in Figure 4-4. Figure 4-5 presents the water-level elevation changes versus time in Middle Chinle wells 493, 930, CW2, CW17 and WCW. Water levels rose in Middle Chinle well 493 in the mid-1980's. The pumping of irrigation wells 482, 483, 493, 498, CW44 and CW45 has caused the water levels in wells to decline in recent years. The usage of water from well CW2 during 2001 through 2008 has resulted in lower water levels in its area while water levels have gradually increased in well CW17 on the west side of the West Fault.

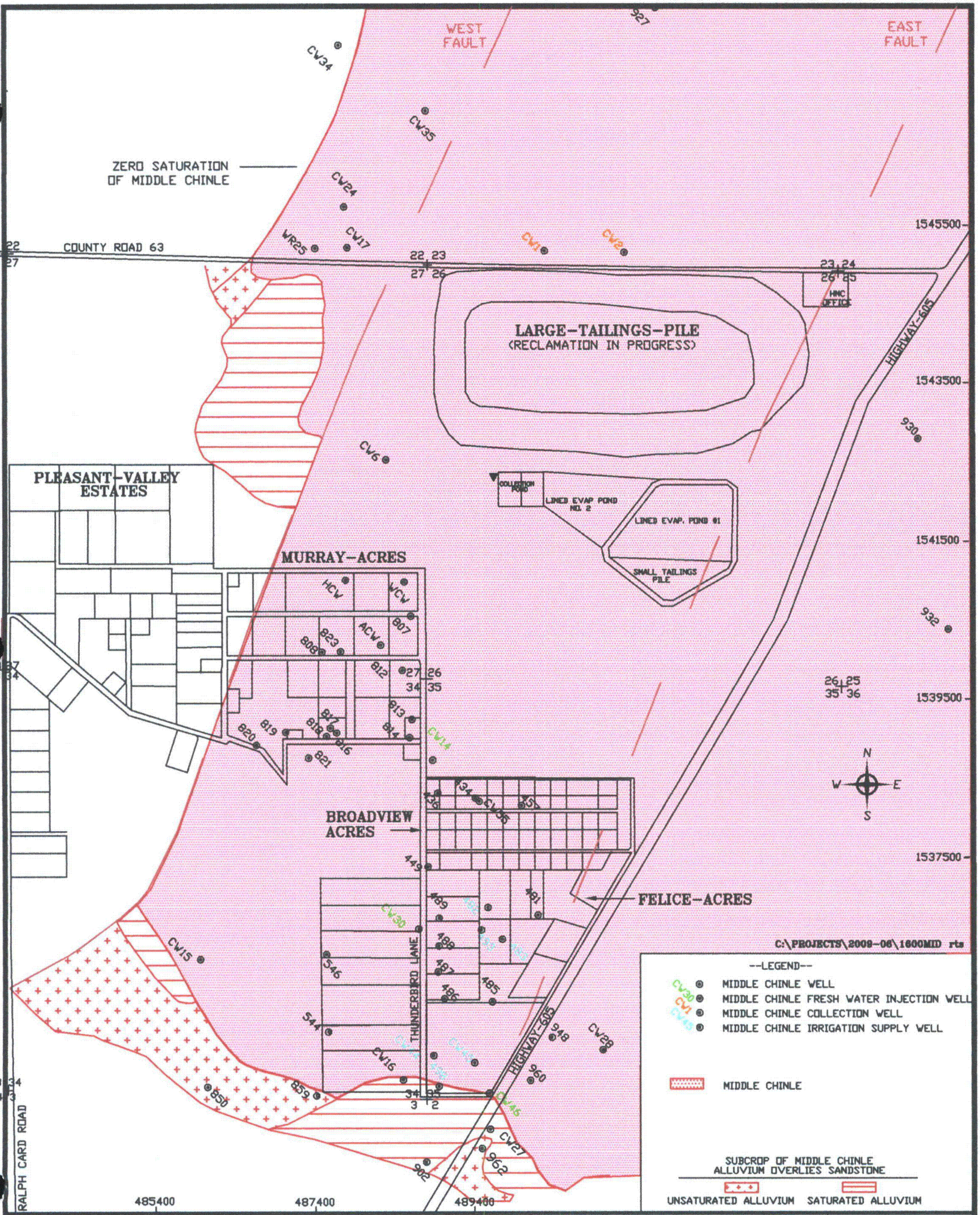
Water levels declined in the early 90's in Middle Chinle well WCW likely due to subdivision water usage but have declined a larger amount in the last nine years mainly due to HMC usage of Middle Chinle water.

4.4 MIDDLE CHINLE AQUIFER PROPERTIES

Like the Upper Chinle, the hydraulic properties of the Middle Chinle aquifer vary significantly over the area due to the effects of secondary permeability associated with faulting. Adjacent to the east side of the East Fault, Middle Chinle aquifer transmissivity is approximately 500 gal/day/ft (see Figure 4-6) but it decreases to less than 100 gal/day/ft east of this area. Areas of higher transmissivity have also been observed in the Middle Chinle aquifer west of the East Fault in the western portion of the LTP, eastern Murray Acres and western Broadview and Felice Acres. A representative storage coefficient for the Middle Chinle aquifer is 3.0E-5.

4.5 MIDDLE CHINLE WATER QUALITY

The area where water quality restoration is necessary in the Middle Chinle aquifer is depicted by the uranium concentrations because this is the key restoration parameter for this site. Figure 4-7 presents the uranium concentration for the Middle Chinle aquifer for 2008. This figure shows where concentrations in the mixing zone exceed 0.18 mg/l (red shading) and also areas where the uranium concentrations exceed 0.07 mg/l in the non-mixing zone (red dashed area). The main area where ground-water restoration is needed is in the western area of Felice Acres and the western portion of Broadview Acres. An additional area exists west of the West Fault near wells CW17 where alluvial water has moved into this portion of the Middle Chinle aquifer west of the West Fault. The natural flow in the Middle Chinle aquifer west of the West Fault is from the north to the south discharging into the alluvial aquifer. The zone of concentrations that exceed 0.18 mg/l near well CW35 are natural concentrations and do not require site restoration.

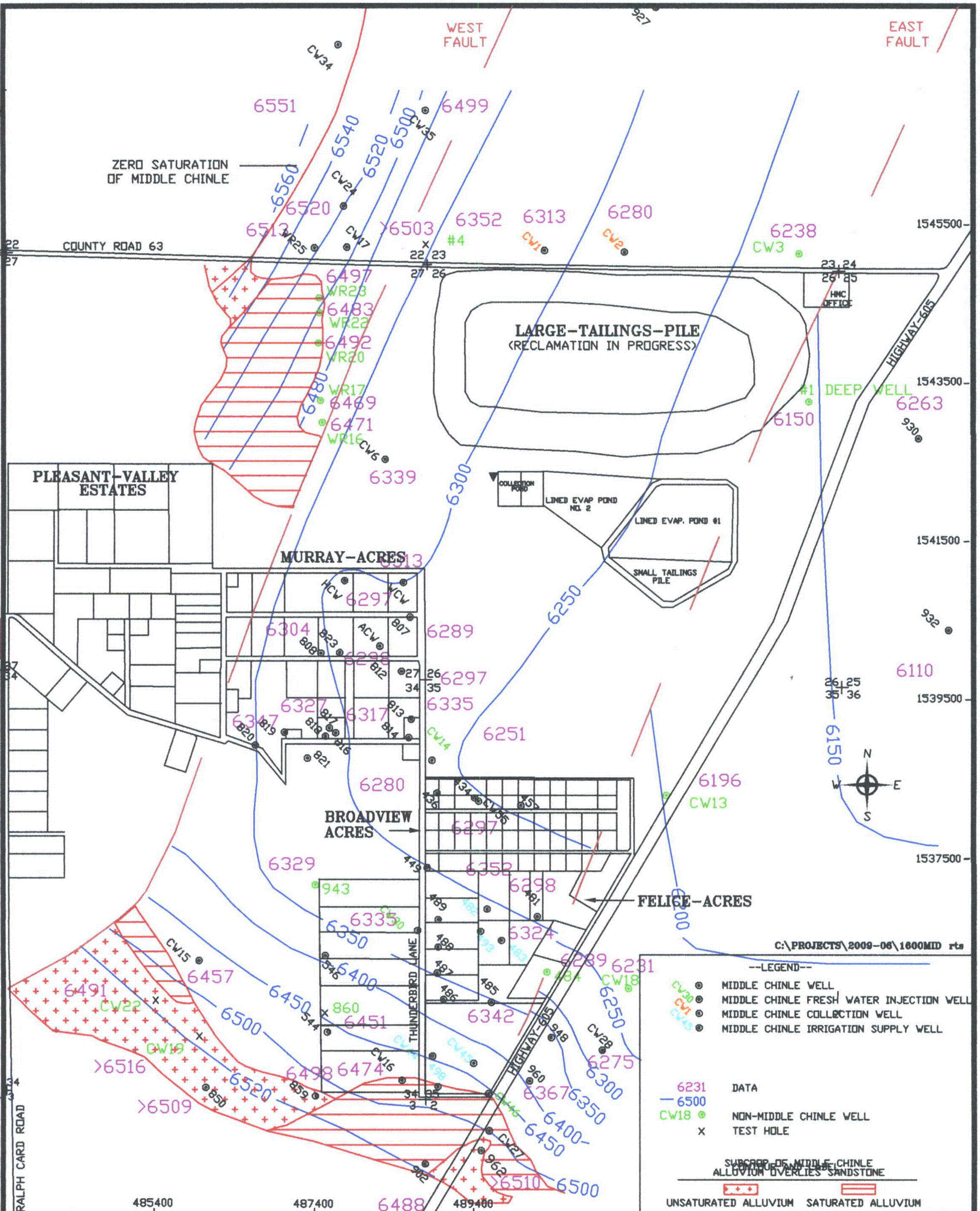


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

FIGURE 4-1. LIMITS OF MIDDLE CHINLE AQUIFER AND WELL LOCATIONS

DATE: 1/6/10

SCALE: 1"=1600'

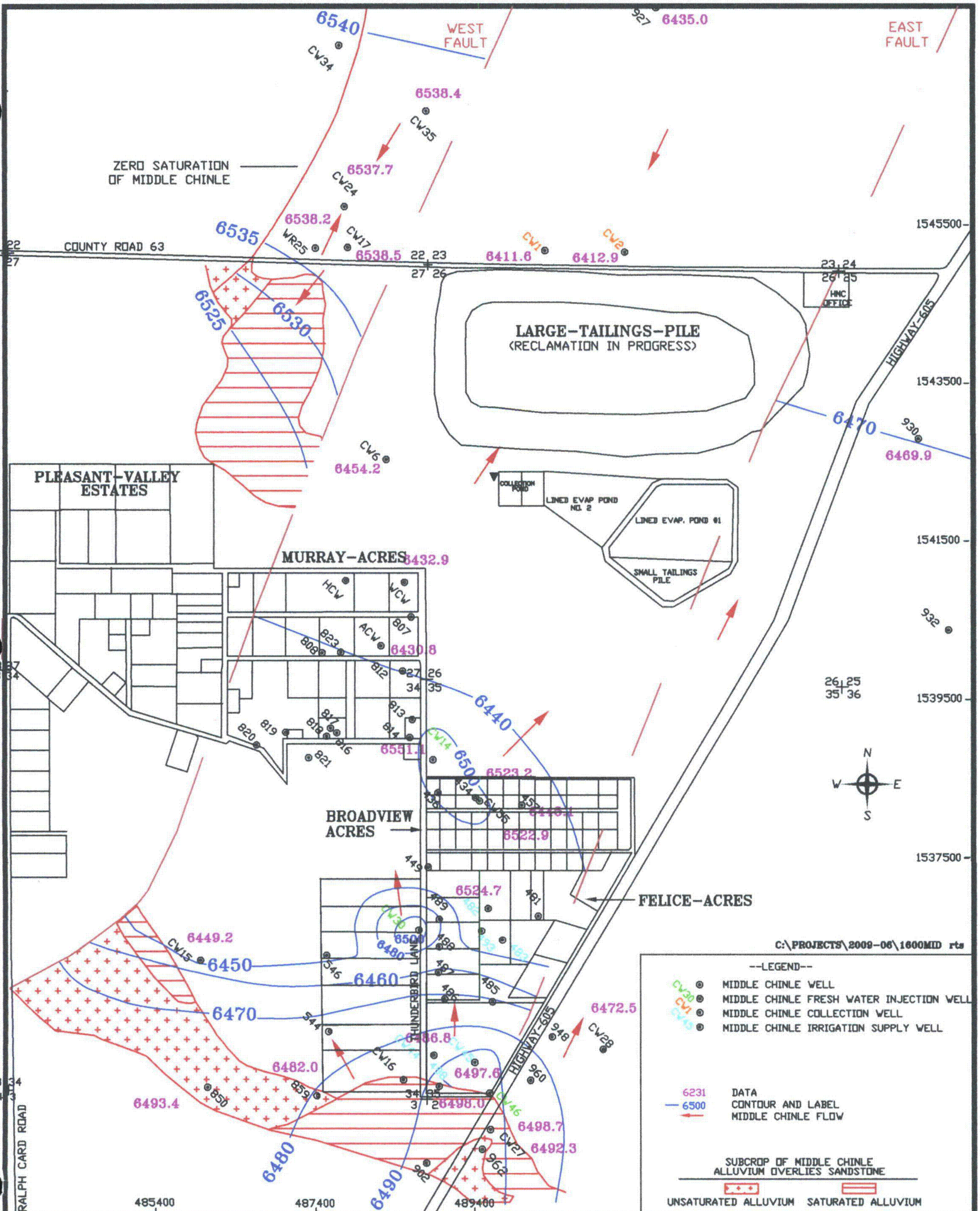


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 1/6/10

SCALE: 1"=1600'

FIGURE 4-2. ELEVATION OF THE TOP OF THE MIDDLE CHINLE AQUIFER, FT-MSL

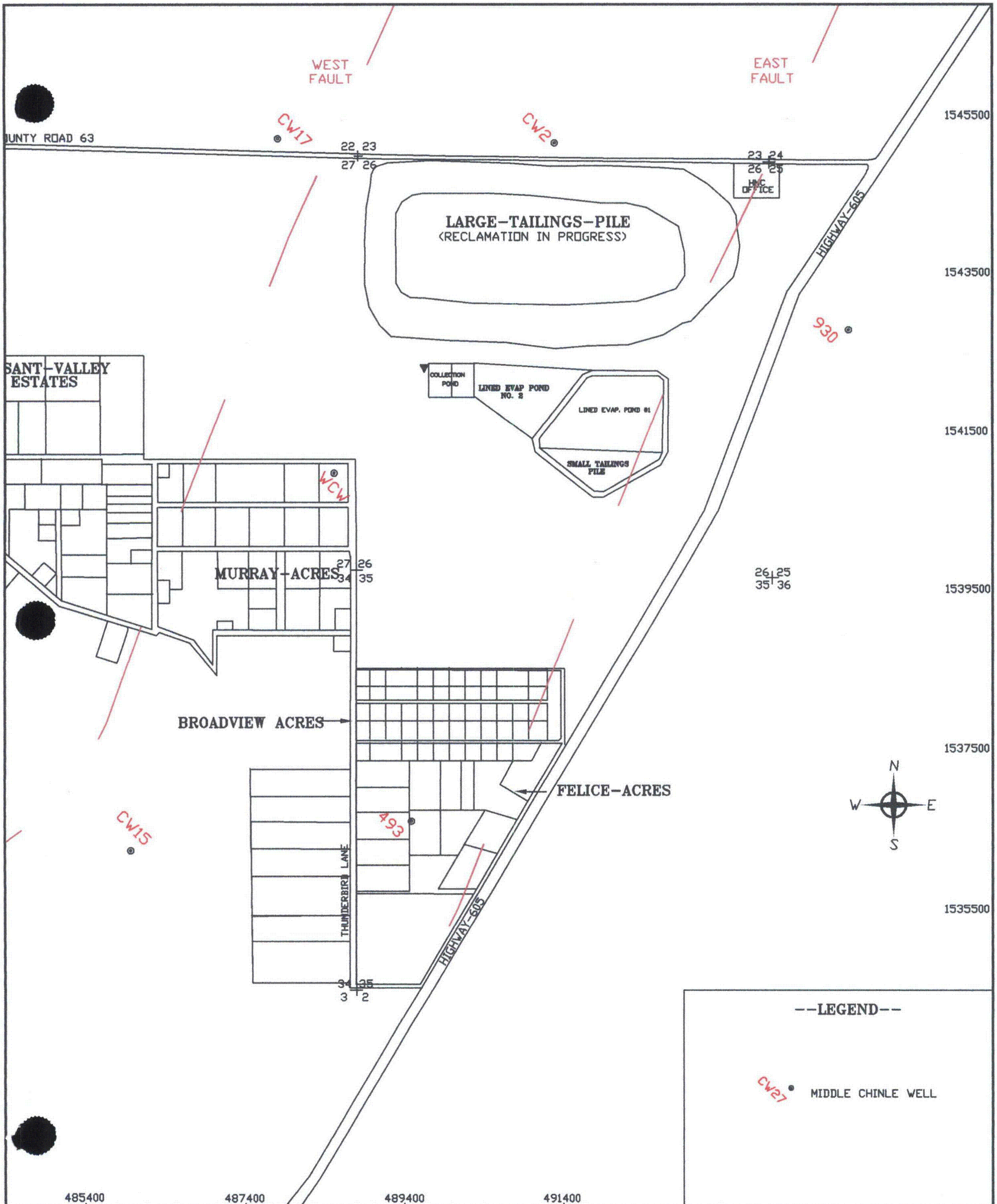


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 1/6/10

FIGURE 4-3. WATER-LEVEL ELEVATIONS OF THE MIDDLE CHINLE AQUIFER, FALL 2008, FT-MSL

SCALE: 1"=1600'



SCALE: 1" = 1600'
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DATE: 1/6/10

FIGURE 4-4. LOCATIONS OF MIDDLE CHINLE WELLS USED TO MONITOR WATER-LEVEL CHANGES

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

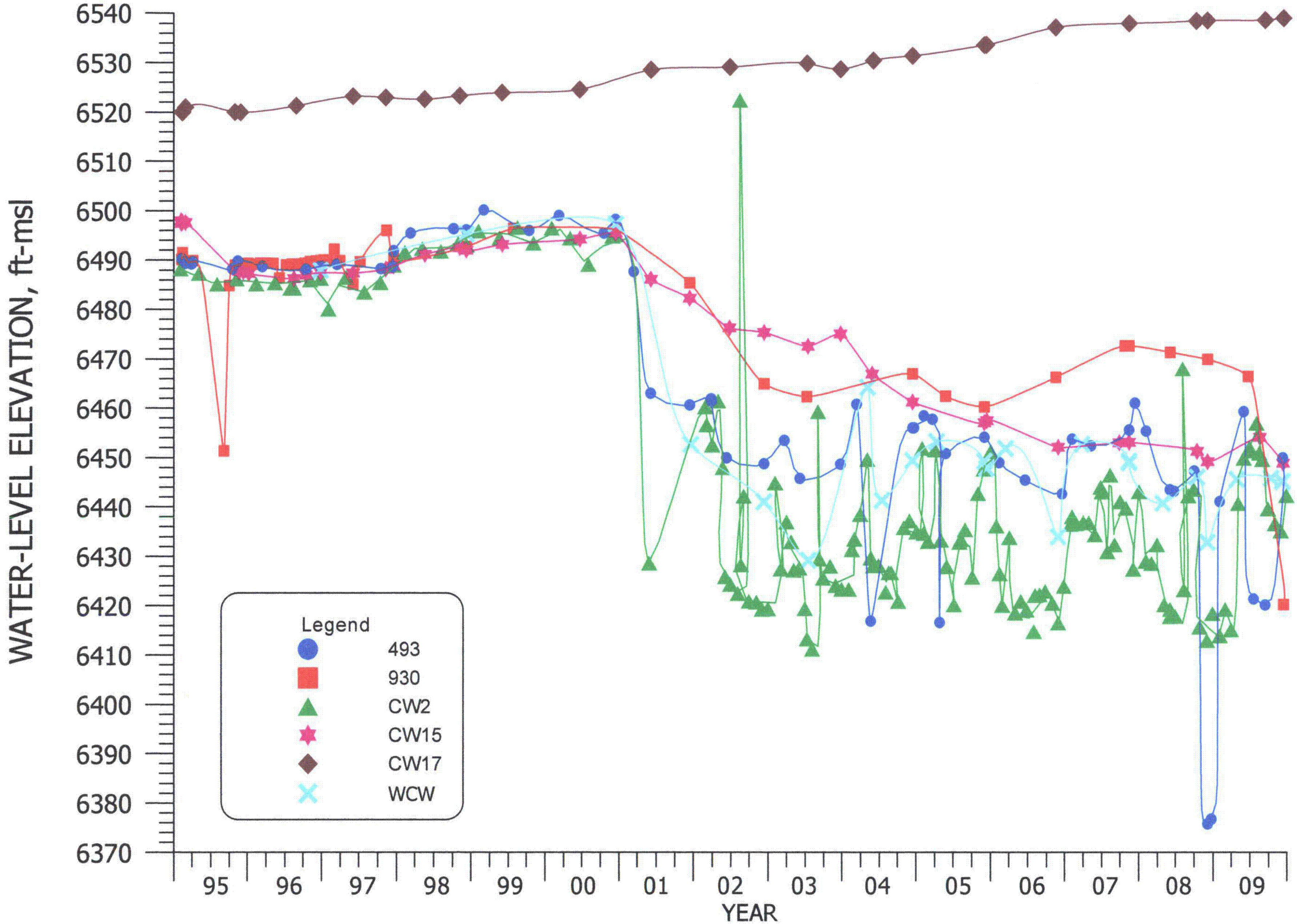
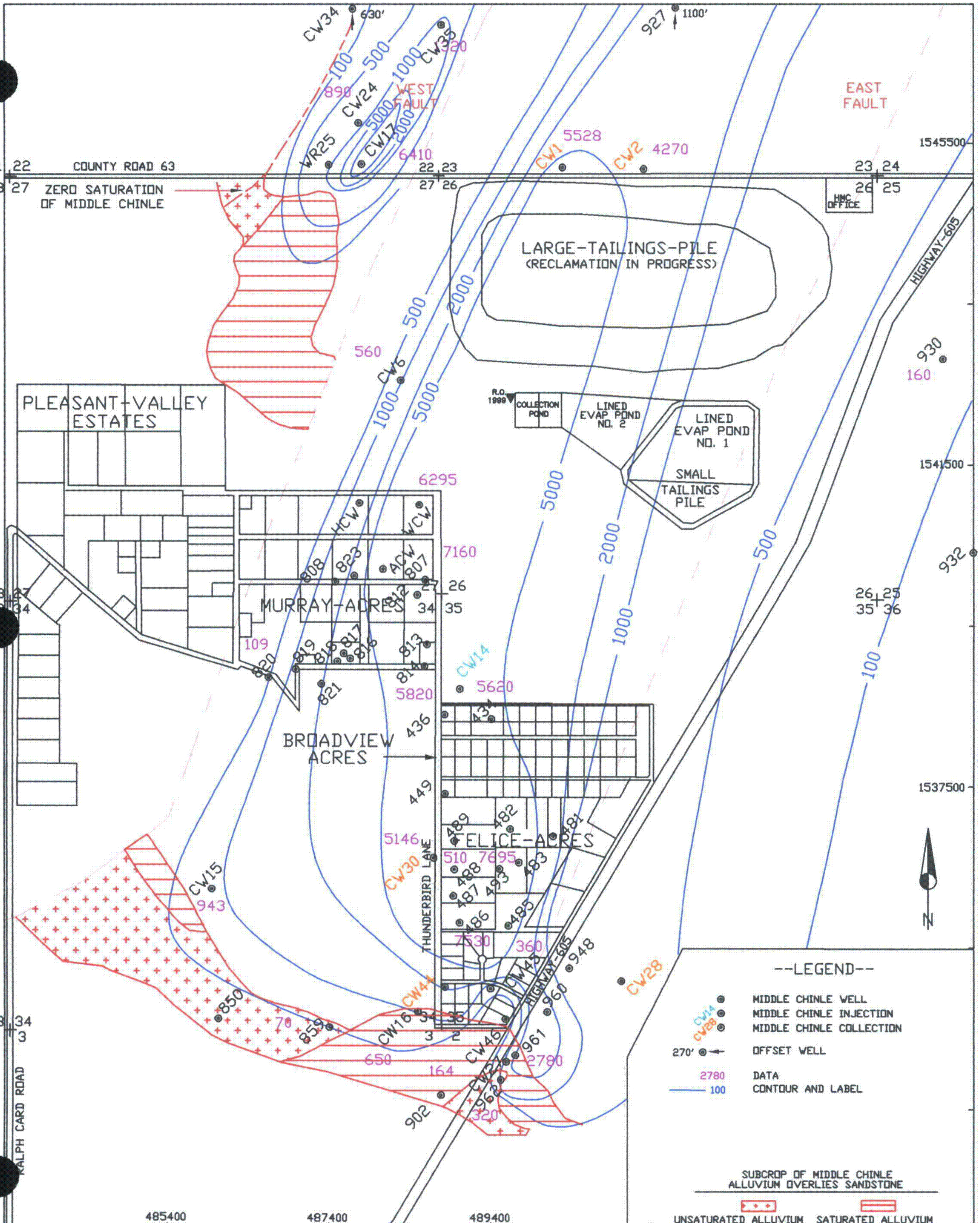


FIGURE 4-5. WATER-LEVEL ELEVATION FOR WELLS 493, 930, CW2, CW15, CW17 AND WCW, FT-MSL.



SCALE: 1"=1600'	HOMESTAKE-MILL-AND-ADJACENT-PROPERTIES GRANTS-NM-TOWNSHIP-11&12-N-RANGE-10-W	DATE: 10/17/03

FIGURE 4-6. TRANSMISSIVITY OF THE MIDDLE CHINLE AQUIFER, GAL/DAY/FT

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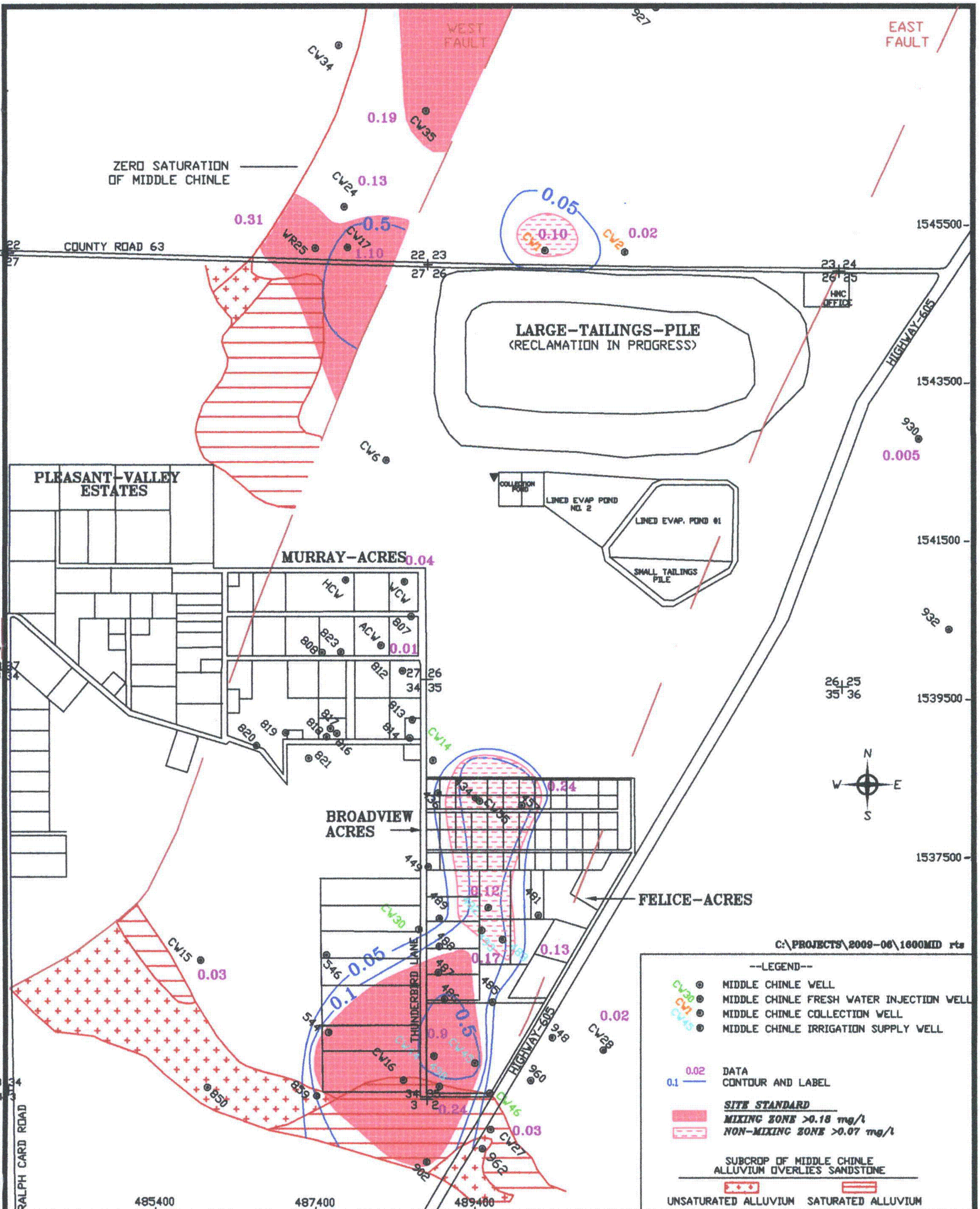


HOMESTAKE MILL AND ADJACENT PROPERTIES ~ GRANTS, NM ~ TOWNSHIP-11&12N, RANGE-10W

DATE: 1/6/10

SCALE: 1"=1600'

FIGURE 4-7. URANIUM CONCENTRATIONS OF THE MIDDLE CHINLE AQUIFER, 2008, mg/l

5.0 GROUND-WATER HYDROLOGY OF THE LOWER CHINLE AQUIFER

This section presents the hydrologic conditions of the Lower Chinle aquifer which is a permeable zone which has been defined in the Chinle shale in the lower portion of the Chinle formation. Secondary permeability is an important factor where the Lower Chinle aquifer is a significant producer.

5.1 GEOLOGIC SETTING OF THE LOWER CHINLE AQUIFER

The Lower Chinle aquifer is the lowest most Chinle aquifer and cross-sections in report Section 3 have been used to define this aquifer setting. Figure 5-1 presents the limits of the Lower Chinle aquifer and associated well locations. This figure shows where the Lower Chinle aquifer exists with Chinle shale overlying the aquifer in a cyan dot pattern. The cyan cross-hatch pattern shows where the alluvium is saturated in the subcrop area of the Lower Chinle aquifer. A cyan plus sign pattern shows where the Lower Chinle subcrops in the area of no saturation in the alluvial aquifer. The Lower Chinle aquifer and alluvial aquifers are in direct connection in the area where the cross-hatch pattern exists.

5.2 STRUCTURE OF THE LOWER CHINLE AQUIFER

Figure 5-2 presents the elevation on top of the Lower Chinle aquifer. This structure map is similar to the structure map for the Middle Chinle Sandstone east of the West Fault. The Lower Chinle aquifer between the two faults and near the tailings piles dips to the east. West of the West Fault the general dip is also to the east. On the south and southwest sides of the project area the Lower Chinle dips to the north-northeast at a steeper gradient near the unit subcrop at the base of the alluvium in areas of Sections 3, 4, 33 and 34.

5.3 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 the well tables in Section 3. Figure 5-3 presents water-level elevations in the Lower Chinle wells and Fall 2008 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 2008 were lower in Section 3 as a result of continued pumping from wells CW42, CW29, 538 and 653 for the purpose of providing crop/grazing irrigation supply, and because of the drought.

Water levels are presented for Lower Chinle wells 853, CW32, CW33, CW36, CW37, CW41 and CW43 on Figure 5-5 (see Figure 5-4 for locations of wells). Water levels in Lower Chinle well 853 and CW41, which are southwest of the irrigation supply wells in the Lower Chinle have gradually declined in the last few years. Water levels in well CW32 have steadily declined similar to the decline observed in the San Andres aquifer. Typically, water levels in the Lower Chinle aquifer have gradually declined.

5.4 LOWER CHINLE AQUIFER PROPERTIES

The Lower Chinle aquifer transmissivities are generally less than 20 gal/day/ft. The transmissivity is larger in some areas near the subcrop areas which makes this a viable aquifer in this area. Figure 5-6 presents the transmissivity data for the Lower Chinle aquifer. This map shows that the transmissivity is > 1,000 gal/day/ft in the northeast portion of Section 3 and is also higher near the subcrop area west of the West Fault near wells CW37 and CW53. The transmissivity in the Lower Chinle aquifer is thought to decrease below 20 gal/day/ft in its downgradient direction away from the subcrop area.

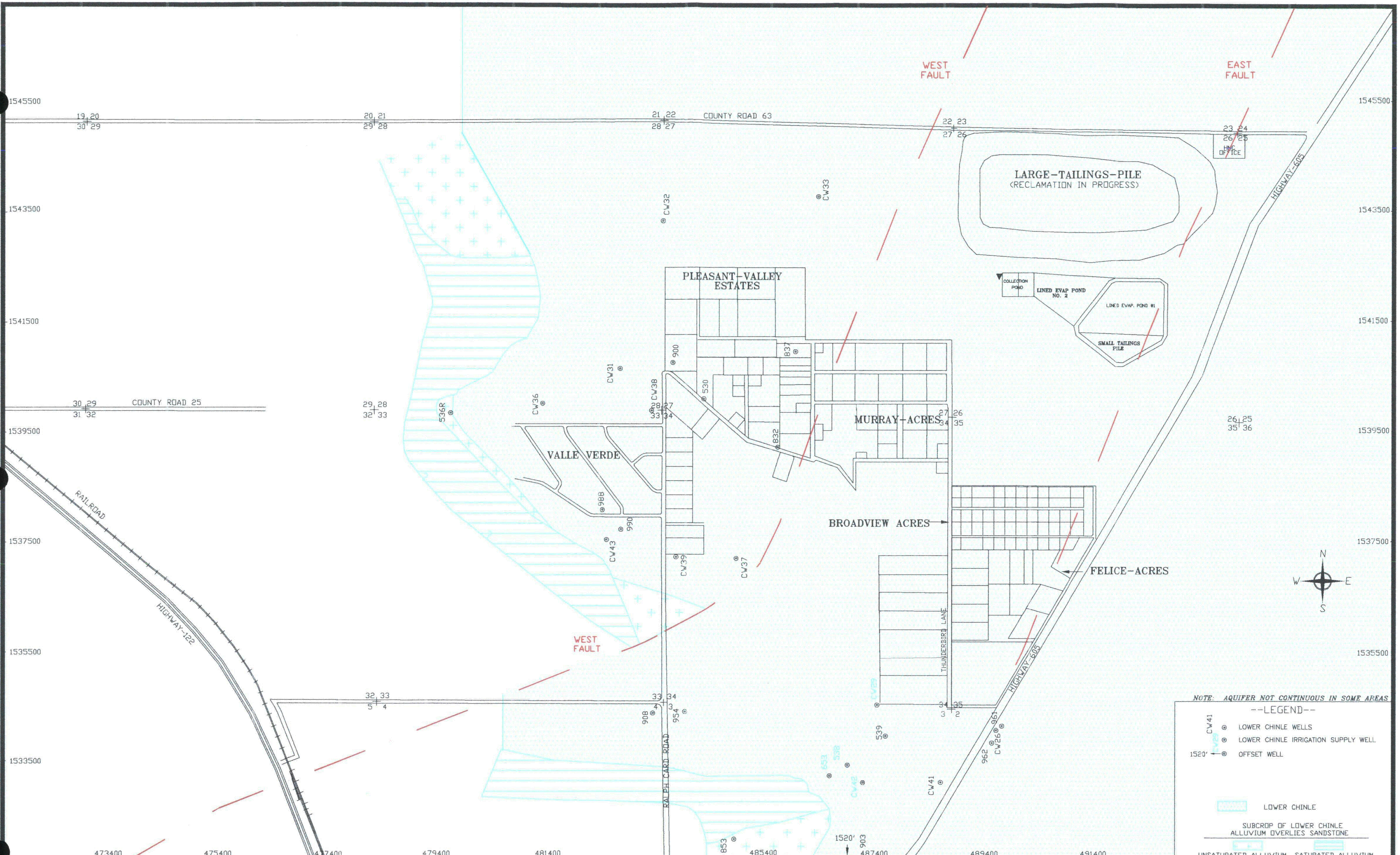
The hydraulic conductivities of the Lower Chinle aquifer also vary greatly from values of <0.1 to >50 ft/day. The hydraulic conductivities downgradient approximately 1 mile beyond the subcrop areas is thought to be <0.10 ft/day.

The storage coefficient for the confined Lower Chinle aquifer is thought to be roughly 2E-4 near the subcrop areas where this aquifer has a significant transmissivity.

5.5 LOWER CHINLE AQUIFER WATER QUALITY

The project annual review reports (Section 7) present the water quality for the Lower Chinle aquifer. Sulfate, TDS, uranium, selenium and nitrate concentration maps are presented in the annual report to define water quality condition plots for these parameters and show changes in water quality that have occurred in the Lower Chinle aquifer with time. The TDS in the Lower Chinle aquifer increase significantly downgradient of the subcrop area and become too large to make this a usable aquifer beyond approximately 1 mile from the subcrop area.

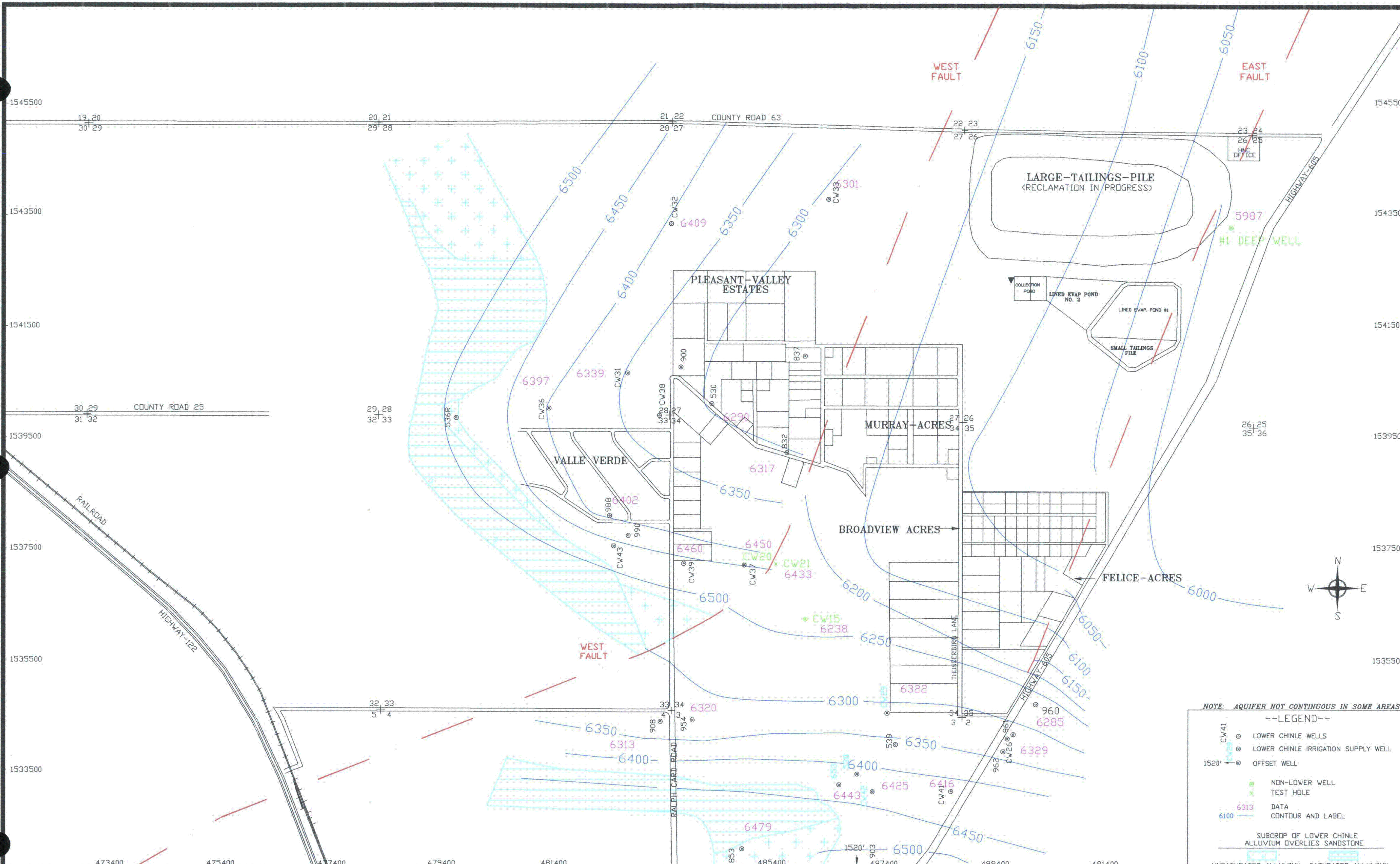
Figure 5-7 presents the uranium concentrations for the Lower Chinle aquifer for 2008. This map shows that the uranium concentrations exceed the mixing zone site standard where the concentration is greater than 0.18 mg/l in Section 3 and also an area where the non-mixing site standard of 0.03 mg/l has been exceeded to the northeast of this area. This map shows where restoration of the Lower Chinle aquifer is necessary.



SCALE: 1" = 1600'
C:\PROJECTS\2009-06\1600LOW rts
DATE: 1/6/10

FIGURE 5-1. LIMITS OF LOWER CHINLE AQUIFER AND WELL LOCATIONS

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



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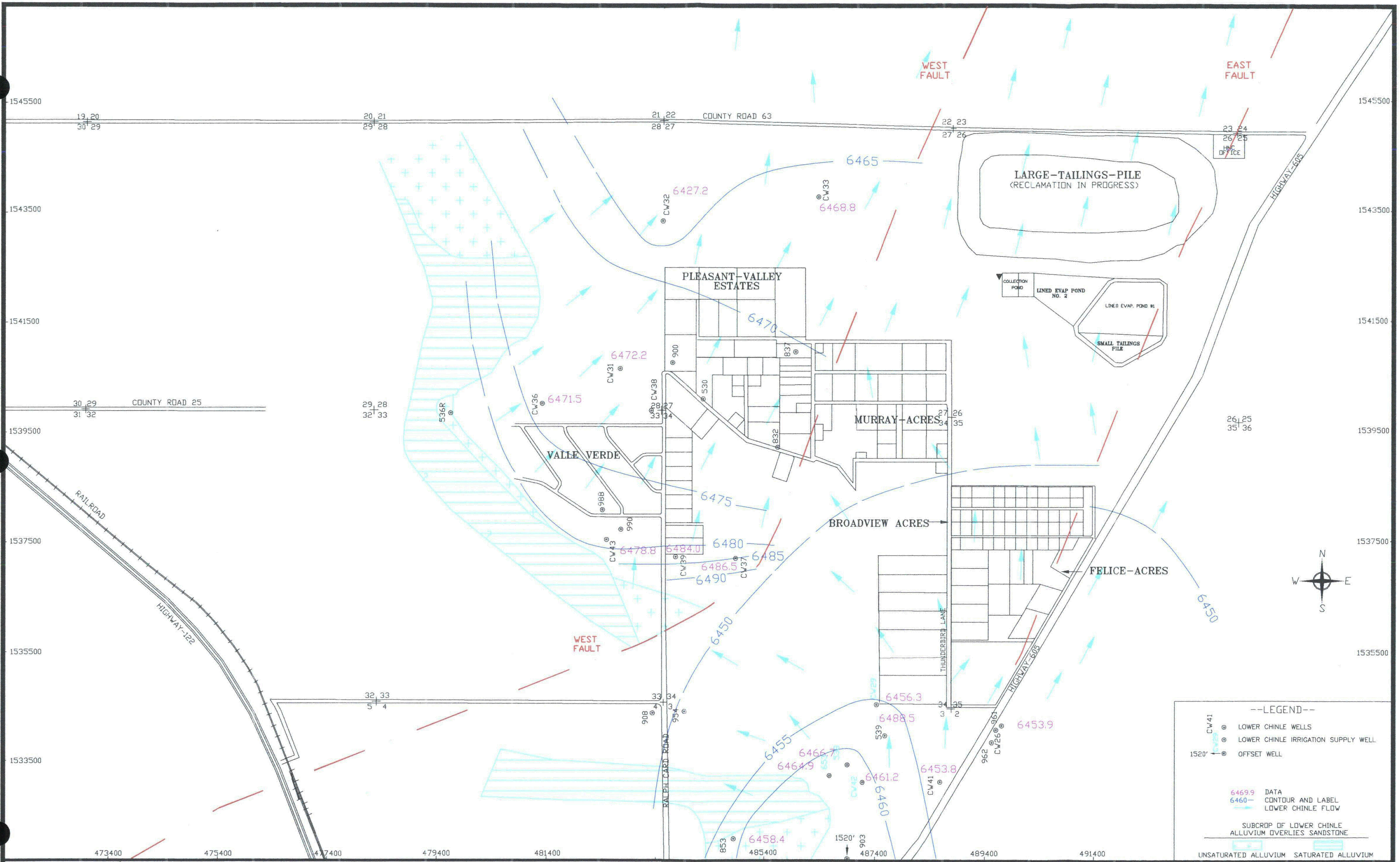
DATE: 1/6/10

FIGURE 5-2. ELEVATION OF THE TOP OF THE LOWER CHINLE AQUIFER , FT-MSL

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



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DATE: 1/6/10

FIGURE 5-3. WATER-LEVEL ELEVATIONS OF THE LOWER CHINLE AQUIFER, FALL 2008, FT-MSL

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

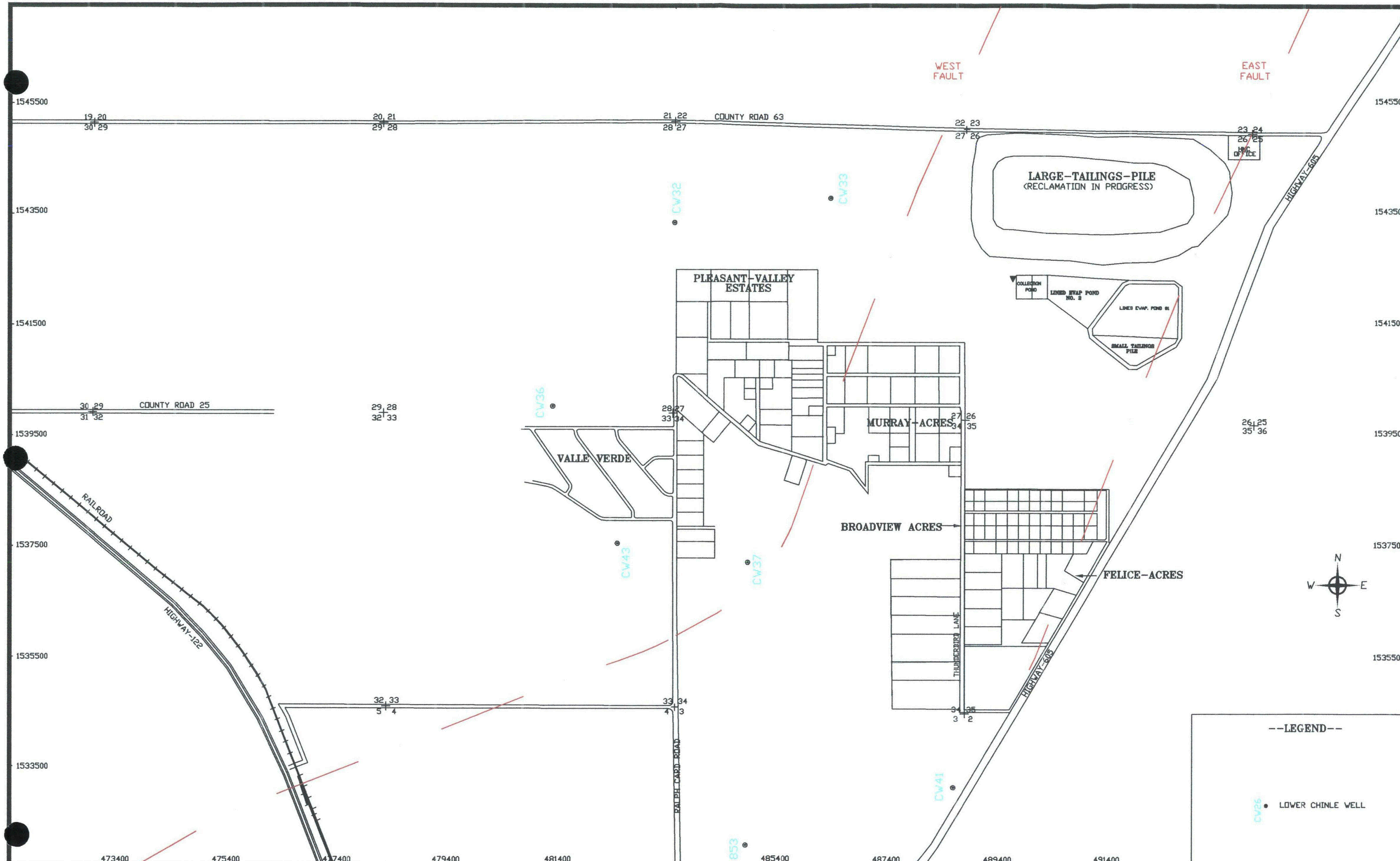

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FIGURE 5-4. LOCATIONS OF LOWER CHINLE WELLS USED TO MONITOR WATER-LEVEL CHANGES

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

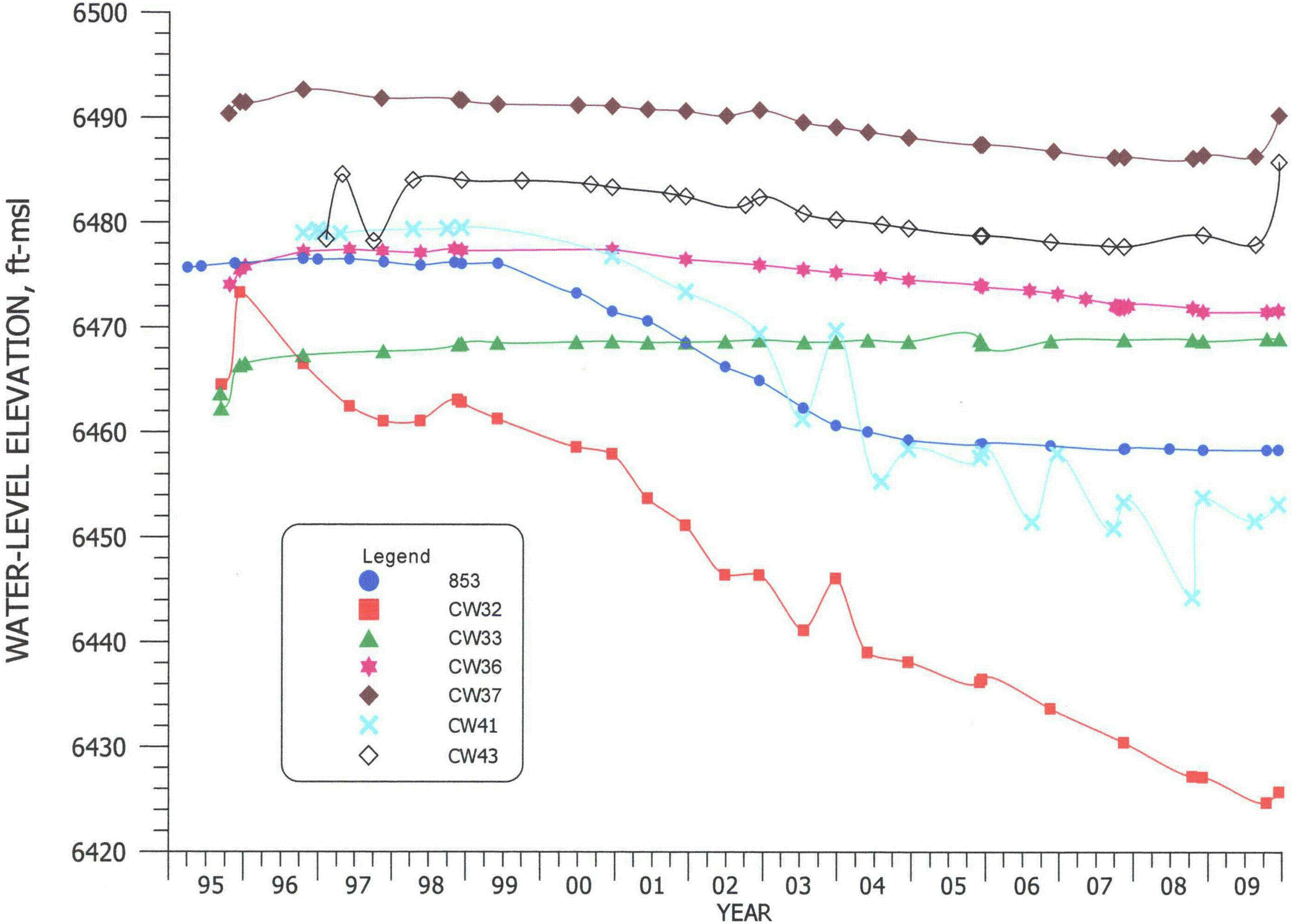
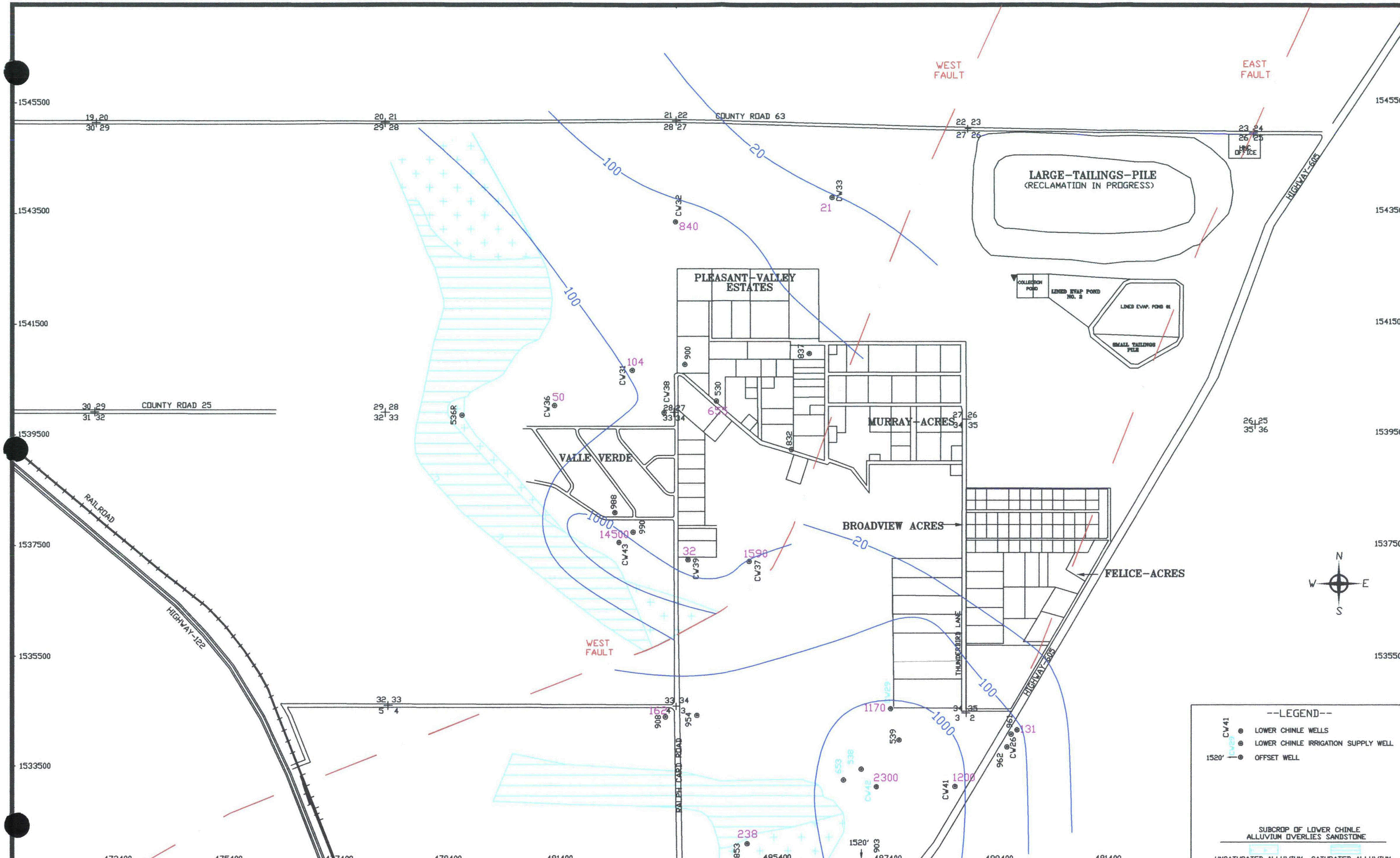


FIGURE 5-5. WATER-LEVEL ELEVATION FOR WELLS 853, CW32, CW33, CW36, CW37, CW41 AND CW43, FT-MSL.



SCALE: 1" = 1600'

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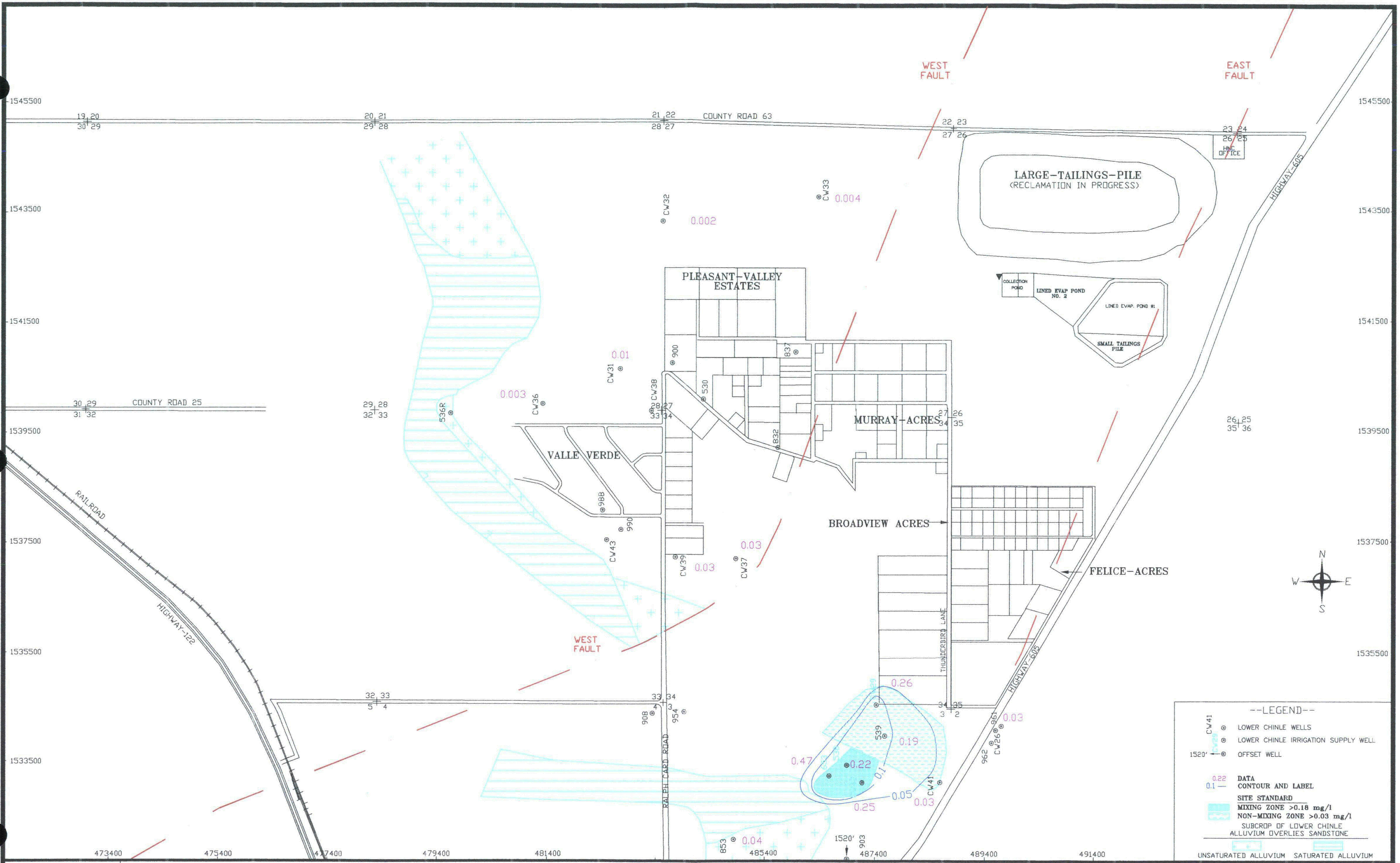
DATE: 1/6/10

FIGURE 5-6. TRANSMISSIVITY OF THE LOWER CHINLE AQUIFER, GAL/DAY/FT

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



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DATE: 1/6/10

FIGURE 5-7. URANIUM CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2008, mg/L

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

6.0 GROUND-WATER HYDROLOGY OF THE SAN ANDRES AQUIFER

The San Andres aquifer is important to the Grants Project because the San Andres water has been used for fresh-water injection to aid in the restoration of this site. The San Andres aquifer consists of the San Andres limestone and the Glorietta Sandstone. Any water that is pumped from the San Andres aquifer for fresh-water injection into the shallow aquifers is counted toward the total diversion rate for the site but is appropriately not counted toward consumptive water rights use. Each of these ground-water systems are part of the Bluewater Closed Basin and, therefore, the State Engineer counts the transfer of San Andres water to the alluvial aquifer as a non-consumptive water use.

6.1 GEOLOGIC SETTING OF THE SAN ANDRES AQUIFER

The Chinle Shale typically underlies the alluviums at the project. The first major aquifer in the area is the San Andres, which is the geologic unit below the Chinle Shale. Figure 6-1 shows a cross section along the northern borders of Sections 32 and 33. Wells 938, 889 and 949 were used in developing this cross section (see Figure 6-2). This cross section shows the base of the alluvium with the Chinle shale existing between the alluvium and the top of the San Andres limestone. The depth to the top of the San Andres limestone is shallower on the west side of the cross section and deeper to the east. The Chinle formation is approximately 850 feet thick at the Homestake tailings site and consists mainly of shale with a few sandstone lenses. Therefore, the Chinle formation acts as a very thick aquitard between the alluvial and San Andres aquifers at the Grants Project site. The Chinle Formation is roughly twenty feet thick over a large distance on the western side of the cross section in Figure 6-1. The bottom portion of the Chinle Formation generally contains materials that are more permeable than most of the Chinle shale because this portion of the formation contains transitional materials to the San Andres limestone. This thin section of Chinle Formation was exposed on the land surface and likely weathered to increase permeability. Therefore, good connection between the alluvial and San Andres aquifers may exist even when a few tens of feet of Chinle Formation exist. A west to east cross section one half mile to the south would show direct contact between the San Andres and alluvial aquifers (see Figure 6-2 for subcrop area).

Figure 6-2 also presents the location of the San Andres wells in this area and the subcrop area with the alluvial aquifer. San Andres well 938 is close to the subcrop area and San Andres well 911 is in the subcrop area.

6.2 STRUCTURE OF SAN ANDRES AQUIFER

Figure 6-2 presents the elevation of the top of the San Andres aquifer for the project area. This figure was developed from data for wells that have been completed in the San Andres aquifer. The figure shows that two faults exist in this area based on the drilling of deep wells. Drilling has shown that these fault locations are different than presented in Thaden, et. al. (1967). The San Andres dips to the northeast southwest of the project site. The dip of the San Andres is to the east in the tailings area. The faults in this area do not completely displace the San Andres aquifer. Therefore, it acts as one ground-water system.

The base of the alluvial aquifer and the elevation of the top of the San Andres aquifer define where these two aquifers are in direct contact. The magenta pattern on Figure 6-2 shows where the elevation of the base of the alluvial and the top of the San Andres aquifers are common. This figure shows that the San Andres and alluvial aquifers are in direct communication in Section 32 and extends within a few hundred feet of the irrigation wells in the southwest corner of Section 33. Ground water moves to the aquifer with the lowest head in this area and has thus caused a depression in the alluvial aquifer piezometric surface.

The San Andres aquifer and alluvial aquifer are generally separated by a very good aquitard in the Grants Project area, as shown on the cross section in Figure 6-1. The Chinle shale between the alluvium and the San Andres aquifer on the west side of the map becomes very thin and, therefore, connection between these two aquifers exists over a larger area on the west side of the map than that shown by the subcrop pattern. The aquitard does not allow communication between the alluvial and San Andres aquifers east of the subcrop area where the Chinle Shale becomes thick enough to be an adequate aquitard. Therefore, the only area where the San Andres and alluvial aquifers are connected is in the far western portion of this study area. Figure 6-2 shows the area where the alluvial and San Andres aquifers have direct communication.

Direct communication between the alluvial aquifer and the San Andres aquifer also exist in the Rio San Jose drainage upgradient of the site. Dillinger (1990) shows that the Rio San Jose alluvium and the outcrop of the San Andres are adjacent to each other upstream of Figure 6-2 and also downstream of the site. The geologic map in Dillinger shows that good connection between the alluvial aquifer and the San Andres likely exists at numerous locations in township 12N and range 11W. Good connection between the alluvial aquifer and the San Andres aquifer also exists downgradient of all irrigation areas after the confluence of the Section 3 and 33 sites. Dillinger's geologic map shows that the San Andres Formation is adjacent to the alluvial aquifer in Sections 8, 17, 20, 21 and 28 in township 11N and range 10W, which is in the Rio San Jose alluvial system on the west side of Milan. Flow in the direct contact areas will be from the aquifer that contains the higher head to the aquifer with the lower head.

The San Andres and alluvial aquifer connections are important because they allow water to freely move from one aquifer to the other, depending on head conditions. These connections cause these two aquifers to react as one in the area near these connections in the area northwest and west of Milan.

6.3 SAN ANDRES WATER LEVELS

Figure 6-3 presents the water-level elevations for the San Andres aquifer during the winter of 2008. This data shows that the water-level elevations in the San Andres aquifer vary from 6432 to 6430 ft-msl in the area of the Homestake property. The direction of ground-water flow is to the east-southeast. The gradient of the piezometric surface is very flat but increases to 0.0006 ft/ft in the tailings area likely due to the faults decreasing the transmissivity across this area. The faults do not significantly affect the ground-water flow in the San Andres aquifer. The faults' displacement is not large enough to completely displace the entire thickness of this aquifer system. Therefore, flow would be expected to move from one side of the fault to the other without being greatly affected or retarded.

The water-level elevation in the alluvial aquifer in the fall of 2008 in the connection area with the San Andres aquifer, shown on Figure 6-2, was slightly greater than the water-level elevation in the San Andres. Therefore, the alluvial ground water in 2008 was moving from the alluvial aquifer to the San Andres aquifer in this area. Ground water likely flows from the San Andres aquifer to the alluvial aquifer when recharge conditions in its outcrop are more significant than the recharge conditions over the alluvial aquifer. These water levels show that these two aquifers are in direct connection. Transfer of water also occurs further downgradient where the alluvial and San Andres aquifers are in direct connection.

Water-level elevations for the San Andres wells 907, 928 and 938 are presented in Figure 6-5 (see Figure 6-4 for well locations). This figure shows that water levels have been generally declining for the last fifteen years in the San Andres aquifer.

6.4 SAN ANDRES AQUIFER PROPERTIES

A single well pump test was conducted in October of 1956 on Deep No. 2 well. This test is presented in Gordon (1961), which allowed calculation of a transmissivity of 460,000 gpd/ft. A more recent pump test was conducted on San Andres well 928 and results are presented in Appendix D of Hydro-Engineering (1996). The same pump test resulted in a calculated transmissivity of 222,000 gpd/ft. A multi-well pump test presented in Gordon (1961) produced storage coefficients between 4.2E-04 and 1.4E-03. The San Andres and Glorietta Sandstones form one aquifer system that is typically referred to as the San Andres aquifer. The aquifer thickness exceeds 200 feet with the combination of these two formations.

The USGS recommended average transmissivity as used in Baldwin and Anderholm (1992) and Frenzel (1992) was 50,000 ft^2/day (374,000 gpd/ft). A storage coefficient of 4.0E-04 is also used in these two reports as the most representative storage coefficient value for the San Andres aquifer.

The rate of ground-water movement in the San Andres aquifer is governed by hydraulic conductivity, gradient and effective porosity of this unit. A velocity of 4 ft/day is estimated based on a permeability of 615 ft/day, a gradient of 0.00086 ft/ft and an effective porosity of 0.1. The ground-water velocity is likely to vary greatly in this type of aquifer due to a very large variation of hydraulic conductivity and effective porosity.

An estimate of the quantity of water moving in the San Andres aquifer in the area of the Homestake facility can be made using the transmissivity, ground-water gradient and a selected width of ground-water flow. An estimate of 1,900 gpm was obtained from a transmissivity of 460,000 gpd/ft, a gradient of 0.0006 ft/ft and a flow width of 10,000 feet.

6.5 SAN ANDRES WATER QUALITY

The San Andres water quality is important to the Grants project site due to it is being used as a source for freshwater injection. Water quality of the San Andres aquifer is naturally very good near its outcrop to the west of the project map and increases in mineral content as the ground water moves to the east. Figure 6-6 presents the water quality data for 2008 for the San Andres aquifer. This figure presents the sulfate, TDS, uranium and selenium concentrations. The TDS in the San Andres starts out <1,000 mg/l the western edge of Figure 6-6 and increases to nearly 2,000 mg/l in the area of the LTP. The sulfate concentrations start out <400 mg/l near the outcrop in the western portion of Figure 6-6 and increases to slightly less than 800 mg/l near the LTP.

Selenium and uranium concentrations are naturally low in the San Andres aquifer. Figure 6-7 presents the sulfate concentrations with time for the four fresh water supply San Andres wells. Well 951 is located in the western portion of Figure 6-6 while well 943 is located in Section 34 and #1 and #2 Deepwells are located near the LTP. Sulfate concentrations generally have been fairly steady with time. The higher sulfate concentration from the #2 Deepwell in 2009 needs to be confirmed prior to giving it any significance.

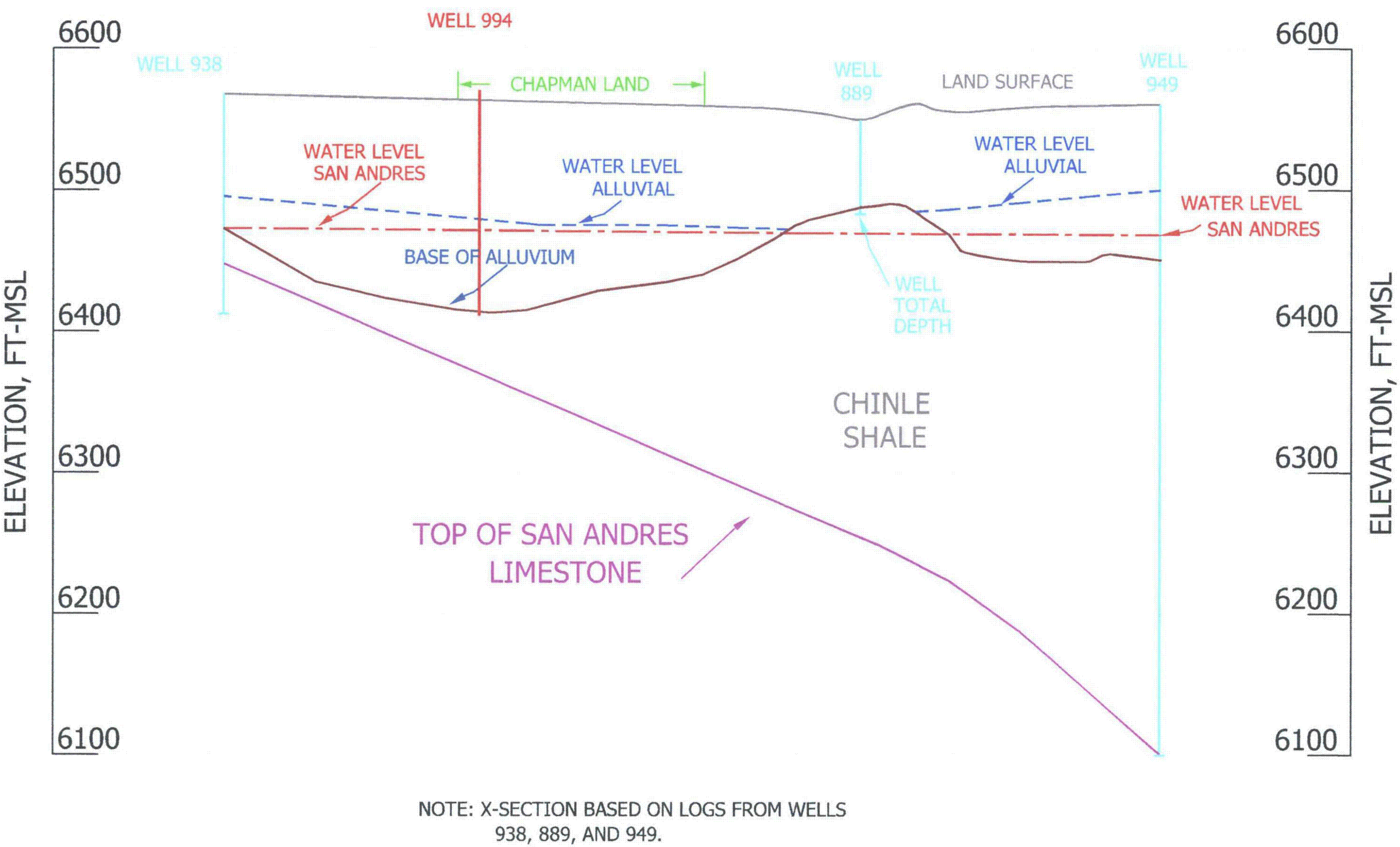

FIGURE 6-1. CROSS-SECTION ALONG THE NORTHERN BORDER OF SECTIONS 32 AND 33

HORIZONTAL SCALE: 1" = 1600'

DATE: 03/16/01

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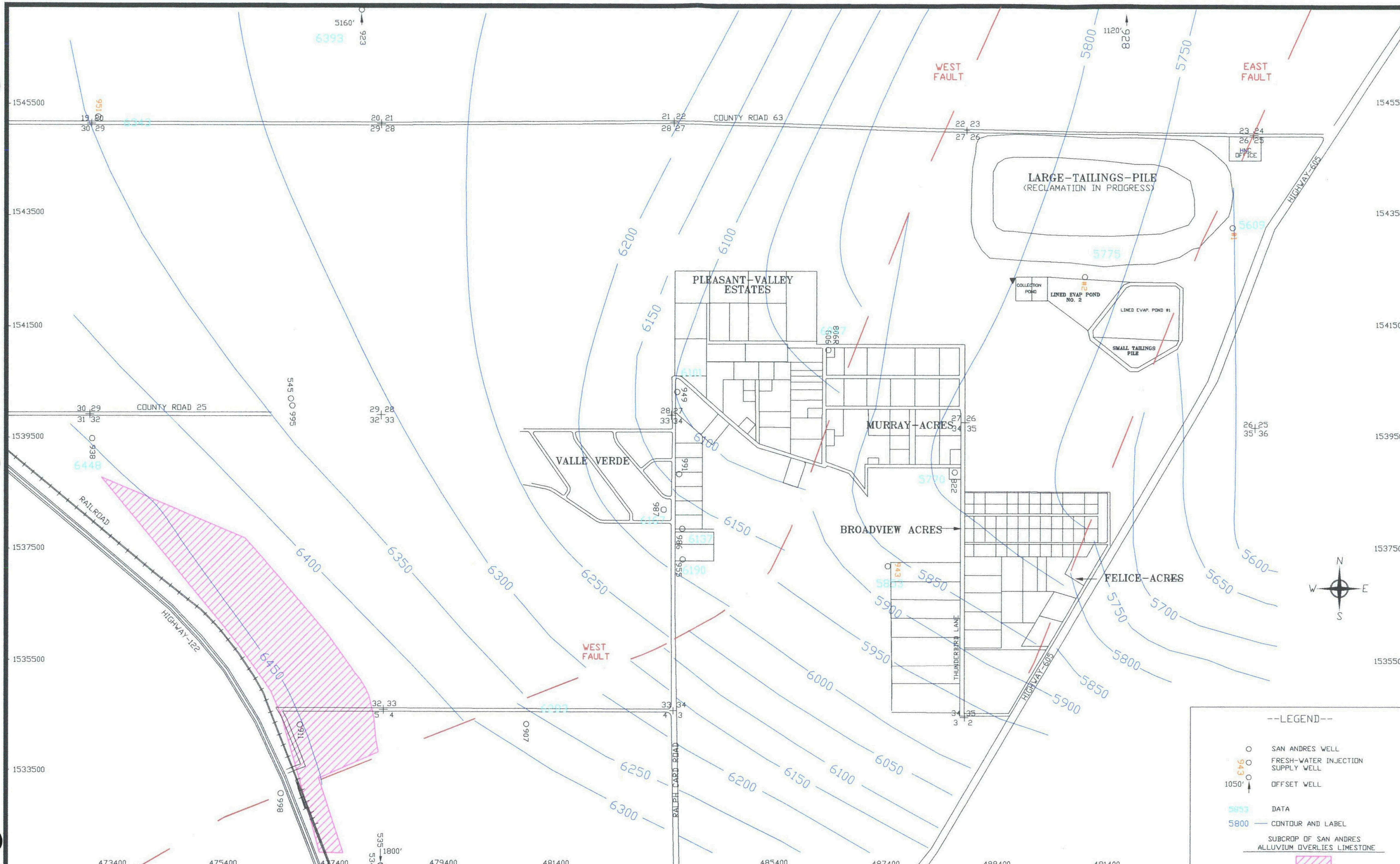

SCALE: 1" = 1600'
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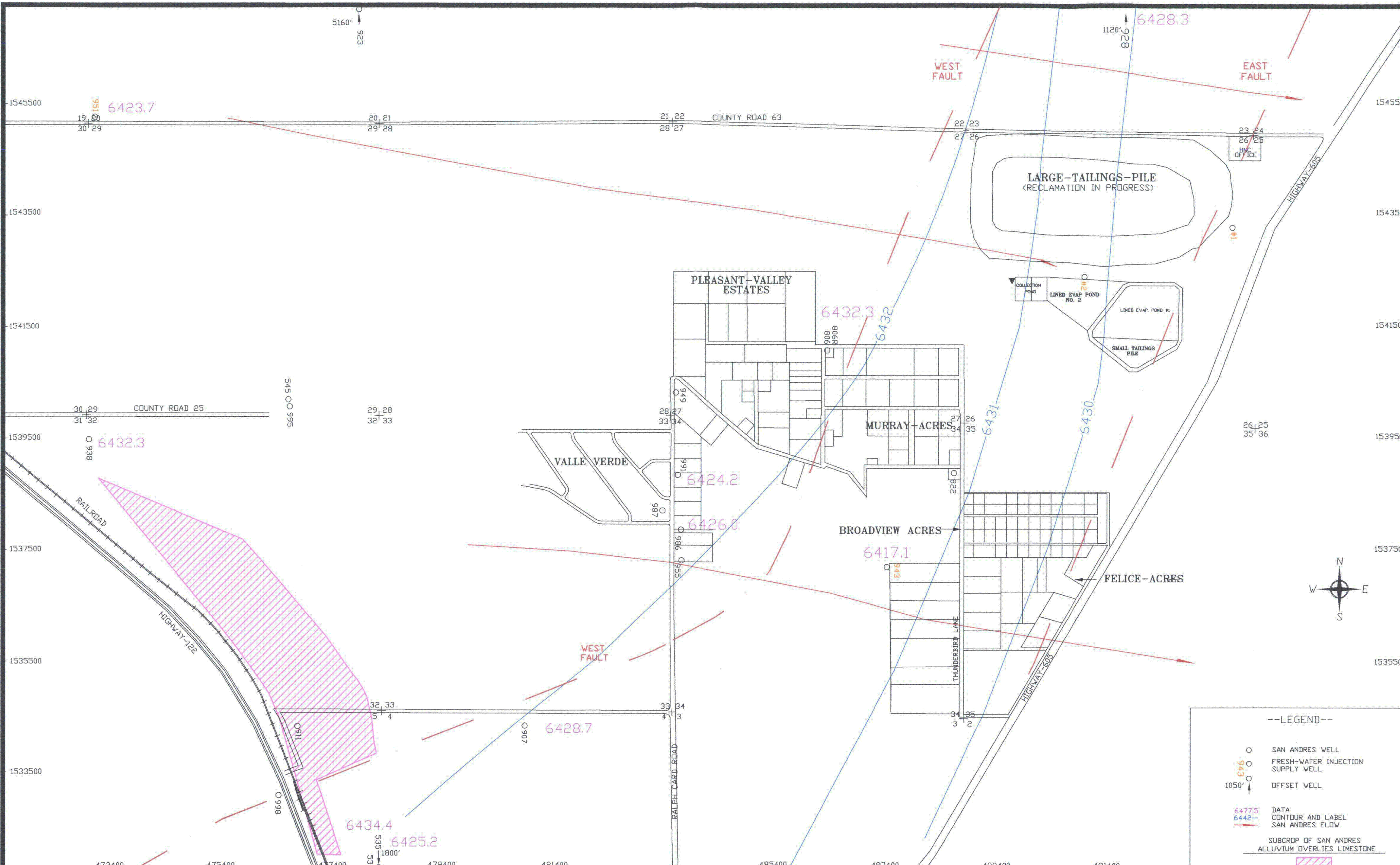
FIGURE 6-2. ELEVATION OF THE TOP OF THE SAN ANDRES AQUIFER, FT-MSL

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



SCALE: 1" = 1600'
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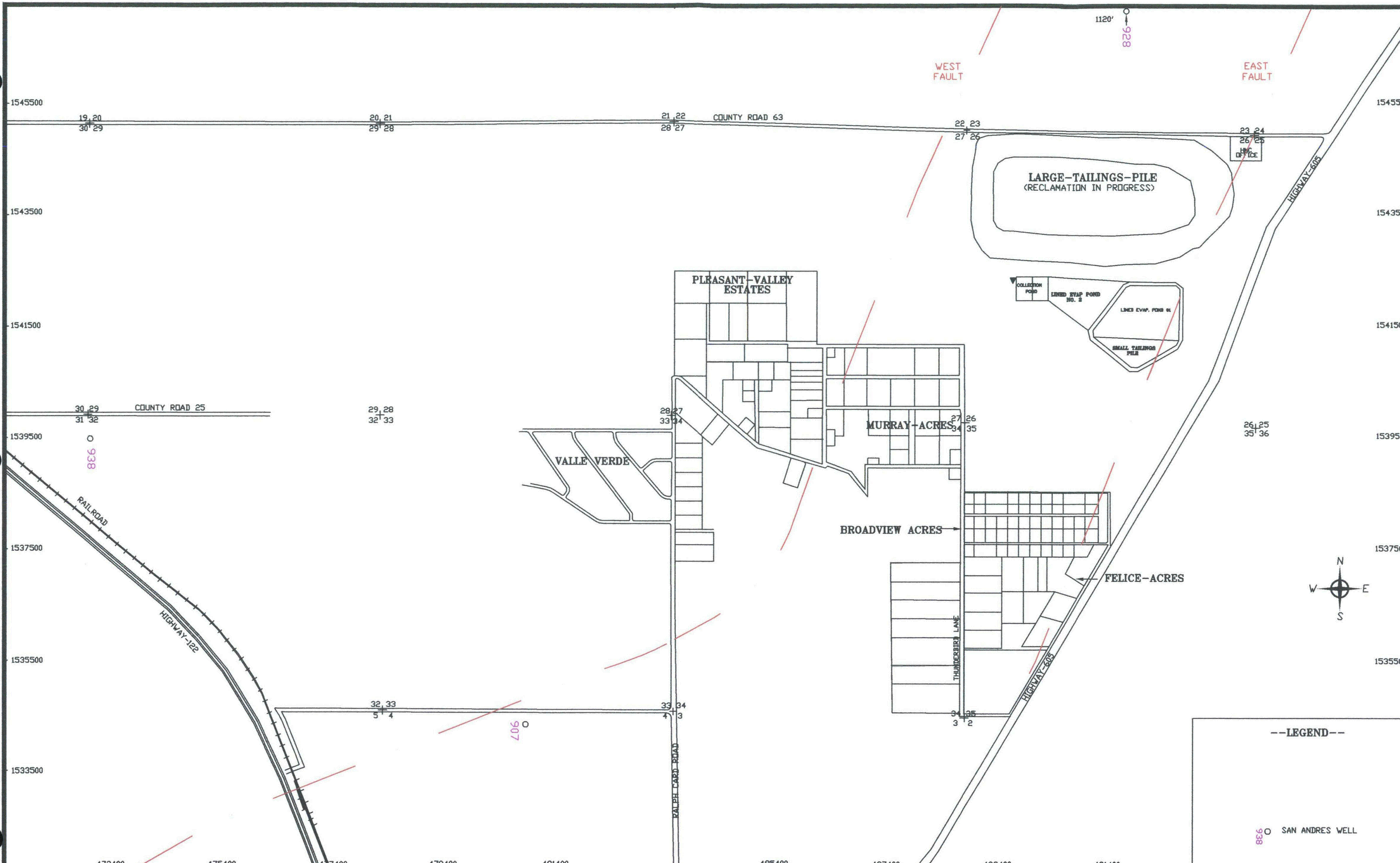
DATE: 1/6/10

FIGURE 6-3. LOCATIONS OF SAN ANDRES WELLS AND WATER-LEVEL ELEVATIONS FOR THE SAN ANDRES AQUIFER, 2008, FT-MSL

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W



SCALE: 1"=1600'
C:\PROJECTS\2009-06
AREA EXTENTS
DATE: 1/6/10

FIGURE 6-4. LOCATIONS OF SAN ANDRES WELLS USED TO MONITOR WATER-LEVEL CHANGES

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

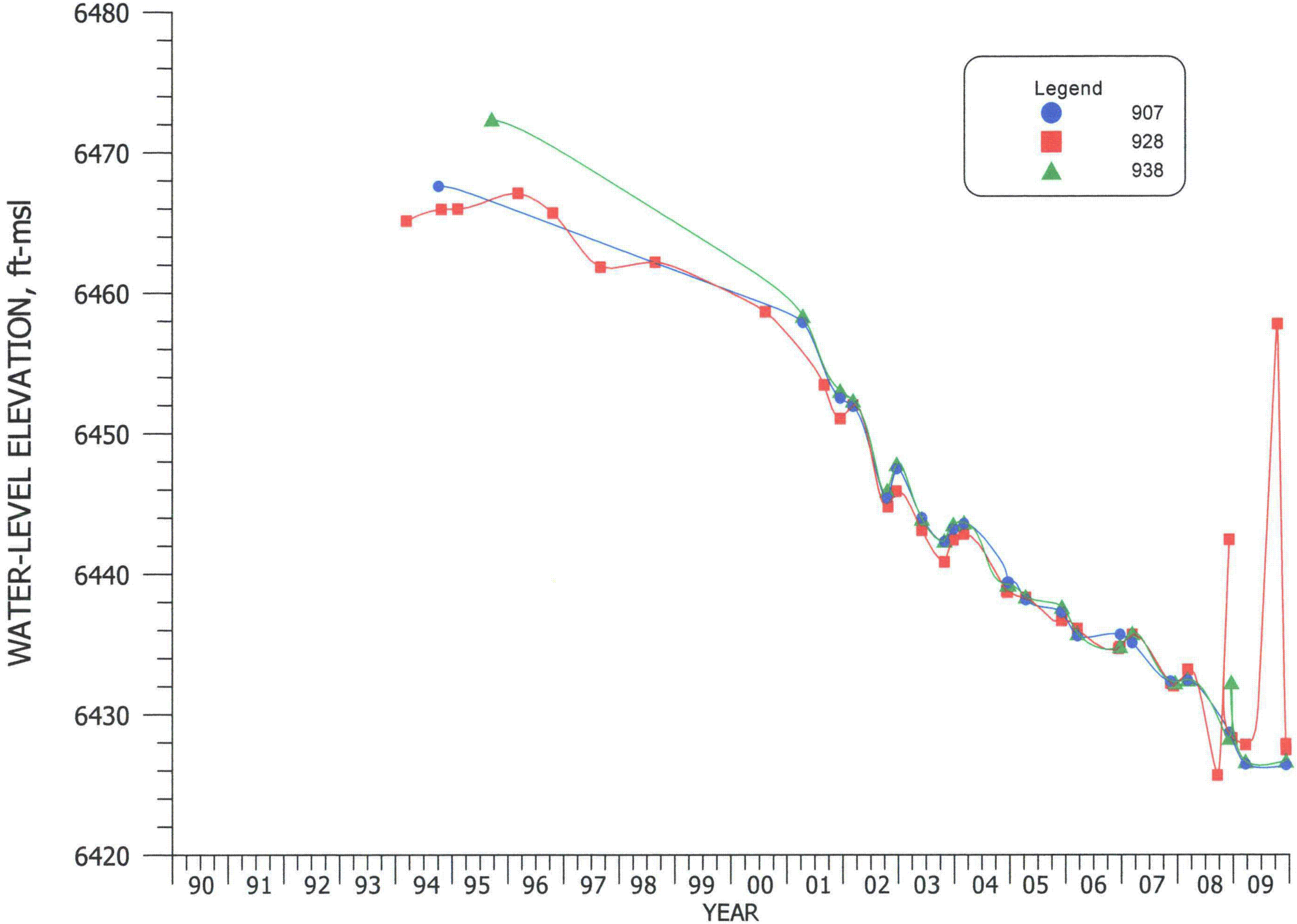
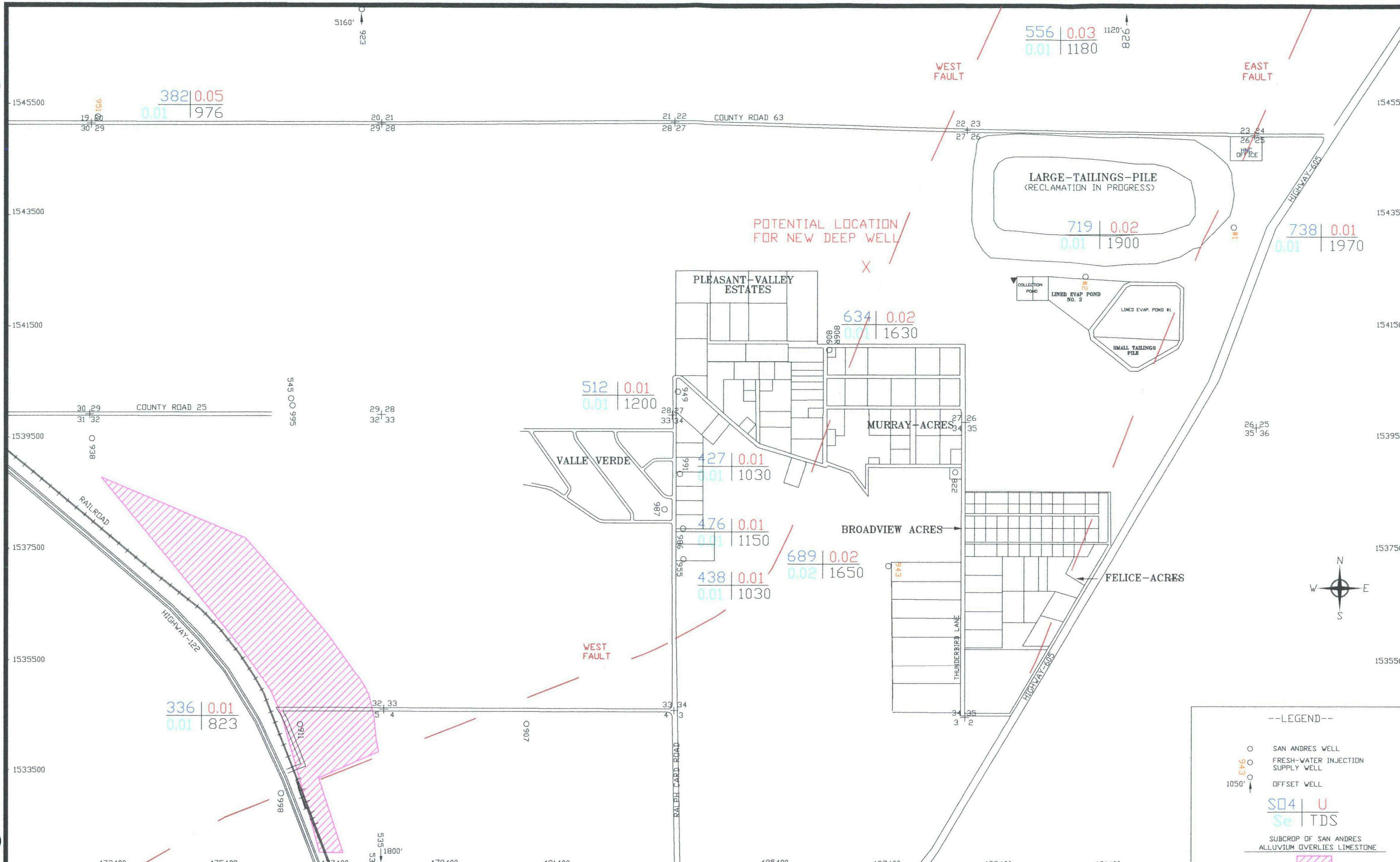


FIGURE 6-5. WATER-LEVEL ELEVATION FOR WELLS 907, 928 AND 938, FT-MSL.



SCALE: 1" = 1600'
C:\PROJECTS\2009-06\1600SAN rts
DATE: 1/6/10

FIGURE 6-6. WATER QUALITY FOR THE SAN ANDRES AQUIFER, 2008 mg/l

HOMESTAKE MILL & ADJACENT PROPERTIES
GRANTS, NM T11&12, R10W

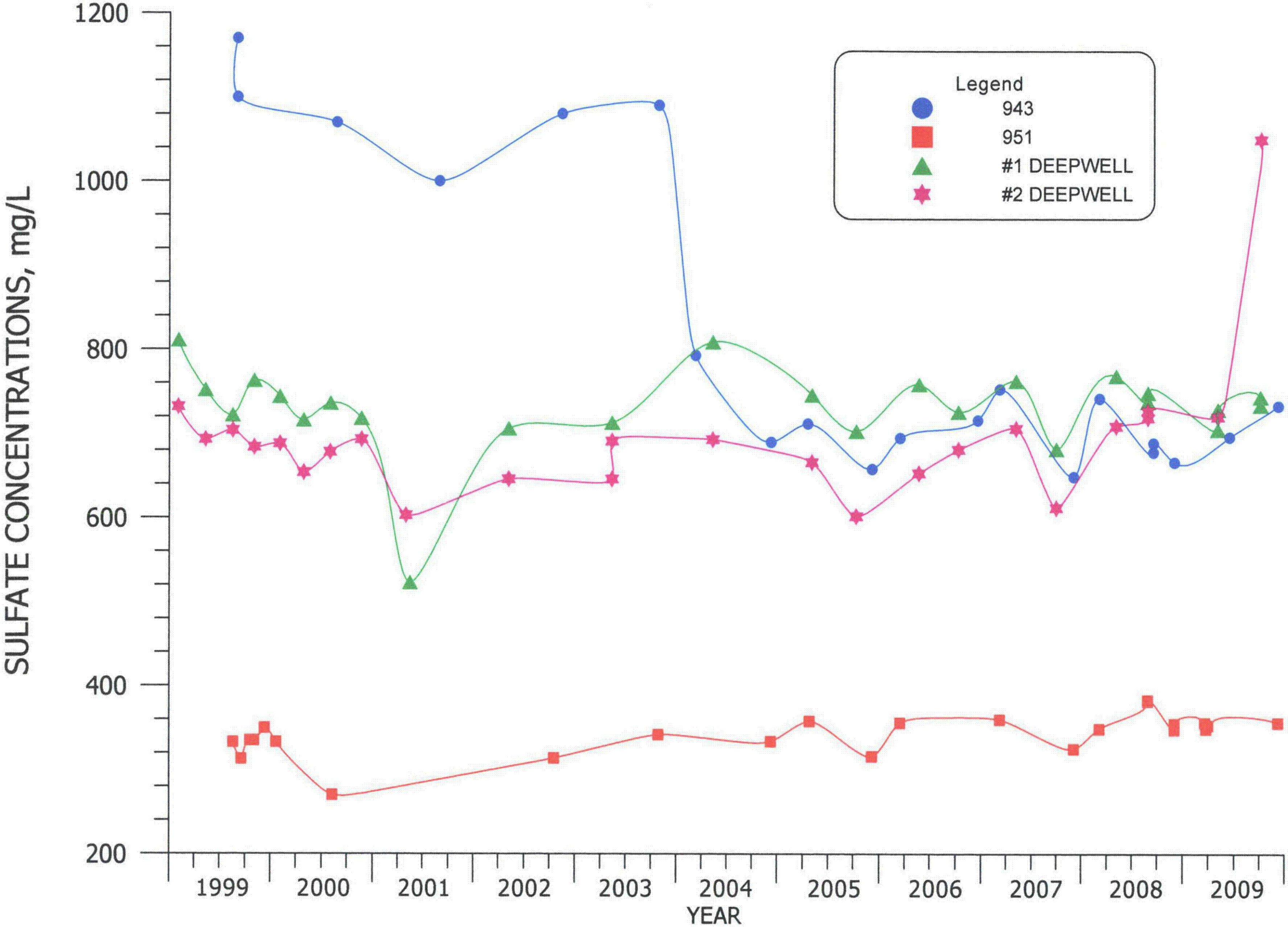


FIGURE 6-7. SULFATE CONCENTRATIONS FOR WELLS 943, 951, #1 DEEPWELL AND #2 DEEPWELL, FT-MSL.

TABLE 6-1. WELL DATA FOR THE SAN ANDRES WELLS.

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 Dee	1543307	493633	1000.0	10.0	12/12/2007	99.0800	6484.68	0.0	6583.76	130	6454	A	—
										303	6281	U	—
										433	6151	M	—
										597	5987	L	—
										955	5629	S	919-999
#2 Dee	1542424	490972	870.0	—	12/12/2009	152.259	6423.40	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	2/13/2008	135.600	6421.40	0.0	6557.00	790	5767	S	790-875
0534	1534589	476549	1000.0	16.0	12/12/2009	119.099	6433.47	0.0	6552.57	0	6553	S	-
0535	1530100	478450	198.0	12.0	12/4/2008	114.800	6425.20	0.0	6540.00	—	—	S	-
0907	1534250	480800	360.0	16.0	12/9/2009	119.199	6426.40	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	—	12/9/2009	170.110	6427.49	1.2	6597.60	138	6458	A	—
										801	5795	S	-
0938	1539500	473040	—	—	12/9/2009	142.100	6426.70	0.0	6568.80	95	6474	A	—
										120	6449	S	-
0943	1537222	487407	978.0	18.0	12/28/2009	134.600	6421.31	0.0	6555.91	704	5852	S	703-978
0949	1540350	483600	551.0	6.0	2/13/2008	130.600	6431.70	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	12/28/2009	150.199	6423.50	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	1538008	483745	467.0	5.0	8/23/2008	124	6526.00	0.8	6650.00	65	6584	A	—
										85	6564	L	—
										415	6234	S	420-467
0987	1538240	483360	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	—	8/26/2008	126.819	6524.18	1.4	6651.00	—	—	S	-
0995	1540115	476594	—	—	—	—	—	0.0	6474.00	—	—	S	-

TABLE 6-1. 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

L = Lower Chinle

S = San Andres Aquifer

r = Reported

* = Abandoned

7.0 RESTORATION PLAN

The restoration plan uses the collection of water to supply crop/grazing land irrigation with ground water containing slightly elevated concentrations and also collects water for fresh water injection. The collected water, consisting of impacted ground water that is extracted through irrigation supply wells, is sent to irrigation areas (see Figures 7-1 and 7-2 for locations) for the production of a hay crop or intensive cattle grazing.

An additional important phase of the restoration plan is the injection of water to aid restoration. Collected fresh water is injected into the ground water to aid in restoration by enhancing the capture of impacted ground water in nearby collection wells.

Homestake is evaluating alternate restoration programs for treating ground water where major constituent concentrations such as TDS and sulfate have been restored adequately and only minor contaminant constituents are needed to be restored. The removal of uranium through the use of a zeolite bed treatment system is being tested. This treatment process will allow ground water to be reused after the removal of low concentrations of uranium.

Insitu treatment is also being evaluated at the site. *Insitu* treatment will remove key constituents from the ground water but will also coat the alluvial material such that absorbed constituents are fixed in a stable form. *Insitu* biological treatment is one of these processes under evaluation. A carbon source is added to ground water and injected into the ground water to reduce the low concentrations of minor contaminants in the aquifer. The use of sodium tripolyphosphate is also being tested to evaluate the use of this precipitant to reduce *insitu* contaminant concentrations in the ground water. Reductant solution test work will be used to evaluate this additive for reducing the mobility of contaminants in the ground water. One of these alternative treatments or a combination of treatments will be used to aid restoration efforts in the off-site area.

7.1 COLLECTION OF WATER

The collection of water is used to supply water to irrigation fields and to supply water for fresh water injection. Figure 7-1 shows the location of the collection wells in the North irrigation area. The green labeled wells are presently being pumped while the black wells are not presently being used for collection but may be used in the future. The blue labeled wells are potential future collection wells that have not been drilled. Table 7-1 lists the Off-site DP collection well inventory and notes which wells are in use and which are not currently in use. Figure 7-2 presents this same information for the South irrigation area.

7.1.1 WATER SUPPLY TO IRRIGATION

A total of 1700 gallons per minute (gpm) of irrigation capacity is available at the Grants site which consists of two separate irrigation supply areas (see Figures 7-1 and 7-2). The South irrigation system has irrigation supply wells in Sections 3, 32, 33, 34 and 35 and irrigated fields in Sections 33 and 34. The North irrigation system has supply wells in Sections 20, 27, 28 and 29 and one 100 acre irrigated field in Section 28.

Present water quality limitations for water applied to the irrigation fields are a uranium concentration of 0.44 mg/l and a selenium concentration of 0.12 mg/l. Homestake proposes to reduce these limits with time as the alternate treatment processes are employed to reduce the concentrations. The tabulation below shows the proposed schedule to reduce the irrigation maximum concentrations for uranium and selenium that can be applied to these fields. Uranium concentrations in the South irrigation area for the Section 33 pivot, Section 33 flood and Section 34 flood are proposed to be decreased from 0.25 mg/l in 2010 to 0.03 in 2015. The selenium concentrations are proposed to be reduced from 0.1 to 0.05 by 2013. The northern irrigation area in Section 28 is over higher ground-water concentrations and its limits are proposed to be reduced at a slower rate.

PROPOSED SCHEDULE TO REDUCE THE IRRIGATION U LIMIT OF 0.44 AND SE OF 0.12 MG/L.

SECTION 33 PIVOT, SECTION 33 FLOOD AND *SECTION 34 FLOOD*			*SECTION 28 PIVOT*		
YEAR	MAXIMUM U	MAXIMUM SE	YEAR	MAXIMUM U	MAXIMUM SE
2010	0.25	0.1	2010	0.4	0.1
2011	0.2	0.08	2011	0.35	0.08
2012	0.15	0.06	2012	0.03	0.06
2013	0.1	0.05	2013	0.25	0.05
2014	0.05	0.05	2014	0.2	0.05
2015	0.03	0.05	2015	0.15	0.05
2016	0.03	0.05	2016	0.1	0.05
2017	0.03	0.05	2017	0.05	0.05

7.1.2 FRESH WATER INJECTION SUPPLY

Two San Andres aquifer wells (943 and 951) are used to produce fresh water for injection into the ground-water systems under the Off-site DP. Chinle wells CW18 and CW28 also supply water to the south irrigation injection system. This fresh water injection aids in the restoration of the ground water in the Grants Off-site areas. The fresh water builds a hydraulic head which helps drive the contaminated water to the irrigation supply wells and enhances the collection of ground water with slightly elevated contaminant concentrations. The fresh water injection results in a larger volume of water available in the alluvial aquifer for pumping. This injection maintains higher water levels in the alluvial aquifer and has been a benefit to the restoration of the alluvial ground-water system.

7.1.3 ALTERNATIVE RESTORATION WATER SUPPLY

Collection wells for the supply of water to the alternative treatment systems are shown on Figures 7-1 and 7-2. These figures show the potential supply wells which are labeled with a green, blue or black color. All of the irrigation supply wells could be used as supply wells for the alternative treatment systems. Wells H1 through H97 have been added as potential supply wells for the alternative treatments in the Sections 27 and 28 restoration zone. This restoration may be effective with fewer wells than those that are proposed. Wells H98 through H105 have been added as potential collection wells just north of the Valle Verde area.

Wells R1 through R51 have been added as potential collection wells for the alternative treatment options in Section 3 while wells Q1 through Q21 have been added in the Felice Acres area. Wells U1 through U14 have been added in Section 34 as potential collection wells to be used in the alternative treatment programs.

7.2 INJECTION

The injection of water into the alluvial ground water aquifer is from the San Andres and Chinle aquifers.

Figure 7-3 shows the location of the Off-site DP injection wells and infiltration lines for the North irrigation area. The green labeled well and infiltration lines are presently in use while the black labeled wells are not currently in use but may be used in the future for injection. The blue wells and infiltration lines are potential injection wells or lines that have not been installed. Table 7-2 lists the Off-site DP injection wells and notes which are currently in use or not in use.

Additional injection wells are proposed to be drilled in the alluvial aquifer in the North irrigation area (see Figure 7-3). These wells will be used in the restoration of this area of the alluvial aquifer. These new wells (shown in blue) have been given H series well names and will be used for aiding restoration in this area. An alternate treatment process is expected to be used for restoration of low concentrations in this area. Additional fresh water infiltration lines are shown on the north side of the supply wells. Potential wells H1 through H105 have been added to the North restoration area to be used in the alternative restoration program.

Figure 7-4 shows the Off-site South irrigation wells and infiltration lines. Figure 7-5 shows the Section 3 portion of the South Off-site injection area at a larger scale. An additional series of Q, R and U wells are shown in the south irrigation area. These wells will also be used with an alternate treatment process to reduce ground-water contaminant concentrations in this area. Additional infiltration lines are shown on the north and south sides of the Section 3 area.

7.2.1 FRESH WATER

Fresh water injection is being used adjacent to the site where ground water is collected. Fresh water injection near the irrigation supply wells is mainly used to create a hydraulic head which aids in the containment of the elevated contaminant concentrations and increases gradients to the collection wells adjacent to the area.

7.2.2 ALTERNATIVE RESTORATION INJECTION

The alternative restoration program will consists of injection of ground water after the addition of an additive to aid *insitu* restoration. The injection of water containing the amendment will disperse outward from the injection well to an associated collection wellpoint.

7.3 ALTERNATIVE RESTORATION

Alternative treatment methods will be used to treat low concentration water where the major constituents have been restored and only selected minor constituents such as uranium and molybdenum need to be treated. Alternative treatment options to be considered include:

1) use of zeolite treatment bed for removal of water contaminants and;
2) *insitu* treatment technologies that will incorporate the use of biological fixation, phosphate precipitation and/or organo-sulfide reductants.

Each of these treatment methods are briefly described below.

7.3.1 ZEOLITE WATER TREATMENT

Treatment of low concentrations of uranium and molybdenum will also be accomplished by flowing water through zeolite which strips or removes the uranium from the water. Figures 7-3, 7-4 and 7-5 show the locations of zeolite treatment sites in the North and South Off-site areas, respectively. These treatment beds will remove the slightly elevated contaminants from the water and it will then be injected into the alluvial aquifer for reuse in restoration of the area. A typical plan view of a zeolite treatment process is shown on Figure 7-6. This figure shows the process control building, acid storage and the regeneration mixing tank that will be used in subsequent stripping of uranium concentrations from the zeolite. The water to be treated flows through two zeolite beds prior to reuse. Figure 7-7 shows the typical cross-section of the two zeolite beds with the water flowing up through the zeolite beds and then utilized for reinjection. After the zeolite beds are loaded the uranium is stripped from the zeolite with a weak acid, the regeneration waste fluid will be transported to the Grants On-site evaporation ponds for storage and disposal. One of the *insitu* restoration additives may be added to the zeolite treated water prior to injecting it into the ground water.

7.3.2 *INSITU* RESTORATION

Insitu restoration where concentrations in the ground-water contain only minor contaminant levels will also be used. The *insitu* restoration objective is to reduce the concentrations in the ground-water solution but also to tie up the contaminants that are on the alluvial material to prevent future leaching of these constituents. Three types of *insitu* restoration are being considered and are described below.

7.3.2.1 BIO-REMEDIATION

Bio-remediation is one of the *insitu* restoration options. A carbon source will be added to ground-water and reinjected into the aquifer. Biological remediation will remove concentrations from the water solution and should tie up the contaminants that are absorbed to the alluvial material. Methanol is the carbon source that will be used, although other carbon nutrient sources may be considered in the future.

7.3.2.2 PHOSPHATE REMEDIATION

Insitu phosphate treatment will also be considered for treatment of contaminated ground water. The phosphate most likely to be used is sodium tripolyphosphate (STPP). STPP results in a precipitation of the phosphate and uranium concentrations;

this precipitation is intended to coat the absorbed constituents so that they are not readily released.

7.3.2.3 ORGANO-SULFIDE REDUCTANT REMEDIATION

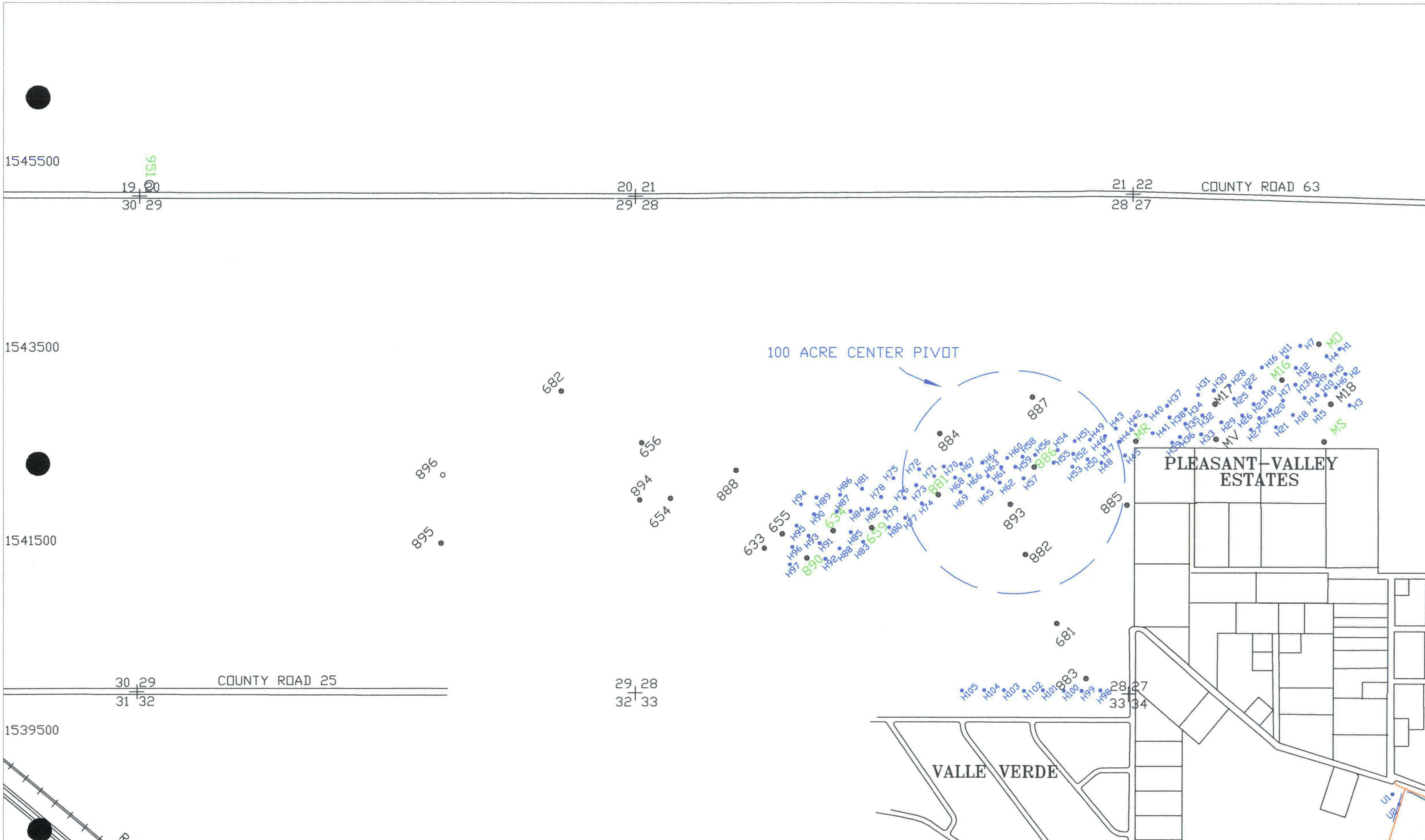
A reductant will be added to the ground water prior to reinjection which will result in precipitation of the uranium concentrations in the water. This precipitation results in a reduced environment such that the sulfide precipitation coats the alluvial material and prevents future release of absorbed uranium.

7.3.2.4 PHOSPHATE ADDITION TO IRRIGATED FIELDS

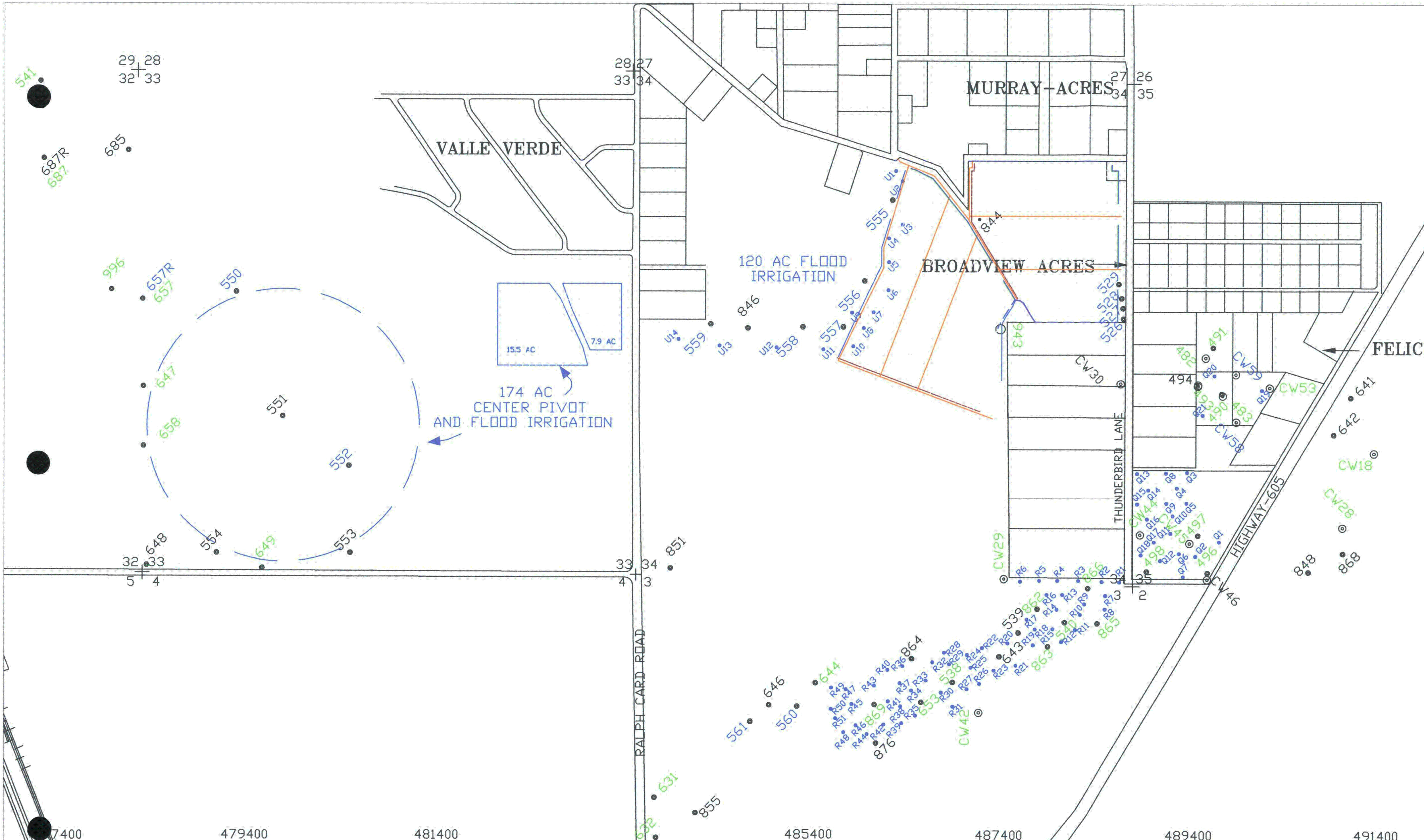
Addition of phosphate to the irrigated fields is proposed to increase the capacity of the soil profile to retain uranium removed from treated ground water. A slow release form of phosphate such as STTP is proposed to be applied to the fields. This application could be a powder application prior to heavy irrigation of the fields or an application that is dissolved in the irrigated water. Excess irrigation would be applied to drive the phosphate down below the root zone to enhance the absorption of uranium in the soil below the root zone. The uranium phosphate precipitation is intended to form a stable compound which will immobilize uranium migration.

7.4 RESTORATION SCHEDULE

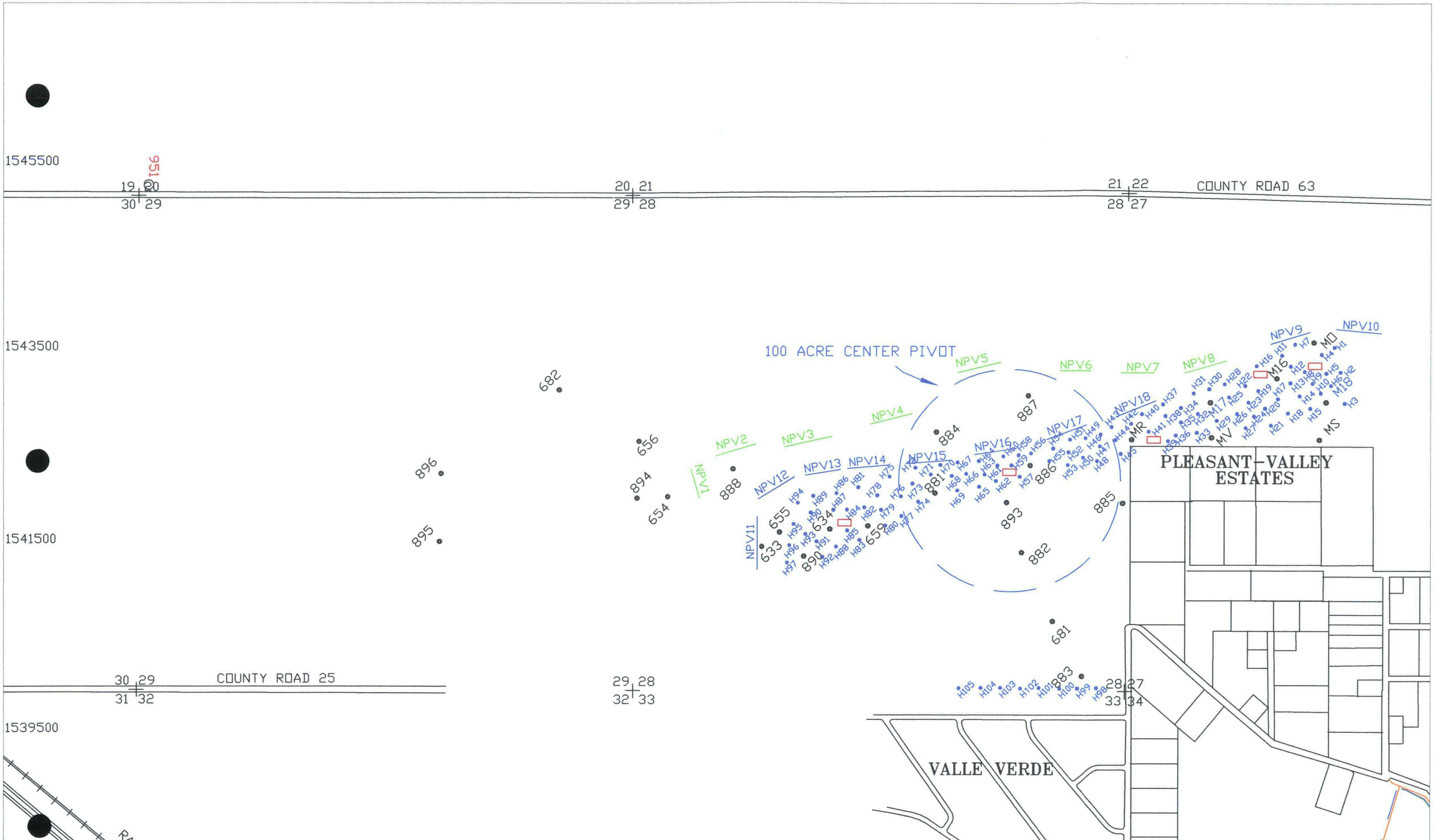
The ground-water restoration program at the Grants site is currently projected to extend through 2017. Operation of the irrigation and alternative restoration systems are planned through 2017. The fresh water injection program is expected to be phased out after 2016.



SCALE: 1" = 900' C:\PROJECTS\2009-06\DP-200 DATE: 2/15/10	**LEGEND** 890 COLLECTION WELL IN USE M17 PROPOSED COLLECTION WELL NOT IN USE 882 COLLECTION WELL NOT IN USE	HOMESTAKE MINING COMPANY GRANTS, NEW MEXICO	FIGURE 7-1. NORTH OFF-SITE DP COLLECTION LOCATIONS



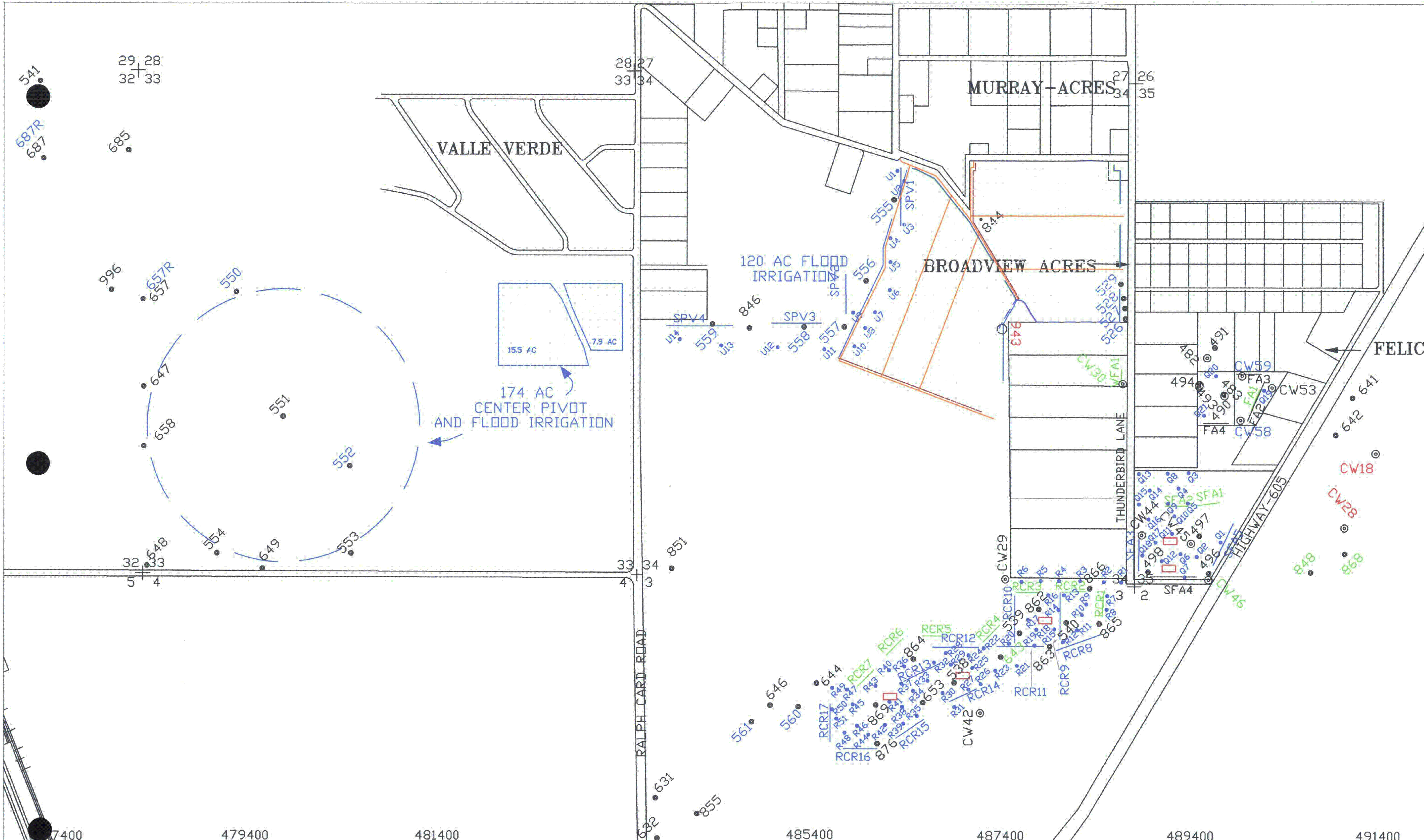
SCALE: 1" = 900'	**LEGEND**	HOMESTAKE MINING COMPANY GRANTS, NEW MEXICO	FIGURE 7-2. SOUTH OFF-SITE DP COLLECTION AREA
C:\PROJECTS\2009-06\DP-200	863 COLLECTION WELL IN USE 539 PROPOSED COLLECTION WELL NOT IN USE 641 COLLECTION WELL NOT IN USE		
DATE: 2/5/10			



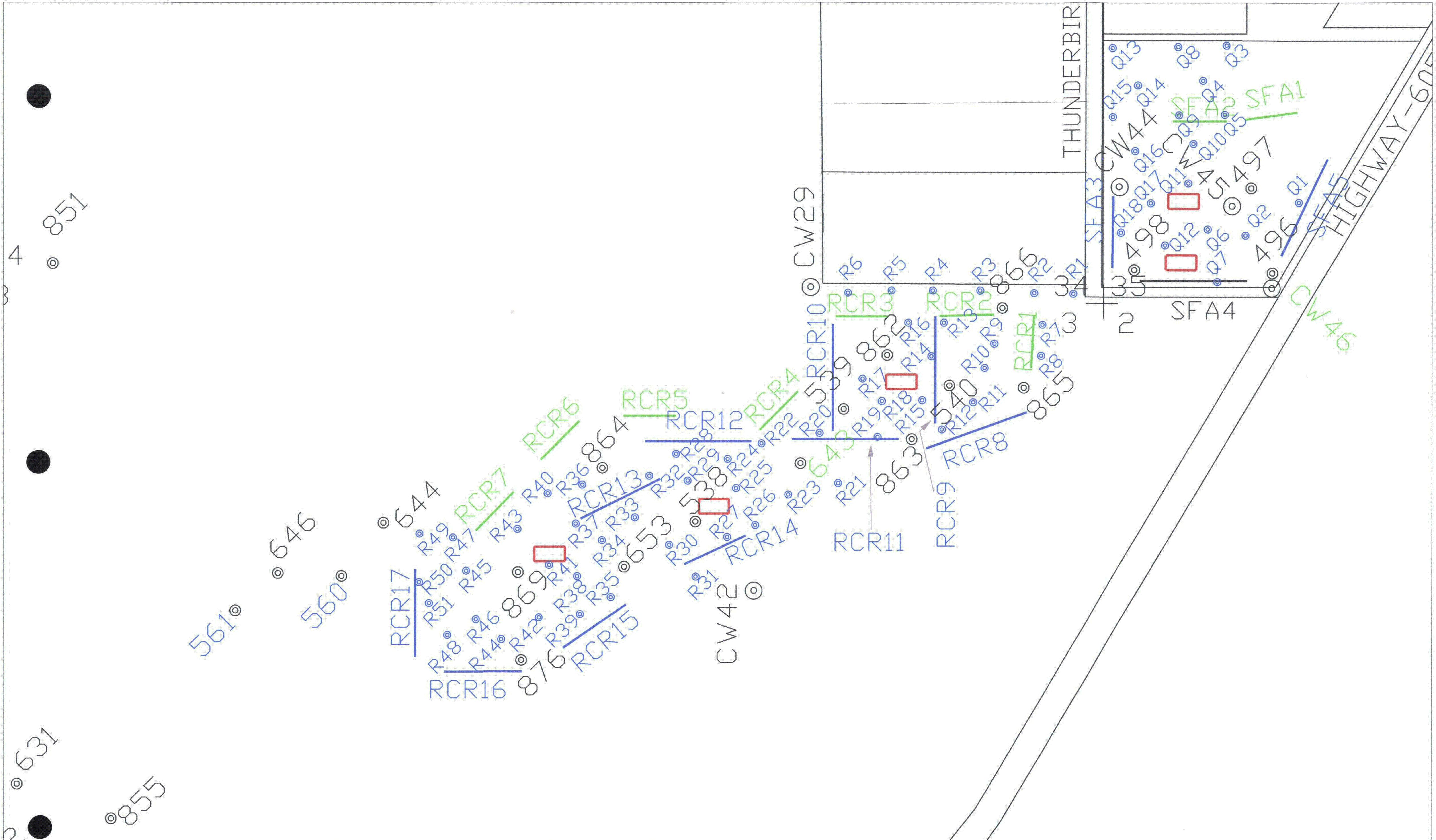
SCALE: 1" = 900'	**LEGEND**	
C:\PROJECTS\2009-06\DP-200	890 INJECTION WELL NOT IN USE 868 INJECTION WELL IN USE NPV1 INFILTRATION LINE IN USE	▭ ZEOLITE TREATMENT PILE H1 PROPOSED INJECTION WELL NPV11 PROPOSED INFILTRATION LINE 951 FRESH WATER INJECTION SUPPLY
DATE: 2/15/10		

HOMESTAKE MINING COMPANY
GRANTS, NEW MEXICO

FIGURE 7-3. NORTH OFF-SITE DP INJECTION LOCATIONS



SCALE: 1" = 900'	LEGEND		HOMESTAKE MINING COMPANY GRANTS, NEW MEXICO	FIGURE 7-4. SOUTH OFF-SITE DP INJECTION LOCATIONS
C:\PROJECTS\2009-06\DP-200	943 FRESH WATER INJECTION SUPPLY	ZEOLITE TREATMENT PILE		
DATE: 2/5/10	868 INJECTION WELL IN USE	539 PROPOSED INJECTION WELL		
	RCR5 INFILTRATION LINE IN USE	RCR17 PROPOSED INFILTRATION LINE		
		641 INJECTION WELL NOT IN USE		
		FA4 INFILTRATION LINE NOT IN USE		



SCALE: 1" = 400'	LEGEND		HOMESTAKE MINING COMPANY GRANTS, NEW MEXICO	FIGURE 7-5. SOUTH OFF-SITE DP INJECTION IN SECTION 3
C:\PROJECTS\2009-06\DP-200	943 FRESH WATER INJECTION SUPPLY 868 INJECTION WELL IN USE RCR5 INFILTRATION LINE IN USE	ZEOLITE TREATMENT PILE 539 PROPOSED INJECTION WELL RCR17 PROPOSED INFILTRATION LINE 641 INJECTION WELL NOT IN USE FA4 INFILTRATION LINE NOT IN USE		
DATE: 2/4/10				

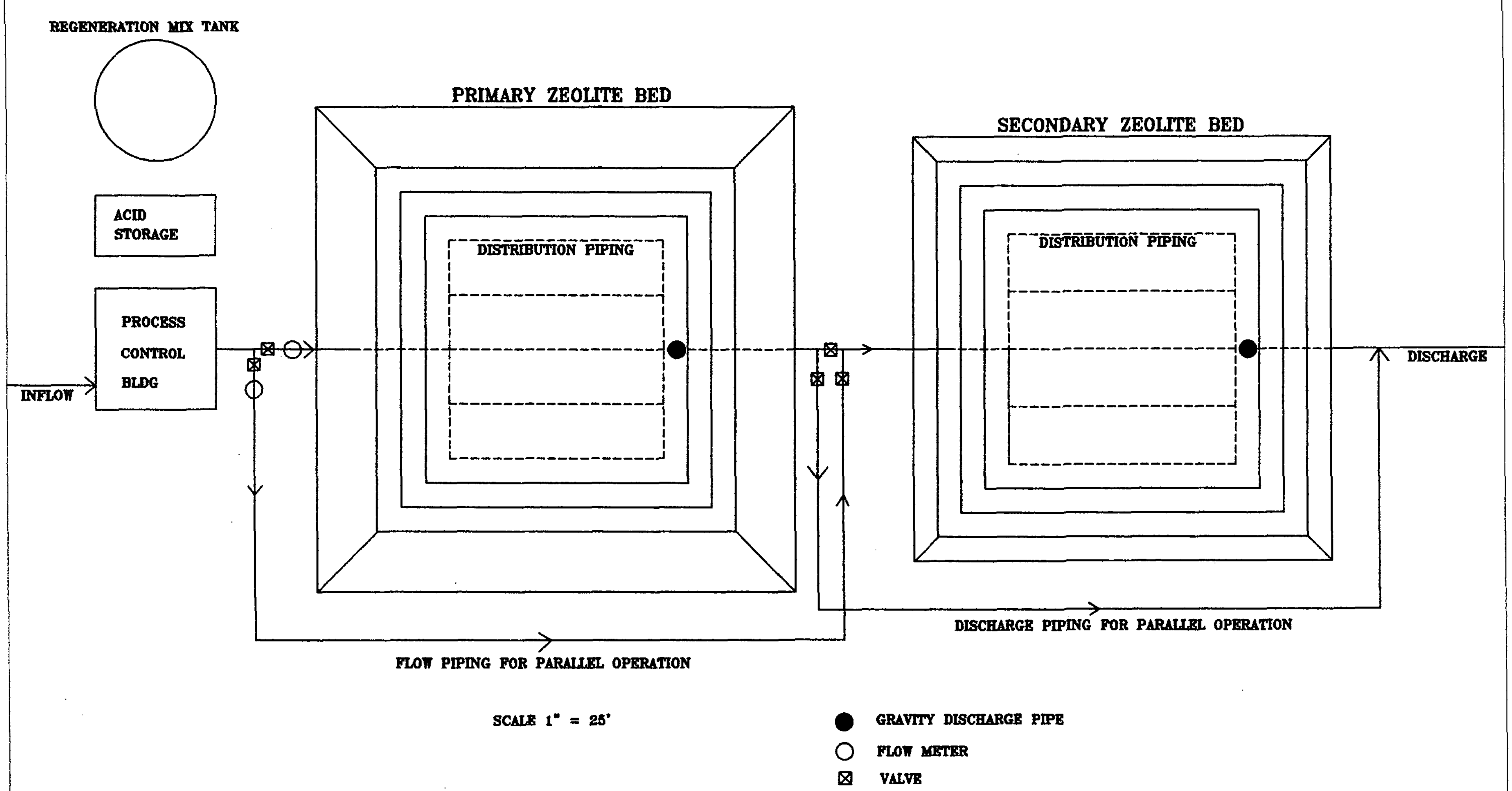


FIGURE 7-6. URANIUM ZEOLITE PROCESS PLAN VIEW

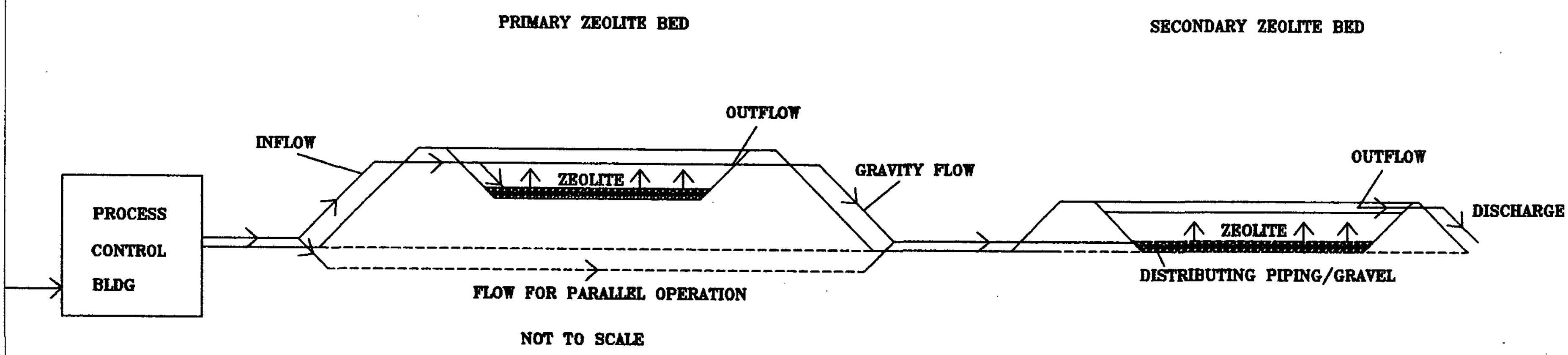


FIGURE 7-7. CROSS-SECTION OF ZEOLITE BED

Table 7-1 Off-Site Homestake Collection Well Inventory			
Well ID	Location	Use	Comments/2009 Status
482	Felice Acres	Ground Water Collection	currently in use
483	Felice Acres	Ground Water Collection	currently in use
490	Felice Acres	Ground Water Collection	currently in use
491	Felice Acres	Ground Water Collection	currently in use
493	Felice Acres	Ground Water Collection	currently in use
494	Felice Acres	Ground Water Collection	currently not in use
496	Felice Acres	Ground Water Collection	currently in use
497	Felice Acres	Ground Water Collection	currently in use
498	Felice Acres	Ground Water Collection	currently in use
526	west of Broadview Acres	Ground Water Collection	currently not in use
527	west of Broadview Acres	Ground Water Collection	currently not in use
528	west of Broadview Acres	Ground Water Collection	currently not in use
529	west of Broadview Acres	Ground Water Collection	currently not in use
538	Section 3	Ground Water Collection	currently in use
539	Section 3	Ground Water Collection	currently not in use
540	Section 3	Ground Water Collection	currently in use
541	Section 32	Ground Water Collection	currently in use
550	Section 33	Ground Water Collection	currently not in use
551	Section 33	Ground Water Collection	currently not in use
552	Section 33	Ground Water Collection	currently not in use
553	Section 33	Ground Water Collection	currently not in use
554	Section 33	Ground Water Collection	currently not in use
555	Section 34	Ground Water Collection	currently not in use
556	Section 34	Ground Water Collection	currently not in use
557	Section 34	Ground Water Collection	currently not in use
558	Section 34	Ground Water Collection	currently not in use
559	Section 34	Ground Water Collection	currently not in use
560	Section 3	Ground Water Collection	currently not in use
561	Section 3	Ground Water Collection	currently not in use
631	Section 3	Ground Water Collection	currently in use
632	Section 3	Ground Water Collection	currently in use
633	Section 28	Ground Water Collection	currently not in use
634	Section 28	Ground Water Collection	currently in use
641	Section 35	Ground Water Collection	currently not in use
642	Section 35	Ground Water Collection	currently not in use
643	Section 3	Ground Water Collection	currently not in use
644	Section 3	Ground Water Collection	currently in use
646	Section 3	Ground Water Collection	currently not in use
647	Section 33	Ground Water Collection	currently in use
648	Section 33	Ground Water Collection	currently not in use
649	Section 33	Ground Water Collection	currently in use
653	Section 3	Ground Water Collection	currently in use
654	Section 28	Ground Water Collection	currently not in use
655	Section 28	Ground Water Collection	currently not in use
656	Section 28	Ground Water Collection	currently not in use
657	Section 33	Ground Water Collection	currently in use
657R	Section 33	Ground Water Collection	currently not in use
658	Section 33	Ground Water Collection	currently in use
659	Section 28	Ground Water Collection	currently in use

Table 7-1
Off-Site Homestake Collection Well Inventory

Well ID	Location	Use	Comments/2009 Status
681	Section 28	Ground Water Collection	currently not in use
682	Section 29	Ground Water Collection	currently not in use
685	Section 32	Ground Water Collection	currently not in use
687	Section 32	Ground Water Collection	currently in use
687R	Section 32	Ground Water Collection	currently not in use
844	Section 34	Ground Water Collection	currently not in use
846	Section 34	Ground Water Collection	currently not in use
848	Section 35	Ground Water Collection	currently not in use
851	Section 34	Ground Water Collection	currently not in use
855	Section 3	Ground Water Collection	currently not in use
862	Section 3	Ground Water Collection	currently in use
863	Section 3	Ground Water Collection	currently in use
864	Section 3	Ground Water Collection	currently not in use
865	Section 3	Ground Water Collection	currently in use
866	Section 3	Ground Water Collection	currently in use
868	Section 35	Ground Water Collection	currently not in use
869	Section 3	Ground Water Collection	currently in use
876	Section 3	Ground Water Collection	currently not in use
881	Section 28	Ground Water Collection	currently in use
882	Section 28	Ground Water Collection	currently not in use
883	Section 28	Ground Water Collection	currently not in use
884	Section 28	Ground Water Collection	currently not in use
885	Section 28	Ground Water Collection	currently not in use
886	Section 28	Ground Water Collection	currently in use
887	Section 28	Ground Water Collection	currently not in use
888	Section 28	Ground Water Collection	currently not in use
890	Section 28	Ground Water Collection	currently in use
893	Section 28	Ground Water Collection	currently not in use
894	Section 28	Ground Water Collection	currently not in use
895	Section 29	Ground Water Collection	currently not in use
896	Section 29	Ground Water Collection	currently not in use
943	Section 34	Freshwater Injection Supply	currently in use
951	Section 20	Freshwater Injection Supply	currently in use
996	Section 32	Ground Water Collection	currently in use
CW18	Section 35	Freshwater Injection Supply	currently in use
CW28	Section 35	Freshwater Injection Supply	currently in use
CW29	Section 3	Ground Water Collection	currently in use
CW30	Section 34	Ground Water Collection	currently not in use
CW42	Section 3	Ground Water Collection	currently in use
CW44	Felice Acres	Ground Water Collection	currently in use
CW45	Felice Acres	Ground Water Collection	currently in use
CW46	Felice Acres	Ground Water Collection	currently not in use
CW53	Felice Acres	Ground Water Collection	currently in use
CW58	Felice Acres	Ground Water Collection	currently not in use
CW59	Felice Acres	Ground Water Collection	currently not in use
H1	Section 27	Ground Water Collection	currently not in use
H2	Section 27	Ground Water Collection	currently not in use
H3	Section 27	Ground Water Collection	currently not in use
H4	Section 27	Ground Water Collection	currently not in use

Table 7-1
Off-Site Homestake Collection Well Inventory

Well ID	Location	Use	Comments/2009 Status
H5	Section 27	Ground Water Collection	currently not in use
H6	Section 27	Ground Water Collection	currently not in use
H7	Section 27	Ground Water Collection	currently not in use
H8	Section 27	Ground Water Collection	currently not in use
H9	Section 27	Ground Water Collection	currently not in use
H10	Section 27	Ground Water Collection	currently not in use
H11	Section 27	Ground Water Collection	currently not in use
H12	Section 27	Ground Water Collection	currently not in use
H13	Section 27	Ground Water Collection	currently not in use
H14	Section 27	Ground Water Collection	currently not in use
H15	Section 27	Ground Water Collection	currently not in use
H16	Section 27	Ground Water Collection	currently not in use
H17	Section 27	Ground Water Collection	currently not in use
H18	Section 27	Ground Water Collection	currently not in use
H19	Section 27	Ground Water Collection	currently not in use
H20	Section 27	Ground Water Collection	currently not in use
H21	Section 27	Ground Water Collection	currently not in use
H22	Section 27	Ground Water Collection	currently not in use
H23	Section 27	Ground Water Collection	currently not in use
H24	Section 27	Ground Water Collection	currently not in use
H25	Section 27	Ground Water Collection	currently not in use
H26	Section 27	Ground Water Collection	currently not in use
H27	Section 27	Ground Water Collection	currently not in use
H28	Section 27	Ground Water Collection	currently not in use
H29	Section 27	Ground Water Collection	currently not in use
H30	Section 27	Ground Water Collection	currently not in use
H31	Section 27	Ground Water Collection	currently not in use
H32	Section 27	Ground Water Collection	currently not in use
H33	Section 27	Ground Water Collection	currently not in use
H34	Section 27	Ground Water Collection	currently not in use
H35	Section 27	Ground Water Collection	currently not in use
H36	Section 27	Ground Water Collection	currently not in use
H37	Section 27	Ground Water Collection	currently not in use
H38	Section 27	Ground Water Collection	currently not in use
H39	Section 27	Ground Water Collection	currently not in use
H40	Section 27	Ground Water Collection	currently not in use
H41	Section 27	Ground Water Collection	currently not in use
H42	Section 27	Ground Water Collection	currently not in use
H43	Section 28	Ground Water Collection	currently not in use
H44	Section 28	Ground Water Collection	currently not in use
H45	Section 28	Ground Water Collection	currently not in use
H46	Section 28	Ground Water Collection	currently not in use
H47	Section 28	Ground Water Collection	currently not in use
H48	Section 28	Ground Water Collection	currently not in use
H49	Section 28	Ground Water Collection	currently not in use
H50	Section 28	Ground Water Collection	currently not in use
H51	Section 28	Ground Water Collection	currently not in use
H52	Section 28	Ground Water Collection	currently not in use
H53	Section 28	Ground Water Collection	currently not in use

Table 7-1 Off-Site Homestake Collection Well Inventory			
Well ID	Location	Use	Comments/2009 Status
H54	Section 28	Ground Water Collection	currently not in use
H55	Section 28	Ground Water Collection	currently not in use
H56	Section 28	Ground Water Collection	currently not in use
H57	Section 28	Ground Water Collection	currently not in use
H58	Section 28	Ground Water Collection	currently not in use
H59	Section 28	Ground Water Collection	currently not in use
H60	Section 28	Ground Water Collection	currently not in use
H61	Section 28	Ground Water Collection	currently not in use
H62	Section 28	Ground Water Collection	currently not in use
H63	Section 28	Ground Water Collection	currently not in use
H64	Section 28	Ground Water Collection	currently not in use
H65	Section 28	Ground Water Collection	currently not in use
H66	Section 28	Ground Water Collection	currently not in use
H67	Section 28	Ground Water Collection	currently not in use
H68	Section 28	Ground Water Collection	currently not in use
H69	Section 28	Ground Water Collection	currently not in use
H70	Section 28	Ground Water Collection	currently not in use
H71	Section 28	Ground Water Collection	currently not in use
H72	Section 28	Ground Water Collection	currently not in use
H73	Section 28	Ground Water Collection	currently not in use
H74	Section 28	Ground Water Collection	currently not in use
H75	Section 28	Ground Water Collection	currently not in use
H76	Section 28	Ground Water Collection	currently not in use
H77	Section 28	Ground Water Collection	currently not in use
H78	Section 28	Ground Water Collection	currently not in use
H79	Section 28	Ground Water Collection	currently not in use
H80	Section 28	Ground Water Collection	currently not in use
H81	Section 28	Ground Water Collection	currently not in use
H82	Section 28	Ground Water Collection	currently not in use
H83	Section 28	Ground Water Collection	currently not in use
H84	Section 28	Ground Water Collection	currently not in use
H85	Section 28	Ground Water Collection	currently not in use
H86	Section 28	Ground Water Collection	currently not in use
H87	Section 28	Ground Water Collection	currently not in use
H88	Section 28	Ground Water Collection	currently not in use
H89	Section 28	Ground Water Collection	currently not in use
H90	Section 28	Ground Water Collection	currently not in use
H91	Section 28	Ground Water Collection	currently not in use
H92	Section 28	Ground Water Collection	currently not in use
H93	Section 28	Ground Water Collection	currently not in use
H94	Section 28	Ground Water Collection	currently not in use
H95	Section 28	Ground Water Collection	currently not in use
H96	Section 28	Ground Water Collection	currently not in use
H97	Section 28	Ground Water Collection	currently not in use
H98	Section 28	Ground Water Collection	currently not in use
H99	Section 28	Ground Water Collection	currently not in use
H100	Section 28	Ground Water Collection	currently not in use
H101	Section 28	Ground Water Collection	currently not in use
H102	Section 28	Ground Water Collection	currently not in use

Table 7-1 Off-Site Homestake Collection Well Inventory			
Well ID	Location	Use	Comments/2009 Status
H103	Section 28	Ground Water Collection	currently not in use
H104	Section 28	Ground Water Collection	currently not in use
H105	Section 28	Ground Water Collection	currently not in use
M16	Section 27	Ground Water Collection	currently in use
M17	Section 27	Ground Water Collection	currently not in use
M18	Section 27	Ground Water Collection	currently not in use
MO	Section 27	Ground Water Collection	currently in use
MR	Section 27	Ground Water Collection	currently in use
MS	Section 27	Ground Water Collection	currently in use
MV	Section 27	Ground Water Collection	currently not in use
Q1	Felice Acres	Ground Water Collection	currently not in use
Q2	Felice Acres	Ground Water Collection	currently not in use
Q3	Felice Acres	Ground Water Collection	currently not in use
Q4	Felice Acres	Ground Water Collection	currently not in use
Q5	Felice Acres	Ground Water Collection	currently not in use
Q6	Felice Acres	Ground Water Collection	currently not in use
Q7	Felice Acres	Ground Water Collection	currently not in use
Q8	Felice Acres	Ground Water Collection	currently not in use
Q9	Felice Acres	Ground Water Collection	currently not in use
Q10	Felice Acres	Ground Water Collection	currently not in use
Q11	Felice Acres	Ground Water Collection	currently not in use
Q12	Felice Acres	Ground Water Collection	currently not in use
Q13	Felice Acres	Ground Water Collection	currently not in use
Q14	Felice Acres	Ground Water Collection	currently not in use
Q15	Felice Acres	Ground Water Collection	currently not in use
Q16	Felice Acres	Ground Water Collection	currently not in use
Q17	Felice Acres	Ground Water Collection	currently not in use
Q18	Felice Acres	Ground Water Collection	currently not in use
Q19	Felice Acres	Ground Water Collection	currently not in use
Q20	Felice Acres	Ground Water Collection	currently not in use
Q21	Felice Acres	Ground Water Collection	currently not in use
U1	Section 34	Ground Water Collection	currently not in use
U2	Section 34	Ground Water Collection	currently not in use
U3	Section 34	Ground Water Collection	currently not in use
U4	Section 34	Ground Water Collection	currently not in use
U5	Section 34	Ground Water Collection	currently not in use
U6	Section 34	Ground Water Collection	currently not in use
U7	Section 34	Ground Water Collection	currently not in use
U8	Section 34	Ground Water Collection	currently not in use
U9	Section 34	Ground Water Collection	currently not in use
U10	Section 34	Ground Water Collection	currently not in use
U11	Section 34	Ground Water Collection	currently not in use
U12	Section 34	Ground Water Collection	currently not in use
U13	Section 34	Ground Water Collection	currently not in use
U14	Section 34	Ground Water Collection	currently not in use
R1	Section 3	Ground Water Collection	currently not in use
R2	Section 3	Ground Water Collection	currently not in use
R3	Section 3	Ground Water Collection	currently not in use
R4	Section 3	Ground Water Collection	currently not in use

Table 7-1 Off-Site Homestake Collection Well Inventory			
Well ID	Location	Use	Comments/2009 Status
R5	Section 3	Ground Water Collection	currently not in use
R6	Section 3	Ground Water Collection	currently not in use
R7	Section 3	Ground Water Collection	currently not in use
R8	Section 3	Ground Water Collection	currently not in use
R9	Section 3	Ground Water Collection	currently not in use
R10	Section 3	Ground Water Collection	currently not in use
R11	Section 3	Ground Water Collection	currently not in use
R12	Section 3	Ground Water Collection	currently not in use
R13	Section 3	Ground Water Collection	currently not in use
R14	Section 3	Ground Water Collection	currently not in use
R15	Section 3	Ground Water Collection	currently not in use
R16	Section 3	Ground Water Collection	currently not in use
R17	Section 3	Ground Water Collection	currently not in use
R18	Section 3	Ground Water Collection	currently not in use
R19	Section 3	Ground Water Collection	currently not in use
R20	Section 3	Ground Water Collection	currently not in use
R21	Section 3	Ground Water Collection	currently not in use
R22	Section 3	Ground Water Collection	currently not in use
R23	Section 3	Ground Water Collection	currently not in use
R24	Section 3	Ground Water Collection	currently not in use
R25	Section 3	Ground Water Collection	currently not in use
R26	Section 3	Ground Water Collection	currently not in use
R27	Section 3	Ground Water Collection	currently not in use
R28	Section 3	Ground Water Collection	currently not in use
R29	Section 3	Ground Water Collection	currently not in use
R30	Section 3	Ground Water Collection	currently not in use
R31	Section 3	Ground Water Collection	currently not in use
R32	Section 3	Ground Water Collection	currently not in use
R33	Section 3	Ground Water Collection	currently not in use
R34	Section 3	Ground Water Collection	currently not in use
R35	Section 3	Ground Water Collection	currently not in use
R36	Section 3	Ground Water Collection	currently not in use
R37	Section 3	Ground Water Collection	currently not in use
R38	Section 3	Ground Water Collection	currently not in use
R39	Section 3	Ground Water Collection	currently not in use
R40	Section 3	Ground Water Collection	currently not in use
R41	Section 3	Ground Water Collection	currently not in use
R42	Section 3	Ground Water Collection	currently not in use
R43	Section 3	Ground Water Collection	currently not in use
R44	Section 3	Ground Water Collection	currently not in use
R45	Section 3	Ground Water Collection	currently not in use
R46	Section 3	Ground Water Collection	currently not in use
R47	Section 3	Ground Water Collection	currently not in use
R48	Section 3	Ground Water Collection	currently not in use
R49	Section 3	Ground Water Collection	currently not in use
R50	Section 3	Ground Water Collection	currently not in use
R51	Section 3	Ground Water Collection	currently not in use

Table 7-2 Off-Site Homestake Injection Well Inventory			
Well ID	Location	Use	Comments/2009 Status
482	Felice Acres	clean/treated water injection	currently not in use
483	Felice Acres	clean/treated water injection	currently not in use
490	Felice Acres	clean/treated water injection	currently not in use
491	Felice Acres	clean/treated water injection	currently not in use
493	Felice Acres	clean/treated water injection	currently not in use
494	Felice Acres	clean/treated water injection	currently not in use
496	Felice Acres	clean/treated water injection	currently not in use
497	Felice Acres	clean/treated water injection	currently not in use
498	Felice Acres	clean/treated water injection	currently not in use
526	west of Broadview Acres	clean/treated water injection	currently not in use
527	west of Broadview Acres	clean/treated water injection	currently not in use
528	west of Broadview Acres	clean/treated water injection	currently not in use
529	west of Broadview Acres	clean/treated water injection	currently not in use
538	Section 3	clean/treated water injection	currently not in use
539	Section 3	clean/treated water injection	currently not in use
540	Section 3	clean/treated water injection	currently not in use
541	Section 32	clean/treated water injection	currently not in use
550	Section 33	clean/treated water injection	currently not in use
551	Section 33	clean/treated water injection	currently not in use
552	Section 33	clean/treated water injection	currently not in use
553	Section 33	clean/treated water injection	currently not in use
554	Section 33	clean/treated water injection	currently not in use
555	Section 34	clean/treated water injection	currently not in use
556	Section 34	clean/treated water injection	currently not in use
557	Section 34	clean/treated water injection	currently not in use
558	Section 34	clean/treated water injection	currently not in use
559	Section 34	clean/treated water injection	currently not in use
560	Section 3	clean/treated water injection	currently not in use
561	Section 3	clean/treated water injection	currently not in use
631	Section 3	clean/treated water injection	currently not in use
632	Section 3	clean/treated water injection	currently not in use
633	Section 28	clean/treated water injection	currently not in use
634	Section 28	clean/treated water injection	currently not in use
641	Section 35	clean/treated water injection	currently not in use
642	Section 35	clean/treated water injection	currently not in use
643	Section 3	clean/treated water injection	currently in use
644	Section 3	clean/treated water injection	currently not in use
646	Section 3	clean/treated water injection	currently not in use
647	Section 33	clean/treated water injection	currently not in use
648	Section 33	clean/treated water injection	currently not in use
649	Section 33	clean/treated water injection	currently not in use
653	Section 3	clean/treated water injection	currently not in use
654	Section 28	clean/treated water injection	currently not in use
655	Section 28	clean/treated water injection	currently not in use
656	Section 28	clean/treated water injection	currently not in use
657	Section 33	clean/treated water injection	currently not in use
657R	Section 33	clean/treated water injection	currently not in use
658	Section 33	clean/treated water injection	currently not in use
659	Section 28	clean/treated water injection	currently not in use

Table 7-2 Off-Site Homestake Injection Well Inventory			
Well ID	**Location**	**Use**	**Comments/2009 Status**
681	Section 28	clean/treated water injection	currently not in use
682	Section 29	clean/treated water injection	currently not in use
685	Section 32	clean/treated water injection	currently not in use
687	Section 32	clean/treated water injection	currently not in use
687R	Section 32	clean/treated water injection	currently not in use
844	Section 34	clean/treated water injection	currently not in use
846	Section 34	clean/treated water injection	currently not in use
848	Section 35	clean/treated water injection	currently in use
851	Section 34	clean/treated water injection	currently not in use
855	Section 3	clean/treated water injection	currently not in use
862	Section 3	clean/treated water injection	currently not in use
863	Section 3	clean/treated water injection	currently not in use
864	Section 3	clean/treated water injection	currently not in use
865	Section 3	clean/treated water injection	currently not in use
866	Section 3	clean/treated water injection	currently not in use
868	Section 35	clean/treated water injection	currently in use
869	Section 3	clean/treated water injection	currently not in use
876	Section 3	clean/treated water injection	currently not in use
881	Section 28	clean/treated water injection	currently not in use
882	Section 28	clean/treated water injection	currently not in use
883	Section 28	clean/treated water injection	currently not in use
884	Section 28	clean/treated water injection	currently not in use
885	Section 28	clean/treated water injection	currently not in use
886	Section 28	clean/treated water injection	currently not in use
887	Section 28	clean/treated water injection	currently not in use
888	Section 28	clean/treated water injection	currently not in use
890	Section 28	clean/treated water injection	currently not in use
893	Section 28	clean/treated water injection	currently not in use
894	Section 28	clean/treated water injection	currently not in use
895	Section 29	clean/treated water injection	currently not in use
896	Section 29	clean/treated water injection	currently not in use
943	Section 34	clean/treated water injection	currently not in use
951	Section 20	clean/treated water injection	currently not in use
996	Section 32	clean/treated water injection	currently not in use
CW18	Section 35	clean/treated water injection	currently not in use
CW28	Section 35	clean/treated water injection	currently not in use
CW29	Section 3	clean/treated water injection	currently not in use
CW30	Section 34	clean/treated water injection	currently in use
CW42	Section 3	clean/treated water injection	currently not in use
CW44	Felice Acres	clean/treated water injection	currently not in use
CW45	Felice Acres	clean/treated water injection	currently not in use
CW46	Felice Acres	clean/treated water injection	currently in use
CW53	Felice Acres	clean/treated water injection	currently not in use
CW58	Felice Acres	clean/treated water injection	currently not in use
CW59	Felice Acres	clean/treated water injection	currently not in use
FA1 IL	Felice Acres	clean/treated water injection	currently in use
FA2 IL	Felice Acres	clean/treated water injection	currently not in use
FA3 IL	Felice Acres	clean/treated water injection	currently not in use
FA4 IL	Felice Acres	clean/treated water injection	currently not in use

Table 7-2
Off-Site Homestake Injection Well Inventory

Well ID	Location	Use	Comments/2009 Status
H1	Section 27	clean/treated water injection	currently not in use
H2	Section 27	clean/treated water injection	currently not in use
H3	Section 27	clean/treated water injection	currently not in use
H4	Section 27	clean/treated water injection	currently not in use
H5	Section 27	clean/treated water injection	currently not in use
H6	Section 27	clean/treated water injection	currently not in use
H7	Section 27	clean/treated water injection	currently not in use
H8	Section 27	clean/treated water injection	currently not in use
H9	Section 27	clean/treated water injection	currently not in use
H10	Section 27	clean/treated water injection	currently not in use
H11	Section 27	clean/treated water injection	currently not in use
H12	Section 27	clean/treated water injection	currently not in use
H13	Section 27	clean/treated water injection	currently not in use
H14	Section 27	clean/treated water injection	currently not in use
H15	Section 27	clean/treated water injection	currently not in use
H16	Section 27	clean/treated water injection	currently not in use
H17	Section 27	clean/treated water injection	currently not in use
H18	Section 27	clean/treated water injection	currently not in use
H19	Section 27	clean/treated water injection	currently not in use
H20	Section 27	clean/treated water injection	currently not in use
H21	Section 27	clean/treated water injection	currently not in use
H22	Section 27	clean/treated water injection	currently not in use
H23	Section 27	clean/treated water injection	currently not in use
H24	Section 27	clean/treated water injection	currently not in use
H25	Section 27	clean/treated water injection	currently not in use
H26	Section 27	clean/treated water injection	currently not in use
H27	Section 27	clean/treated water injection	currently not in use
H28	Section 27	clean/treated water injection	currently not in use
H29	Section 27	clean/treated water injection	currently not in use
H30	Section 27	clean/treated water injection	currently not in use
H31	Section 27	clean/treated water injection	currently not in use
H32	Section 27	clean/treated water injection	currently not in use
H33	Section 27	clean/treated water injection	currently not in use
H34	Section 27	clean/treated water injection	currently not in use
H35	Section 27	clean/treated water injection	currently not in use
H36	Section 27	clean/treated water injection	currently not in use
H37	Section 27	clean/treated water injection	currently not in use
H38	Section 27	clean/treated water injection	currently not in use
H39	Section 27	clean/treated water injection	currently not in use
H40	Section 27	clean/treated water injection	currently not in use
H41	Section 27	clean/treated water injection	currently not in use
H42	Section 27	clean/treated water injection	currently not in use
H43	Section 28	clean/treated water injection	currently not in use
H44	Section 28	clean/treated water injection	currently not in use
H45	Section 28	clean/treated water injection	currently not in use
H46	Section 28	clean/treated water injection	currently not in use
H47	Section 28	clean/treated water injection	currently not in use
H48	Section 28	clean/treated water injection	currently not in use
H49	Section 28	clean/treated water injection	currently not in use

Table 7-2 Off-Site Homestake Injection Well Inventory			
Well ID	Location	Use	Comments/2009 Status
H50	Section 28	clean/treated water injection	currently not in use
H51	Section 28	clean/treated water injection	currently not in use
H52	Section 28	clean/treated water injection	currently not in use
H53	Section 28	clean/treated water injection	currently not in use
H54	Section 28	clean/treated water injection	currently not in use
H55	Section 28	clean/treated water injection	currently not in use
H56	Section 28	clean/treated water injection	currently not in use
H57	Section 28	clean/treated water injection	currently not in use
H58	Section 28	clean/treated water injection	currently not in use
H59	Section 28	clean/treated water injection	currently not in use
H60	Section 28	clean/treated water injection	currently not in use
H61	Section 28	clean/treated water injection	currently not in use
H62	Section 28	clean/treated water injection	currently not in use
H63	Section 28	clean/treated water injection	currently not in use
H64	Section 28	clean/treated water injection	currently not in use
H65	Section 28	clean/treated water injection	currently not in use
H66	Section 28	clean/treated water injection	currently not in use
H67	Section 28	clean/treated water injection	currently not in use
H68	Section 28	clean/treated water injection	currently not in use
H69	Section 28	clean/treated water injection	currently not in use
H70	Section 28	clean/treated water injection	currently not in use
H71	Section 28	clean/treated water injection	currently not in use
H72	Section 28	clean/treated water injection	currently not in use
H73	Section 28	clean/treated water injection	currently not in use
H74	Section 28	clean/treated water injection	currently not in use
H75	Section 28	clean/treated water injection	currently not in use
H76	Section 28	clean/treated water injection	currently not in use
H77	Section 28	clean/treated water injection	currently not in use
H78	Section 28	clean/treated water injection	currently not in use
H79	Section 28	clean/treated water injection	currently not in use
H80	Section 28	clean/treated water injection	currently not in use
H81	Section 28	clean/treated water injection	currently not in use
H82	Section 28	clean/treated water injection	currently not in use
H83	Section 28	clean/treated water injection	currently not in use
H84	Section 28	clean/treated water injection	currently not in use
H85	Section 28	clean/treated water injection	currently not in use
H86	Section 28	clean/treated water injection	currently not in use
H87	Section 28	clean/treated water injection	currently not in use
H88	Section 28	clean/treated water injection	currently not in use
H89	Section 28	clean/treated water injection	currently not in use
H90	Section 28	clean/treated water injection	currently not in use
H91	Section 28	clean/treated water injection	currently not in use
H92	Section 28	clean/treated water injection	currently not in use
H93	Section 28	clean/treated water injection	currently not in use
H94	Section 28	clean/treated water injection	currently not in use
H95	Section 28	clean/treated water injection	currently not in use
H96	Section 28	clean/treated water injection	currently not in use
H97	Section 28	clean/treated water injection	currently not in use
H98	Section 28	clean/treated water injection	currently not in use

Table 7-2
Off-Site Homestake Injection Well Inventory

Well ID	Location	Use	Comments/2009 Status
H99	Section 28	clean/treated water injection	currently not in use
H100	Section 28	clean/treated water injection	currently not in use
H101	Section 28	clean/treated water injection	currently not in use
H102	Section 28	clean/treated water injection	currently not in use
H103	Section 28	clean/treated water injection	currently not in use
H104	Section 28	clean/treated water injection	currently not in use
H105	Section 28	clean/treated water injection	currently not in use
M16	Section 27	clean/treated water injection	currently not in use
M17	Section 27	clean/treated water injection	currently not in use
M18	Section 27	clean/treated water injection	currently not in use
MO	Section 27	clean/treated water injection	currently not in use
MR	Section 27	clean/treated water injection	currently not in use
MS	Section 27	clean/treated water injection	currently not in use
MV	Section 27	clean/treated water injection	currently not in use
NPV1 IL	Section 28	clean/treated water injection	currently in use
NPV2 IL	Section 28	clean/treated water injection	currently in use
NPV3 IL	Section 28	clean/treated water injection	currently in use
NPV4 IL	Section 28	clean/treated water injection	currently in use
NPV5 IL	Section 28	clean/treated water injection	currently in use
NPV6 IL	Section 28	clean/treated water injection	currently in use
NPV7 IL	Section 27	clean/treated water injection	currently in use
NPV8 IL	Section 27	clean/treated water injection	currently in use
NPV9 IL	Section 27	clean/treated water injection	currently not in use
NPV10 IL	Section 27	clean/treated water injection	currently not in use
NPV11 IL	Section 28	clean/treated water injection	currently not in use
NPV12 IL	Section 28	clean/treated water injection	currently not in use
NPV13 IL	Section 28	clean/treated water injection	currently not in use
NPV14 IL	Section 28	clean/treated water injection	currently not in use
NPV15 IL	Section 28	clean/treated water injection	currently not in use
NPV16 IL	Section 28	clean/treated water injection	currently not in use
NPV17 IL	Section 28	clean/treated water injection	currently not in use
NPV18 IL	Section 27	clean/treated water injection	currently not in use
Q1	Felice Acres	clean/treated water injection	currently not in use
Q2	Felice Acres	clean/treated water injection	currently not in use
Q3	Felice Acres	clean/treated water injection	currently not in use
Q4	Felice Acres	clean/treated water injection	currently not in use
Q5	Felice Acres	clean/treated water injection	currently not in use
Q6	Felice Acres	clean/treated water injection	currently not in use
Q7	Felice Acres	clean/treated water injection	currently not in use
Q8	Felice Acres	clean/treated water injection	currently not in use
Q9	Felice Acres	clean/treated water injection	currently not in use
Q10	Felice Acres	clean/treated water injection	currently not in use
Q11	Felice Acres	clean/treated water injection	currently not in use
Q12	Felice Acres	clean/treated water injection	currently not in use
Q13	Felice Acres	clean/treated water injection	currently not in use
Q14	Felice Acres	clean/treated water injection	currently not in use
Q15	Felice Acres	clean/treated water injection	currently not in use
Q16	Felice Acres	clean/treated water injection	currently not in use
Q17	Felice Acres	clean/treated water injection	currently not in use

Table 7-2 Off-Site Homestake Injection Well Inventory			
Well ID	**Location**	**Use**	**Comments/2009 Status**
Q18	Felice Acres	clean/treated water injection	currently not in use
Q19	Felice Acres	clean/treated water injection	currently not in use
Q20	Felice Acres	clean/treated water injection	currently not in use
Q21	Felice Acres	clean/treated water injection	currently not in use
U1	Section 34	clean/treated water injection	currently not in use
U2	Section 34	clean/treated water injection	currently not in use
U3	Section 34	clean/treated water injection	currently not in use
U4	Section 34	clean/treated water injection	currently not in use
U5	Section 34	clean/treated water injection	currently not in use
U6	Section 34	clean/treated water injection	currently not in use
U7	Section 34	clean/treated water injection	currently not in use
U8	Section 34	clean/treated water injection	currently not in use
U9	Section 34	clean/treated water injection	currently not in use
U10	Section 34	clean/treated water injection	currently not in use
U11	Section 34	clean/treated water injection	currently not in use
U12	Section 34	clean/treated water injection	currently not in use
U13	Section 34	clean/treated water injection	currently not in use
U14	Section 34	clean/treated water injection	currently not in use
R1	Section 3	clean/treated water injection	currently not in use
R2	Section 3	clean/treated water injection	currently not in use
R3	Section 3	clean/treated water injection	currently not in use
R4	Section 3	clean/treated water injection	currently not in use
R5	Section 3	clean/treated water injection	currently not in use
R6	Section 3	clean/treated water injection	currently not in use
R7	Section 3	clean/treated water injection	currently not in use
R8	Section 3	clean/treated water injection	currently not in use
R9	Section 3	clean/treated water injection	currently not in use
R10	Section 3	clean/treated water injection	currently not in use
R11	Section 3	clean/treated water injection	currently not in use
R12	Section 3	clean/treated water injection	currently not in use
R13	Section 3	clean/treated water injection	currently not in use
R14	Section 3	clean/treated water injection	currently not in use
R15	Section 3	clean/treated water injection	currently not in use
R16	Section 3	clean/treated water injection	currently not in use
R17	Section 3	clean/treated water injection	currently not in use
R18	Section 3	clean/treated water injection	currently not in use
R19	Section 3	clean/treated water injection	currently not in use
R20	Section 3	clean/treated water injection	currently not in use
R21	Section 3	clean/treated water injection	currently not in use
R22	Section 3	clean/treated water injection	currently not in use
R23	Section 3	clean/treated water injection	currently not in use
R24	Section 3	clean/treated water injection	currently not in use
R25	Section 3	clean/treated water injection	currently not in use
R26	Section 3	clean/treated water injection	currently not in use
R27	Section 3	clean/treated water injection	currently not in use
R28	Section 3	clean/treated water injection	currently not in use
R29	Section 3	clean/treated water injection	currently not in use
R30	Section 3	clean/treated water injection	currently not in use
R31	Section 3	clean/treated water injection	currently not in use

Table 7-2
Off-Site Homestake Injection Well Inventory

Well ID	Location	Use	Comments/2009 Status
R32	Section 3	clean/treated water injection	currently not in use
R33	Section 3	clean/treated water injection	currently not in use
R34	Section 3	clean/treated water injection	currently not in use
R35	Section 3	clean/treated water injection	currently not in use
R36	Section 3	clean/treated water injection	currently not in use
R37	Section 3	clean/treated water injection	currently not in use
R38	Section 3	clean/treated water injection	currently not in use
R39	Section 3	clean/treated water injection	currently not in use
R40	Section 3	clean/treated water injection	currently not in use
R41	Section 3	clean/treated water injection	currently not in use
R42	Section 3	clean/treated water injection	currently not in use
R43	Section 3	clean/treated water injection	currently not in use
R44	Section 3	clean/treated water injection	currently not in use
R45	Section 3	clean/treated water injection	currently not in use
R46	Section 3	clean/treated water injection	currently not in use
R47	Section 3	clean/treated water injection	currently not in use
R48	Section 3	clean/treated water injection	currently not in use
R49	Section 3	clean/treated water injection	currently not in use
R50	Section 3	clean/treated water injection	currently not in use
R51	Section 3	clean/treated water injection	currently not in use
RCR1 IL	Section 3	clean/treated water injection	currently in use
RCR2 IL	Section 3	clean/treated water injection	currently in use
RCR3 IL	Section 3	clean/treated water injection	currently in use
RCR4 IL	Section 3	clean/treated water injection	currently in use
RCR5 IL	Section 3	clean/treated water injection	currently in use
RCR6 IL	Section 3	clean/treated water injection	currently in use
RCR7 IL	Section 3	clean/treated water injection	currently in use
RCR8 IL	Section 3	clean/treated water injection	currently not in use
RCR9 IL	Section 3	clean/treated water injection	currently not in use
RCR10 IL	Section 3	clean/treated water injection	currently not in use
RCR11 IL	Section 3	clean/treated water injection	currently not in use
RCR12 IL	Section 3	clean/treated water injection	currently not in use
RCR13 IL	Section 3	clean/treated water injection	currently not in use
RCR14 IL	Section 3	clean/treated water injection	currently not in use
RCR15 IL	Section 3	clean/treated water injection	currently not in use
RCR16 IL	Section 3	clean/treated water injection	currently not in use
RCR17 IL	Section 3	clean/treated water injection	currently not in use
SFA1 IL	Felice Acres	clean/treated water injection	currently in use
SFA2 IL	Felice Acres	clean/treated water injection	currently in use
SFA3 IL	Felice Acres	clean/treated water injection	currently not in use
SFA4 IL	Felice Acres	clean/treated water injection	currently not in use
SFA5 IL	Felice Acres	clean/treated water injection	currently not in use
SPV1 IL	Section 34	clean/treated water injection	currently not in use
SPV2 IL	Section 34	clean/treated water injection	currently not in use
SPV3 IL	Section 34	clean/treated water injection	currently not in use
SPV4 IL	Section 34	clean/treated water injection	currently not in use
WFA1 IL	Section 34	clean/treated water injection	currently in use

8.0 GROUND-WATER MONITORING

Ground-water monitoring for the Off-site DP is outlined in Table 8-1. Water level and water quality monitoring is routinely done for the Off-site DP. Water levels will be monitored for wells with the B, G and H list of parameters. Water levels are also monitored in San Andres wells 907 and 938.

8.1 WATER LEVEL MONITORING

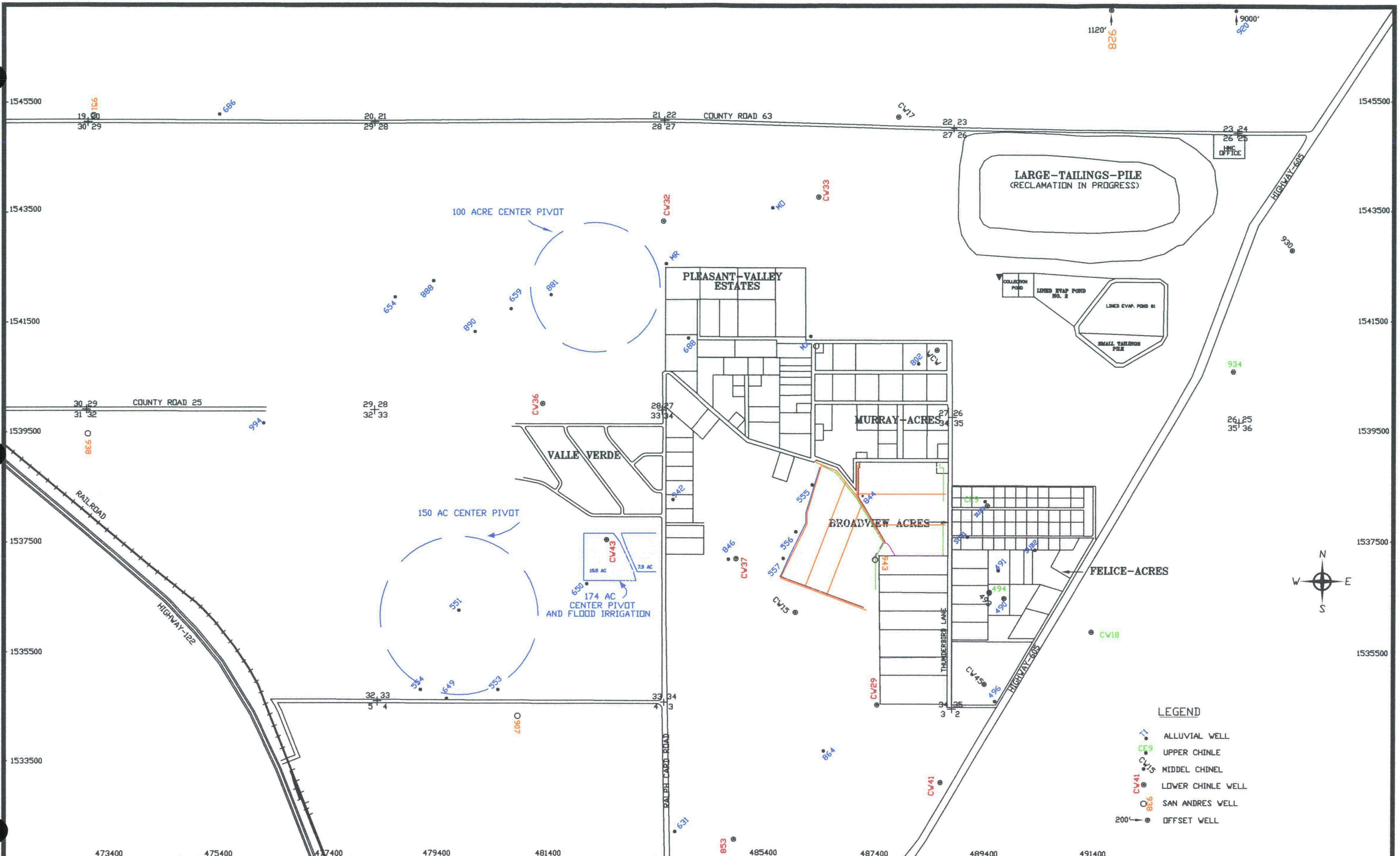
Wells that are used for monitoring water levels in the alluvial, Upper Chinle, Middle Chinle, Lower Chinle and San Andres aquifers are shown on Figures 2-4, 3-8, 4-4, 5-4 and 6-4. This monitoring will continue to evaluate the water level changes in the different aquifers due to water usage and reinjection. Semi-annual water level monitoring is planned. Two of the San Andres wells, 907 and 938, are used for irrigation supply by other operators. These two wells are proposed to be monitored for water level prior to and after the irrigation season. This water level monitoring should be effective in defining the effects of water usage on the water levels in the different aquifers. Water level graphs will be included in the Homestake annual monitoring report to present the changes in the water levels in the different aquifers.

8.2 GROUND-WATER QUALITY MONITORING

The ground-water quality monitoring is outlined in Table 8-1. Numerous additional samples are routinely taken by HMC beyond that outlined in the table. The compliance wells for site monitoring are alluvial wells 553, 554, 649 and 650 for the Section 33 area. Compliance monitoring for the Section 34 area are alluvial wells 555, 556 and 557 while compliance monitoring for Section 28 is 659, 890, 888 and 654. These wells will be sampled annually for the BF list and semi-annually for the H list. Alluvial monitoring is listed below the compliance monitoring wells in Table 8-1. Alluvial wells SUB1, SUB2 and SUB3 are monitored in Broadview Acres while alluvial wells 490, 491 and 496 are monitored in Felice Acres. Monitoring wells in Murray Acres for the alluvial aquifer are wells 802 and 844. Alluvial wells 688 and 846 are monitored in Pleasant Valley. Regional alluvial monitoring wells include Wells 551, 631, 686, 864, 881, 920, 942, MO, MR and MX. Figure 8-1 shows the location of these monitoring wells. The collection volumes and injection volumes are monitored monthly along with water quality monitoring.

Water quality is monitored in the Chinle aquifers at several locations. Upper Chinle Wells CE9, 494, 934, and CW18 will be monitored. Middle Chinle Wells 493, 930, CW15, CW17, CW45 and WCW will be monitored for this aquifer. Lower Chinle monitoring wells are 853, CW29, CW32, CW33, CW36, CW37, CW41 and CW43. The San Andres aquifer will be monitored in Wells 907, 928, 938, 943 and 951.

Additional monitoring will be completed for the discharges from the zeolite water treatment locations. *Insitu* treatment for Bio, phosphate and reductant will also be monitored at selected wells in each of the treatment areas.



SCALE: 1"=1600'	FIGURE 8-1. OFF-SITE GROUND-WATER MONITORING LOCATIONS	HOMESTAKE MILL & ADJACENT PROPERTIES
C:\PROJECTS\2009-06 GRDWTR MON		GRANTS, NM T11&12, R10W
DATE: 2/5/10		PAGE: 8-3

TABLE 8-1. PERMIT GROUND WATER MONITORING PROGRAM

WELL	PARAMETERS TO BE MONITORED	FREQUENCY OF MONITORING
COMPLIANCE WELLS		
Compliance wells SECTION 33: 553, 554, 649, 650 SECTION 34: 555, 556, 557 SECTION 28: 659, 890, 888, 654	B, F H	Annually Semi-Annually
MONITORING WELLS		
ALLUVIAL WELLS		
Broadview Acres wells SUB1, SUB2, SUB3	B, F G	Annually Semi-Annually
Felice Acres wells 490, 491, 496	G	Semi-Annually
Murray Acres wells 802, 844	G	Semi-Annually
Pleasant Valley wells 688, 846	G	Semi-Annually
Regional wells 551, 631, 686, 864, 881, 920, 942, 994, MO, MR, MX	G	Semi-Annually
Collection Volumes	Total volume	Monthly
Injection Volumes	Total volume	Monthly
CHINLE WELLS		
Broadview Acres well CE9	G	Semi-Annually
Felice Acres wells 493, 494, CW45	G	Semi-Annually
Regional wells 853, 930, 934, CW15, CW17, CW18, CW29, CW32, CW33, CW36, CW37, CW41, CW43, WCW	G	Semi-Annually
SAN ANDRES WELLS		
928, #938, #907, 943, 951	D G	Annually Semi-Annually
ALTERNATIVE TREATMENT		
Zeolite Discharge	H	Monthly
Insitu Bio Treatment	H plus, HCO3 and Fe	Monthly
Phosphate	H plus, PO4 and Total P	Monthly
Reductant	H plus, Fe	Monthly

= *only water level*

*Parameters

B: Water level, pH, TDS, SO_4, Cl, HCO_3, CO_3, Na, Ca, Mg, K, NO_3, U, Se, Mo, Ra-226

D: pH, TDS, Ca, Mg, K, Na, SO_4, Cl, HCO_3, CO_3, NO_3 as N, Se, Mo, Al, As, Ba, Cd, Cu, CN, F, Fe, Pb, Mn, Hg, Ni, Ag, Zn, U, Ra-226

F: V, Ra-228, Th-230

G: Water level, TDS, SO_4, U, Se, Mo

H: Water level, TDS, SO_4, U, Se, Mo, Cl

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