SECTION 7

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GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES

SECTION 7

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GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

FIGURES
(continued)

7.0 LOWER CHINLE AQUIFER MONITORING

7.1 LOWER CHINLE WELL COMPLETION

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

Wells that are completed in the Lower Chinle aquifer are shown on Figure 7.1-1. Chinle shale exists above the top of the Lower Chinle aquifer in the area with the dot pattern. This figure also shows the location of the Lower Chinle aquifer subcrop underlying the alluvium. The cyan horizontal hatched pattern shows where the alluvium is saturated in the subcrop area, while the plus-sign pattern shows where the alluvium is not saturated in the subcrop area. Six new Lower Chinle wells (R47, R48, R57, R58, R68 and R69) were drilled in 2013 in the central portion of Section 3 in the sub crop area. Only Lower Chinle well CW29 was used for south collection in 2013.

WEST FAULT

EAST FAULT

COUNTY ROAD 63

COUNTY ROAD 25

HIGHWAY-505

RAILROAD

HIGHWAY-122

LARGE-TAILINGS-PILE
(RECLAMATION IN PROGRESS)

HMC OFFICE

COLLECTION POND

LINED EVAP POND NO. 2

LINED EVAP. POND #4

SMALL TAILINGS PILE

PLEASANT-VALLEY ESTATES

MURRAY-ACRES

VALLE VERDE

BROADVIEW ACRES

FELICE-ACRES

THUNDERBIRD LANE

RALPH CAPPS ROAD

CV31 CV32 CV33 CV36 CV37 CV38 CV39 CV41 CV42 CV43

536R 837 900 530 832 988 990 908 954 539 961 962 653 538 R47 R48 R57 R58 R68 R69 853 903

1545500 1543500 1541500 1539500 1537500 1535500 1533500

473400 475400 477400 479400 481400 485400 487400 489400 491400

1520'

N W E S

NOTE: AQUIFER NOT CONTINUOUS IN SOME AREAS

--LEGEND--

- CV41 — LOWER CHINLE WELLS
- CV23 — LOWER CHINLE OFF-SITE COLLECTION
- 1520' — OFFSET WELL

LOWER CHINLE

SUBCROP OF LOWER CHINLE ALLUVIUM OVERLIES SANDSTONE

UNSATURATED ALLUVIUM SATURATED ALLUVIUM

SCALE: 1" = 1000'

C:\PROJECTS\2014-06\1600LOW bmw

DATE: 2/15/13

FIGURE 7.1-1. LIMITS OF LOWER CHINLE AQUIFER AND WELL LOCATIONS, 2013

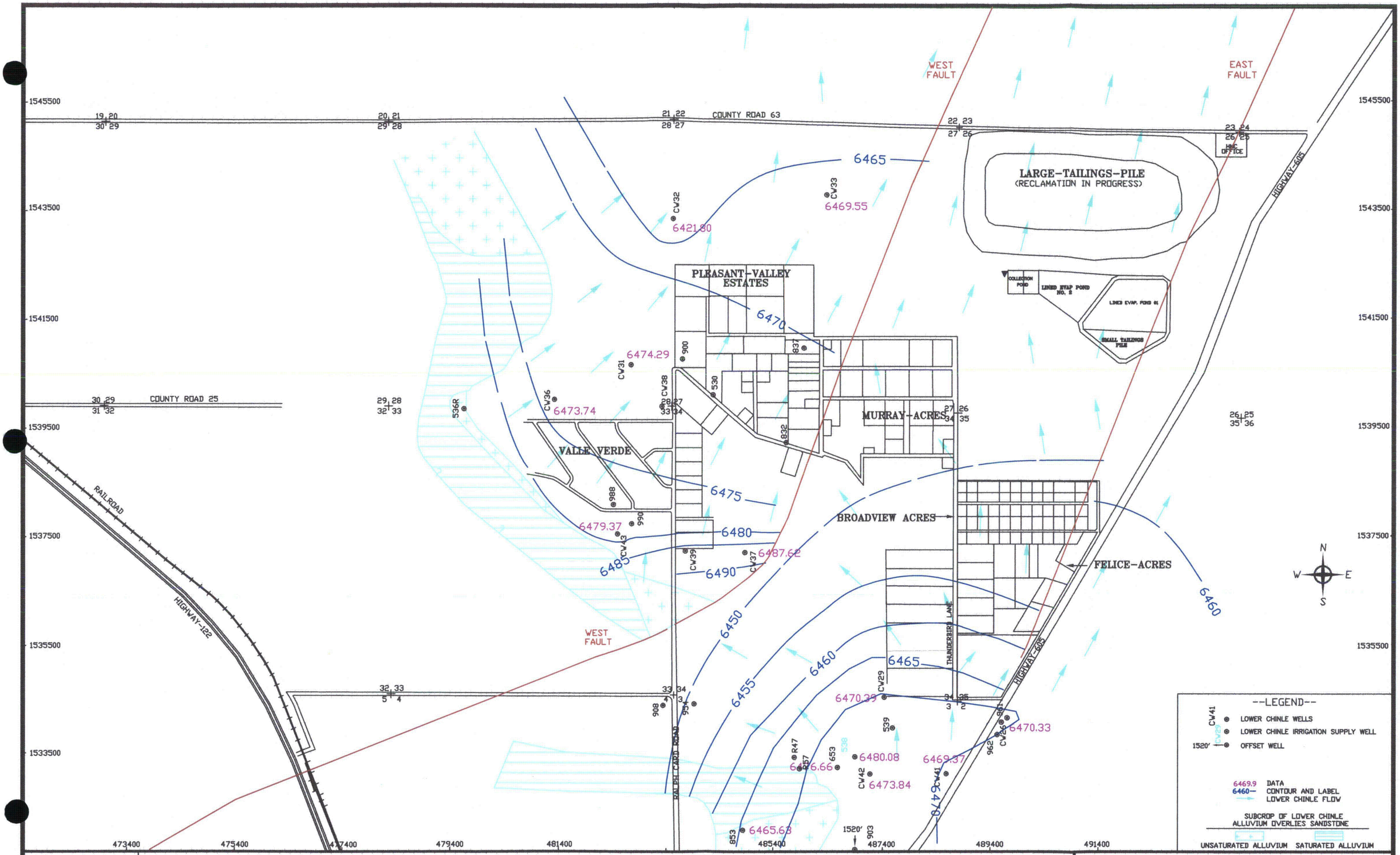
7.2 LOWER CHINLE WATER LEVELS

Water-level elevations in the Lower Chinle wells are presented along with the data for the Upper and Middle Chinle wells in Appendix A. Figure 7.2-1 presents water-level elevations in the Lower Chinle wells and the fall of 2012 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 2012 were similar to the 2011 values in Section 3 due to pumping on well 538 for the purpose of providing irrigation supply.

The Lower Chinle wells for which water-level time plots were prepared are shown on Figure 7.2-2. Water levels are presented for Lower Chinle wells 653, 853, CW26, CW29, CW41 and CW42 on Figure 7.2-3. Water levels in each of these Lower Chinle wells rose in 2012 except the water level in well CW41 which shows a decline. Water levels gradually decreased in Lower Chinle well CW29 prior to its use as a fresh-water injection supply well in 2003 and irrigation supply in 2004 through 2010. Small overall water-level decreases had been observed over the last few years in Lower Chinle wells 653, 853, CW26 and CW42 but the 2010 through 2012 water levels very gradually rose.

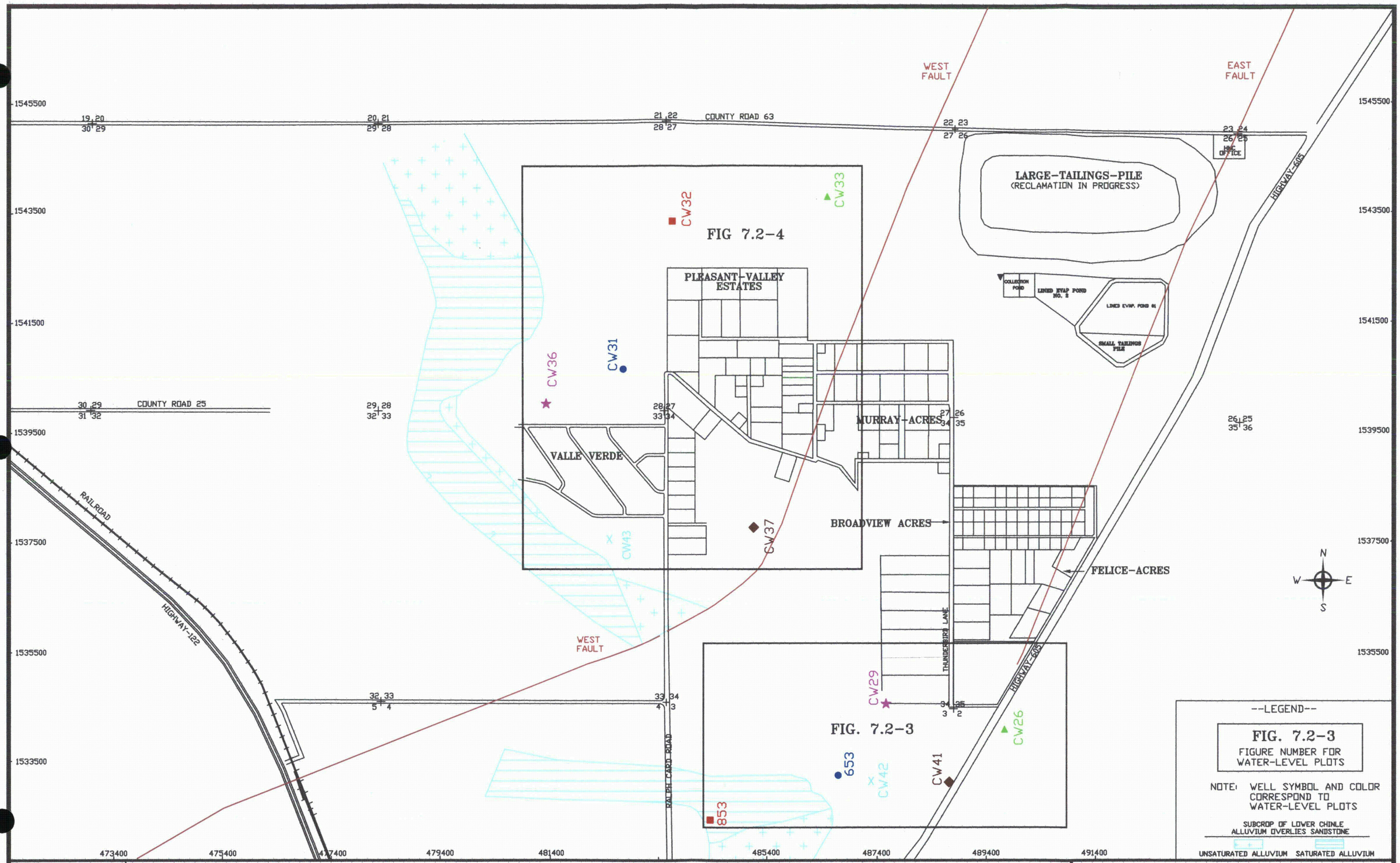
Figure 7.2-4 presents water-level elevations versus time for Lower Chinle wells CW31, CW32, CW33, CW36, CW37 and CW43 (see Figure 7.2-2 for location of these wells). Water levels had gradually declined over the last few years in wells CW31 and CW36 but gradually rose in 2010 through 2012. Water levels in wells CW37 and CW43 near the subcrop area were steady in 2012. Water levels in 2012 have been fairly steady in well CW33. Water levels have decreased in Lower Chinle well CW32 for several years, and this trend continued in 2012 at a very gradual decline. The rate and magnitude of decrease in this Lower Chinle well is similar to that observed in the alluvial and San Andres aquifers to the west in Sections 29, 32 and 33. These declines are different than the steady alluvial water levels near well CW33. This

indicates that the Lower Chinle aquifer near well CW32 is hydrologically connected to the alluvial aquifer west of this area but is isolated from the alluvial aquifer in its immediate area.



SCALE: 1" = 1000'
C:\PROJECTS\2014-06\1600LOW bmw
DATE: 2/15/13

FIGURE 7.2-1 WATER LEVEL ELEVATIONS OF THE LOWER CHINLE AQUIFER, 2013, FT-MSL



SCALE: 1" = 1000'

C:\PROJECTS\2014-06\1600LOW bmw

DATE: 2/15/13

FIGURE 7.2-2. LOCATION OF LOWER CHINLE WELLS WITH WATER-LEVEL PLOTS, 2013

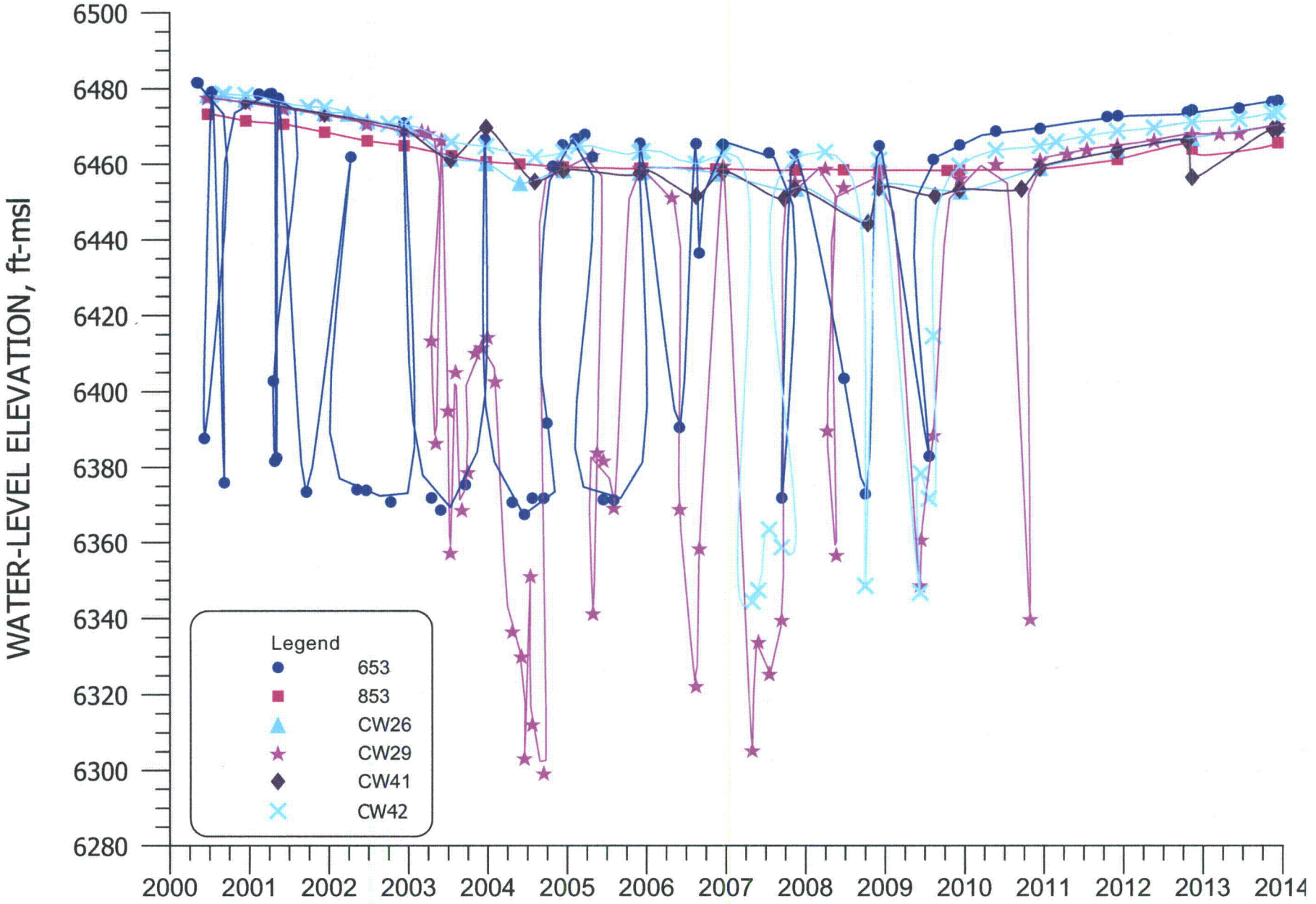


FIGURE 7.2-3. WATER-LEVEL ELEVATION FOR WELLS 653, 853, CW26, CW29, CW41, AND CW42.

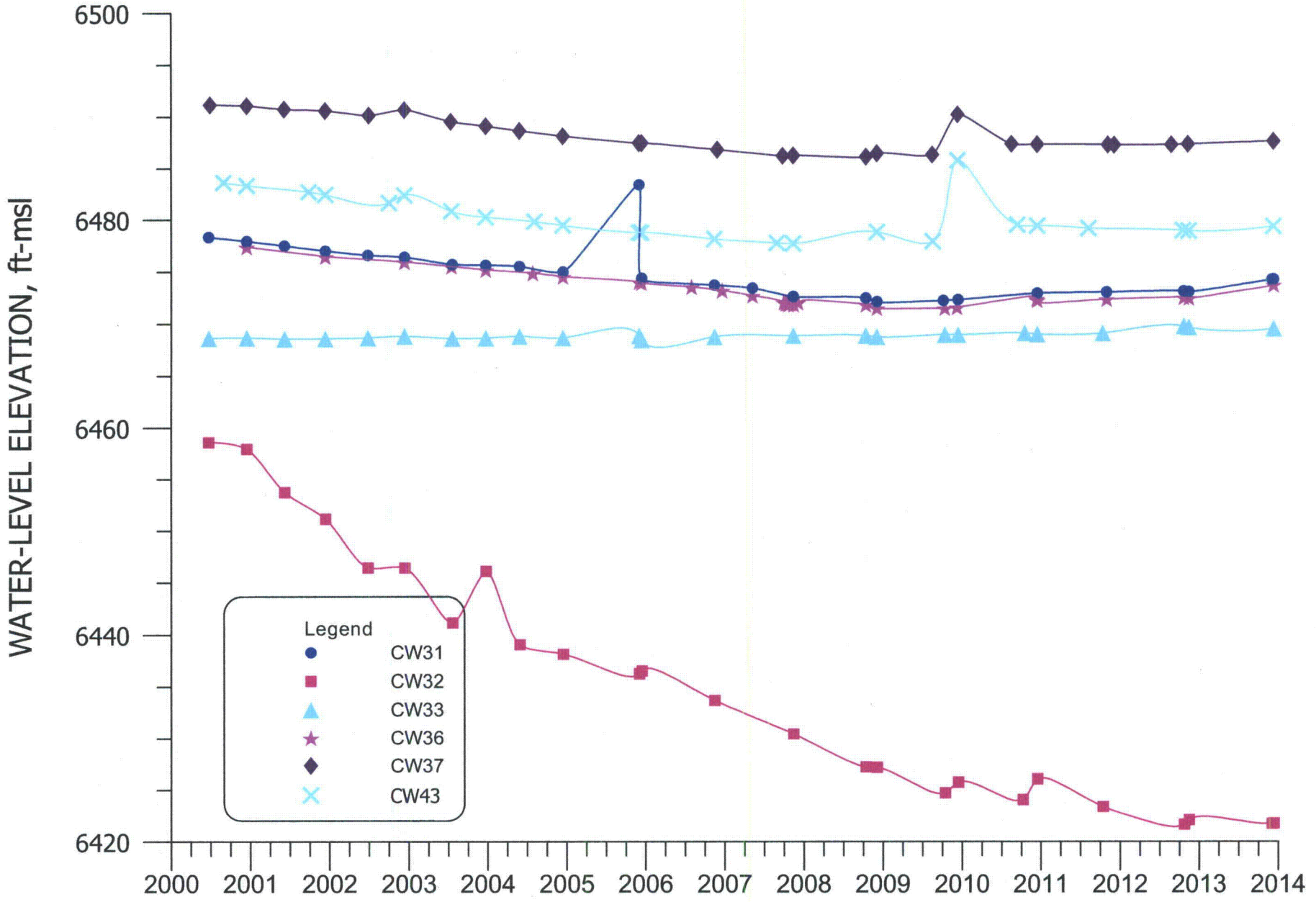


FIGURE 7.2-4. WATER-LEVEL ELEVATION FOR WELLS CW31, CW32, CW33, CW36, CW37, AND CW43.

7.3 LOWER CHINLE WATER QUALITY

Water-quality data for 2013 for the Lower Chinle aquifer are presented in Tables B.5-1 and B.5-2 of Appendix B along with water-quality data for the other Chinle aquifer wells. The basic well data presented in Tables 5.1-1 through 5.1-4, and the orientation of the well name on Figure 5.1-1 indicate which of the Chinle wells are completed in the Lower Chinle.

Constituent concentrations in the Lower Chinle aquifer exceed background conditions only in Section 3, except for some natural exceedances in the far down-gradient wells. Sulfate concentrations in the Lower Chinle aquifer are within the NRC standards except in far down-gradient where concentrations exceed the relevant non-mixing background value. Uranium concentrations exceed the NRC site standards only in the northeastern and central portions of Section 3. Molybdenum concentrations in the Lower Chinle aquifer are all less than the limit of detection.

7.3.1 SULFATE – LOWER CHINLE

Figure 7.3-1 presents contours of sulfate concentrations in the Lower Chinle aquifer during 2013. Lower Chinle standards based on background data are presented for sulfate in the legend of Figure 7.3-1. The Lower Chinle concentrations varied from 299 to 1410 mg/l. None of the Lower Chinle concentrations in the mixing zone (see Section 3 and Figure 3.3-3 for zone areas) exceeded the mixing-zone sulfate site standard of 1750 mg/l. Therefore, the Lower Chinle aquifer does not require any restoration with respect to sulfate.

The locations of wells used in the plots of water quality for the Lower Chinle are presented on Figure 7.3-2. Figure 7.3-2 shows that data for mixing zone Lower Chinle wells 538, 653, CW42 and CW43 are grouped together on the water-quality time plots, and data for non-mixing zone wells CW29, CW31, CW32, and CW41 are presented on a second plot.

Figure 7.3-3 presents sulfate concentrations plotted versus time for the Lower Chinle mixing-zone wells. The sulfate concentrations in water collected from each of these wells are less than the mixing-zone site standard, showing that sulfate restoration of the Lower Chinle is not needed in the southern portion of the aquifer. Sulfate concentrations in well CW43 have increased to a level slightly larger than other Lower Chinle wells in the area.

Sulfate concentrations plotted for Lower Chinle wells CW29, CW31, CW32, and CW41 are presented on Figure 7.3-4 (see Figure 7.3-2 for location of these wells). Sulfate concentrations were fairly steady in 2013 in these Lower Chinle wells. The data collected since mid-2003 was not available when the background level was calculated.

7.3.2 TOTAL DISSOLVED SOLIDS – LOWER CHINLE

Figure 7.3-5 presents the total dissolved solids (TDS) concentrations in the Lower Chinle aquifer during 2013. All concentrations for 2013 sampled wells are less than the non-mixing zone site standard value of 4140 mg/l. Concentrations are thought to naturally exceed this level farther down-gradient as shown by the cyan pattern. The TDS concentration naturally increases down-gradient due to the low permeability and correspondingly slow movement of water through this shale aquifer.

Figure 7.3-6 presents TDS concentrations for Upper Chinle wells 538, 653, CW42 and CW43. TDS concentrations in these wells have been fairly steady in 2013 except the increase observed in well CW43. The TDS in well CW43 has increased to a level that is above the remainder of the Lower Chinle aquifer wells in this area. TDS concentrations increase in well CW43 started prior to the Section 33 Flood irrigation which was initially done in 2004. All of these concentrations are below the mixing-zone site standard of 3140 mg/l.

TDS concentrations for wells CW29, CW31, CW32, and CW41 are presented on Figure 7.3-7. This figure demonstrates that, overall, TDS concentrations have remained fairly stable during 2013. Additionally, these historical TDS concentrations are well within the range of natural fluctuation in the non-mixing zone of the Lower Chinle aquifer, except for the value from well CW32 being near the top of the natural observed concentrations.

7.3.3 CHLORIDE – LOWER CHINLE

Chloride concentration data in the Lower Chinle aquifer were updated during 2003 to confirm that restoration for this constituent is not necessary in the Lower Chinle aquifer. The chloride concentrations measured during 2013 continue to support this conclusion and are all less than the NRC standard.

7.3.4 URANIUM – LOWER CHINLE

Uranium concentration in the Lower Chinle aquifer is an important constituent with respect to aquifer restoration in Section 3. Figure 7.3-8 presents the uranium concentrations in the Lower Chinle aquifer for 2013. Only three of the uranium concentrations in the Lower Chinle exceeded the mixing-zone background concentration, and one exceeded the non-mixing zone background concentration. The highest values are in the northeast portion of Section 3 in water from collection wells 653, CW29, CW42 and R57. These concentrations should gradually decrease to less than background concentrations with the restoration program planned for the Lower Chinle aquifer.

Uranium concentrations plotted versus time for Lower Chinle wells 538, 653, CW42 and CW43 are presented on Figure 7.3-9. The overall decline in uranium concentration in well 653 is due to pumping of Lower Chinle wells for the irrigation system. The uranium concentration in well CW42 was declining until 2007 and has overall been fairly steady the last six years. Additional results with time will be needed to show when the restoration of this area is adequate. Uranium concentrations in well CW43 have remained low except for the higher early 2013 value which is thought to be an outlier.

The uranium concentrations in all of the Lower Chinle wells with data presented on Figure 7.3-10 have remained at low levels with steady and higher values in well CW29 for the last six years.

7.3.5 SELENIUM – LOWER CHINLE

Selenium concentrations in the Lower Chinle aquifer for 2013 are presented on Figure 7.3-11. None of the selenium concentrations in water from the Lower Chinle wells exceeded the site standards. The mixing and non-mixing zone site standards are 0.14 and 0.32 mg/l, respectively, for the Lower Chinle aquifer.

Figure 7.3-12 presents selenium concentration versus time plots for wells 538, 653, CW42 and CW43. The selenium concentrations in these Lower Chinle aquifer wells were steady in 2013.

Figure 7.3-13 presents selenium concentrations plotted versus time for Lower Chinle wells CW29, CW32 and CW41. Selenium concentrations measured during 2013 were consistent with the 2012 levels for each of these wells.

7.3.6 MOLYBDENUM – LOWER CHINLE

Molybdenum concentrations in water samples collected from the Lower Chinle wells in 2013 were all low at levels near the detection limit and, therefore, no areal molybdenum concentration figures or time plots were prepared. The 2013 results are consistent with historical measurements of molybdenum in the Lower Chinle aquifer. Molybdenum is not a constituent of concern in the Lower Chinle aquifer.

7.3.7 NITRATE – LOWER CHINLE

Nitrate monitoring of the Lower Chinle aquifer was updated in 2003 to confirm that concentrations remain significantly below the site standard of 15 mg/l for the mixing zone. Nitrate concentrations measured in 2013 are presented in Figure 7.3-14 and are all significantly below the site standard.

Plots of nitrate concentrations versus time were not prepared, because historically, values measured in Lower Chinle wells contained very low concentrations, similar to those measured in 2013. Nitrate concentrations from the tailings seepage are not expected to be significant in the future and therefore the potential in the Lower Chinle aquifer does not exist due to the very limited extent of elevated concentrations in the alluvial aquifer. Establishment of a site standard for nitrate in the Lower Chinle non-mixing zone therefore has not been set.

7.3.8 RADIUM-226 AND RADIUM-228 – LOWER CHINLE

All radium concentrations have been low in past years in the Lower Chinle aquifer. Radium-226 and radium-228 are not important parameters relative to the Lower Chinle aquifer; therefore a site standard for the Lower Chinle has not been set. Radium concentrations were analyzed in all Lower Chinle wells in the 2003 update. These low levels of radium do not warrant the development of a figure presenting areal distribution of radium. Radium-228 analysis is typically more erratic than other constituents but the available data shows that radium-

226 and radium-228 are not significant constituents in the Lower Chinle aquifer at the Homestake site.

7.3.9 VANADIUM - LOWER CHINLE

Vanadium concentrations have always been low in the Lower Chinle aquifer. Significant concentrations in the Lower Chinle aquifer would not be expected because concentrations of this constituent have only been slightly elevated in the alluvial aquifer near the tailings. Vanadium concentrations in the Lower Chinle aquifer have never been large enough to support consideration of this constituent for setting a site standard. The vanadium concentration data was updated in 2003 for the Lower Chinle aquifer.

7.3.10 THORIUM-230 – LOWER CHINLE

Thorium-230 concentrations have never been significant in the Lower Chinle aquifer and, therefore, should be dropped from the Lower Chinle monitoring list and eliminated from consideration as a Lower Chinle standard. The thorium-230 concentrations measured in the Lower Chinle aquifer during 2003 were all very small. No plots of thorium-230 concentrations with time were prepared, because concentrations have historically been low.

WEST FAULT

EAST FAULT

2000

2000

1000

1000

1000

COUNTY ROAD 63

COUNTY ROAD 25

LARGE-TAILINGS-PILE
(RECLAMATION IN PROGRESS)

MINE OFFICE

COLLECTION POND

LINED EVAP POND NO. 2

LINED EVAP. POND #1

SMALL TAILINGS PILE

HIGHWAY-605

PLEASANT-VALLEY ESTATES

MURRAY-ACRES

VALLE VERDE

BROADVIEW ACRES

FELICE-ACRES

THUNDERBIRD LANE

RALPH CARD ROAD

RAILROAD

HIGHWAY-122

1410

863

1160

722

718

728

710

744

701

299

1520'

1520'

1545500

1543500

1541500

1539500

1537500

1535500

1533500

473400

475400

477400

479400

481400

485400

487400

489400

491400

N

W

E

S

--LEGEND--

CW41 — LOWER CHINLE WELLS

CW29 — LOWER CHINLE OFF-SITE COLLECTION

1520' — OFFSET WELL

1000 — 700 DATA CONTOUR AND LABEL

SITE STANDARD

MIXING ZONE >1750 mg/l

NON-MIXING ZONE >2000 mg/l

SUBCROP OF LOWER CHINLE ALLUVIUM OVERLIES SANDSTONE

UNSATURATED ALLUVIUM SATURATED ALLUVIUM

SCALE: 1" = 1000'

C:\PROJECTS\2014-06\1600LOW bmw

DATE: 2/15/13

FIGURE 7.3-1 SULFATE CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2013, mg/l

WEST FAULT

EAST FAULT

1545500

19,20 / 30,29 — 20,21 / 29,28 — 21,22 / 28,27 — COUNTY ROAD 63 — 22,23 / 27,26 — 23,24 / 26,25

HMC OFFICE

LARGE-TAILINGS-PILE
(RECLAMATION IN PROGRESS)

HIGHWAY-60S

1543500

CW32

FIG 7.3-4

PLEASANT-VALLEY ESTATES

COLLECTION POND

LINED EVAP POND NO. 2

LINED EVAP. POND 01

SMALL TAILINGS PILE

1541500

CW31

30,29 / 31,32 — COUNTY ROAD 25 — 29,28 / 32,33 — 28,27 / 33,34 — 27,26 / 34,35 — 26,25 / 35,36

MURRAY-ACRES

1539500

VALLE VERDE

RAILROAD

HIGHWAY-122

1537500

CW43

BROADVIEW ACRES

FELICE-ACRES

THUNDERBIRD LANE

HIGHWAY-60S

WEST FAULT

1535500

FIG. 7.3-3

32,33 / 5,4 — 33,34 / 4,3 — 34,35 / 3,2

CW29

CALIENTE ROAD

653

538

CW42

CW41

1533500

473400 — 475400 — 477400 — 479400 — 481400 — 485400 — 487400 — 489400 — 491400

N
W E
S

--LEGEND--

FIG. 7.3-3
FIGURE NUMBER FOR WATER-QUALITY PLOTS

NOTE: WELL SYMBOL AND COLOR CORRESPOND TO WATER-QUALITY PLOTS

SUBCROP OF LOWER CHINLE ALLUVIUM OVERLIES SANDSTONE

UNSATURATED ALLUVIUM SATURATED ALLUVIUM

SCALE: 1" = 1000'
C:\PROJECTS\2014-06\1600LOW bmw
DATE: 2/15/13

FIGURE 7.3-2. LOCATION OF LOWER CHINLE WELLS WITH WATER-QUALITY PLOTS, 2013

WEST FAULT

EAST FAULT

COUNTY ROAD 63

COUNTY ROAD 25

LARGE-TAILINGS-PILE
(RECLAMATION IN PROGRESS)

COLLECTION POND

LINED EVAP POND NO. 2

LINED EVAP. POND 4

SMALL TAILINGS PILE

MILL OFFICE

HIGHWAY-605

PLEASANT-VALLEY ESTATES

MURRAY-ACRES

VALLE VERDE

BROADVIEW ACRES

FELICE-ACRES

THUNDERBIRD LANE

RALPH CARD ROAD

RAILROAD

HIGHWAY-122

WEST FAULT

4000

3000

2000

3280

1620

2340

1630

1750

1730

1740

1760

1520'

898

934

1545500

1543500

1541500

1539500

1537500

1535500

1533500

473400

475400

477400

479400

481400

485400

487400

489400

491400

N

W

E

S

--LEGEND--

- CV41 ● LOWER CHINLE WELLS
- CV26 ● LOWER CHINLE OFF-SITE COLLECTION
- 1520' ●— OFFSET WELL
- 1580 DATA
- 3000 — CONTOUR AND LABEL
- SITE STANDARD
- MIXING ZONE >3140 mg/l
- NON-MIXING ZONE >4140 mg/l
- SUBCROP OF LOWER CHINLE ALLUVIUM OVERLIES SANDSTONE
- UNSATURATED ALLUVIUM
- SATURATED ALLUVIUM

SCALE: 1" = 1000'

C:\PROJECTS\2014-06\1600LOW bmw

DATE: 2/15/13

FIGURE 7.3-5. TDS CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2013, mg/l

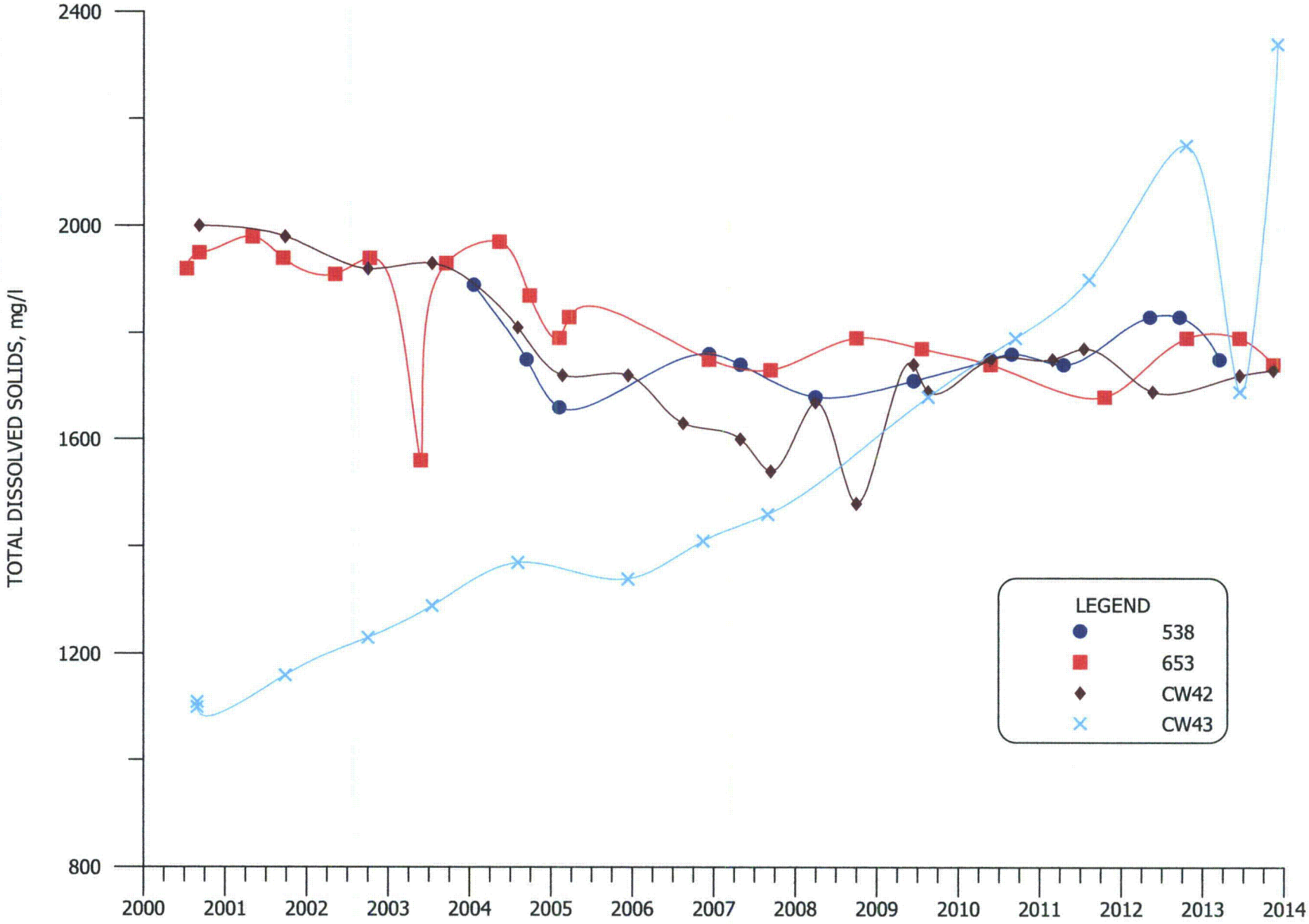


FIGURE 7.3-6. TDS CONCENTRATIONS FOR MIXING ZONE WELLS 538, 653, CW42 AND CW43

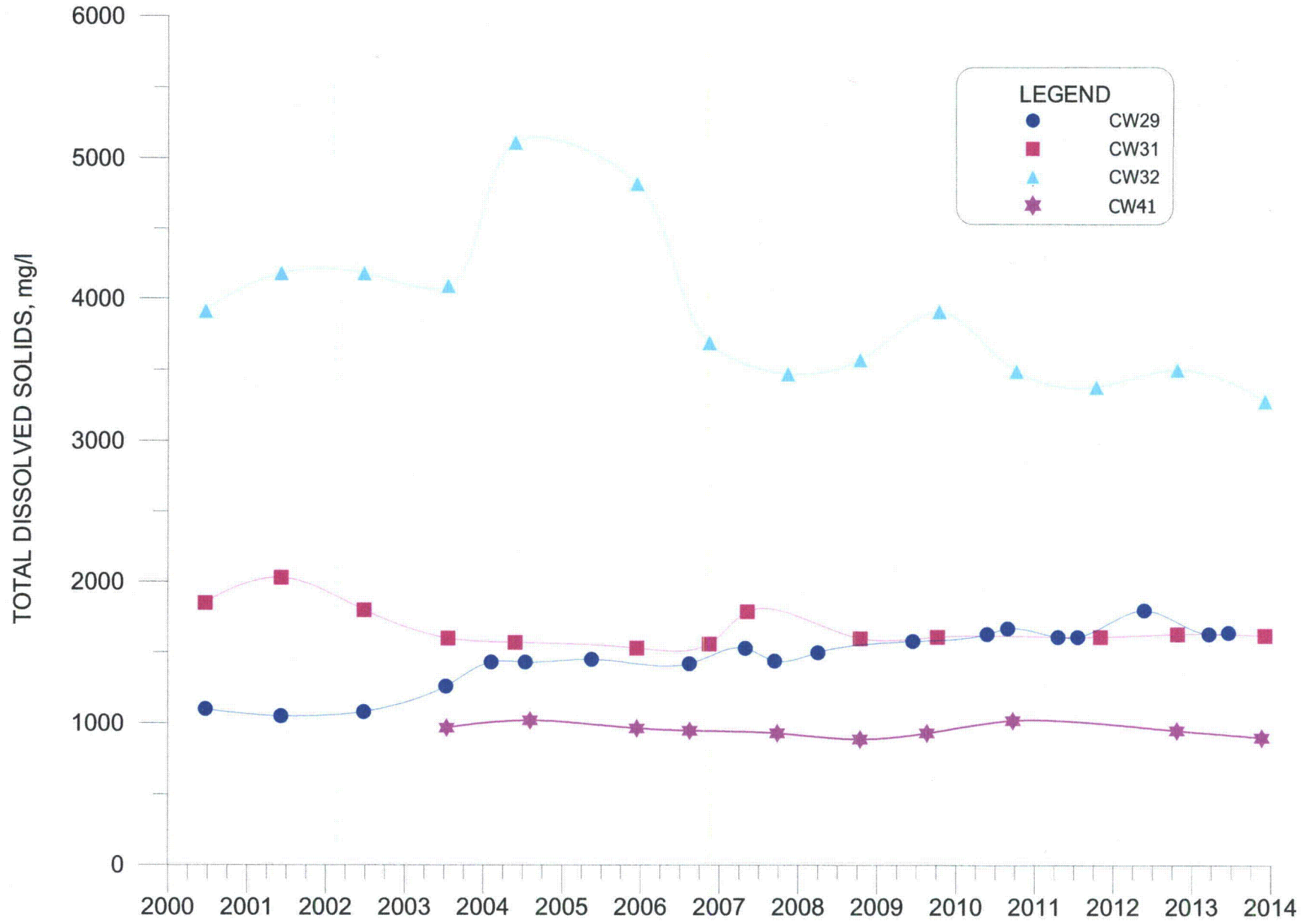


FIGURE 7.3-7. TDS CONCENTRATIONS FOR NON-MIXING ZONE WELLS CW29, CW31, CW32 AND CW41.

WEST FAULT

EAST FAULT

COUNTY ROAD 63

COUNTY ROAD 25

LARGE-TAILINGS-PILE
(RECLAMATION IN PROGRESS)

HMC OFFICE

COLLECTION POND

LINED EVAP POND NO. 2

LINED EVAP. POND 01

SMALL TAILINGS PILE

HIGHWAY-605

PLEASANT-VALLEY ESTATES

MURRAY-ACRES

VALLE VERDE

BROADVIEW ACRES

FELICE-ACRES

THUNDERBIRD LANE

RALPH CARD ROAD

RAILROAD

HIGHWAY-122

CV32 0.002

CV33

CV31 0.016

CV36

CV38

CV39

CV37

CV43 0.04

CV42 0.28

CV41 0.03

CV26

CV28

CV29

0.22

0.17

0.1

0.05

0.32

0.08

536R

900

837

530

832

968

990

908

954

853

903

538

539

653

R47

R48

R57

R58

R66

R67

R69

962

961

1545500

1543500

1541500

1539500

1537500

1535500

1533500

1520'

473400

475400

477400

479400

481400

485400

487400

489400

491400

N

W

E

S

--LEGEND--

CV41 LOWER CHINLE WELLS

CV28 LOWER CHINLE OFF-SITE COLLECTION

1520' OFFSET WELL

0.22 DATA

0.1 CONTOUR AND LABEL

SITE STANDARD

MIXING ZONE >0.16 mg/l

NON-MIXING ZONE >0.03 mg/l

SUBCROP OF LOWER CHINLE ALLUVIUM OVERLIES SANDSTONE

UNSATURATED ALLUVIUM SATURATED ALLUVIUM

SCALE: 1" = 1000'

C:\PROJECTS\2014-06\1600LOW bmw

DATE: 2/15/13

FIGURE 7.3-8. URANIUM CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2013, mg/l

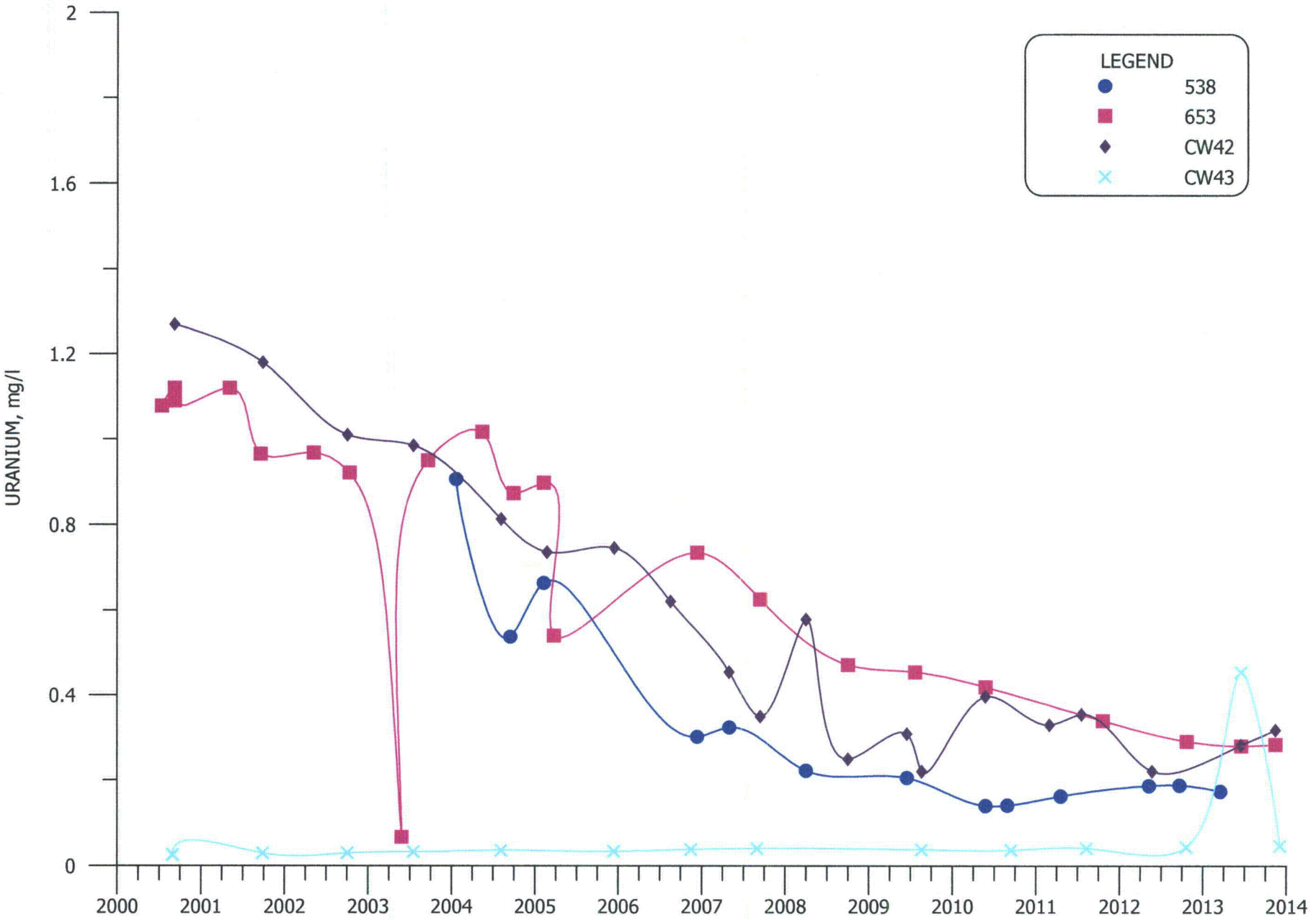


FIGURE 7.3-9. URANIUM CONCENTRATIONS FOR MIXING ZONE WELLS 538, 653, CW42, AND CW43

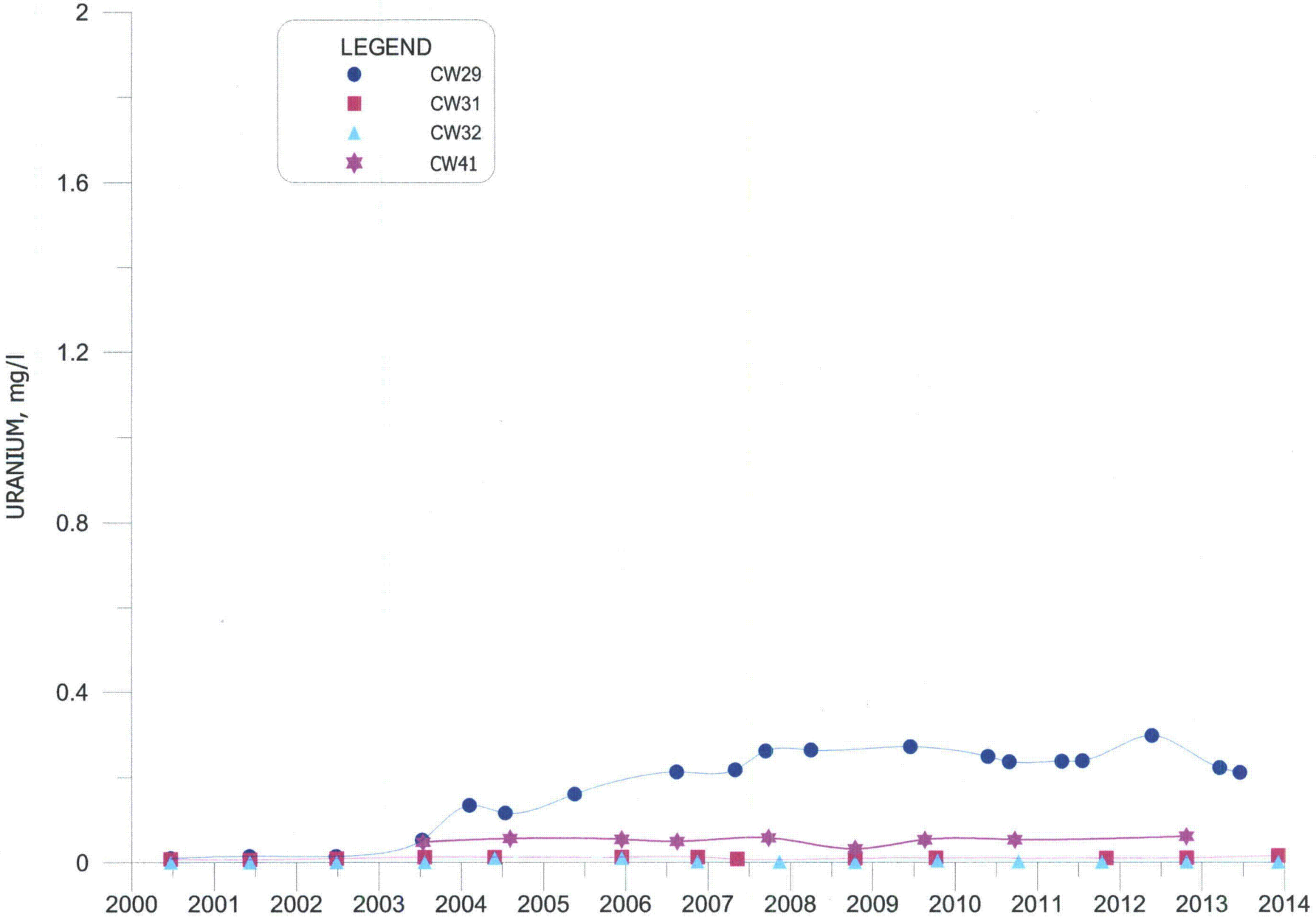
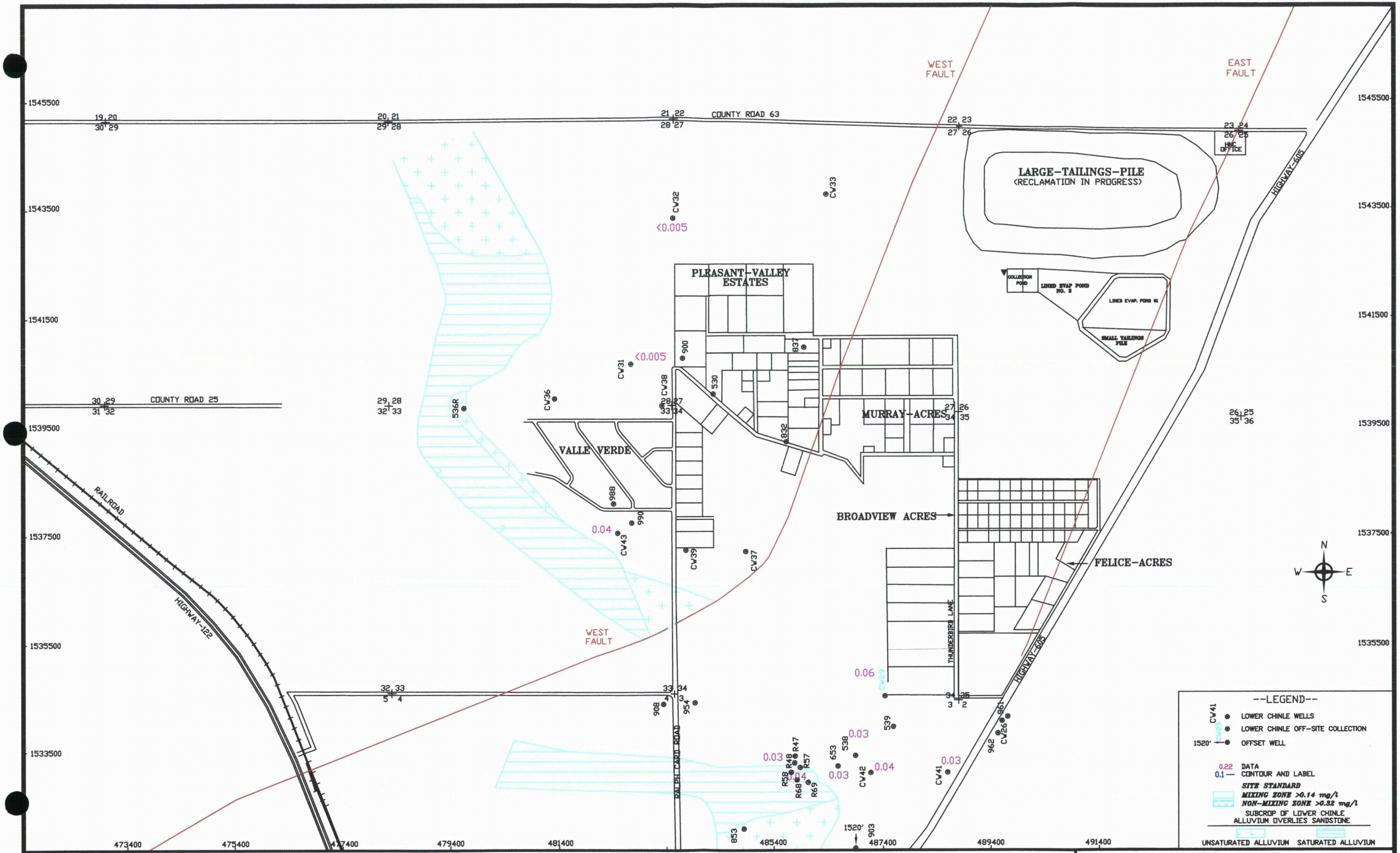


FIGURE 7.3-10. URANIUM CONCENTRATIONS FOR NON-MIXING WELLS CW29, CW31, CW32 AND CW41.



SCALE: 1" = 1000'
C:\PROJECTS\2014-06\1600LOW bmw
DATE: 2/15/13

FIGURE 7.3-11. SELENIUM CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2013, mg/l

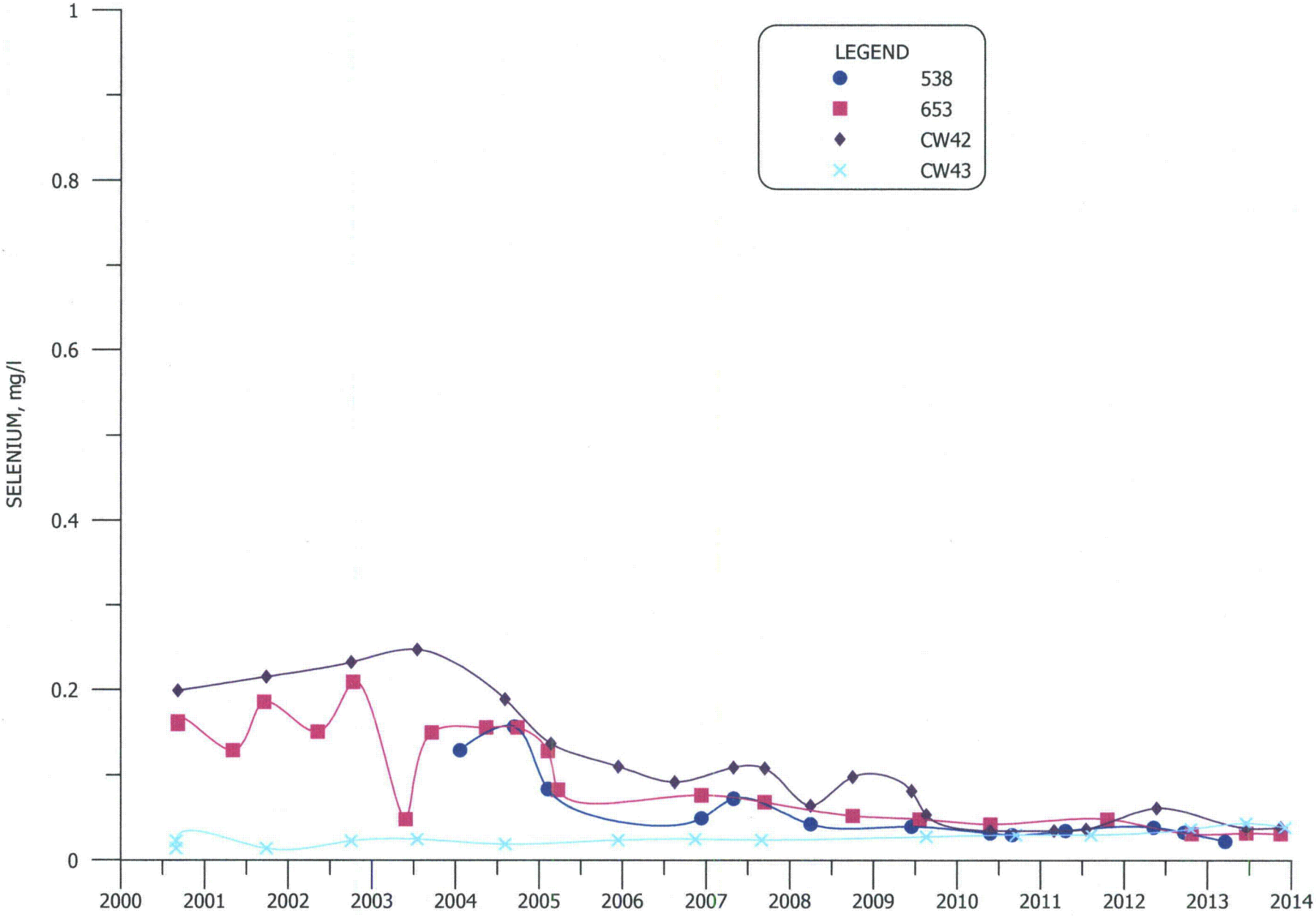


FIGURE 7.3-12. SELENIUM CONCENTRATIONS FOR MIXING ZONE WELLS 538, 653, CW42 AND CW43

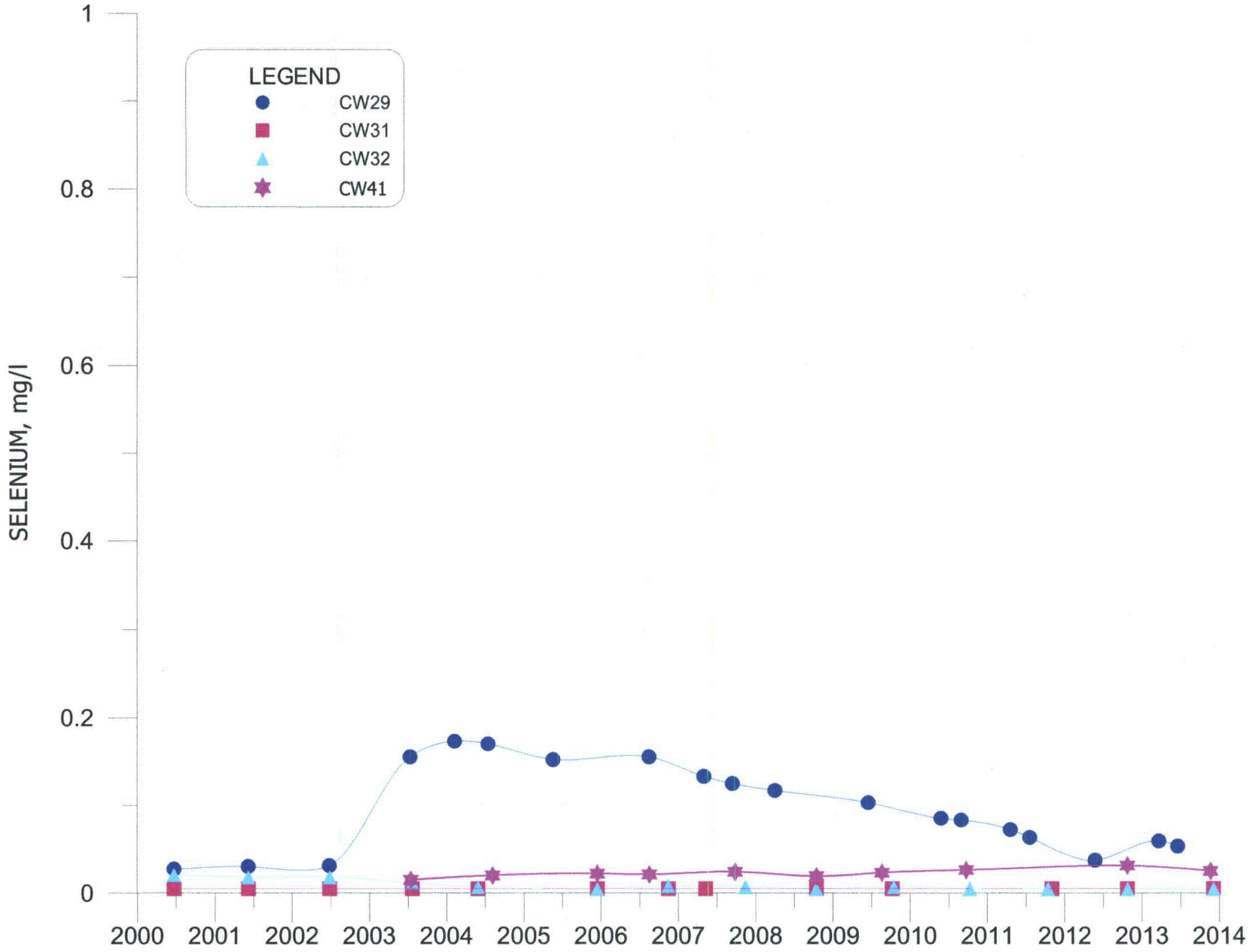
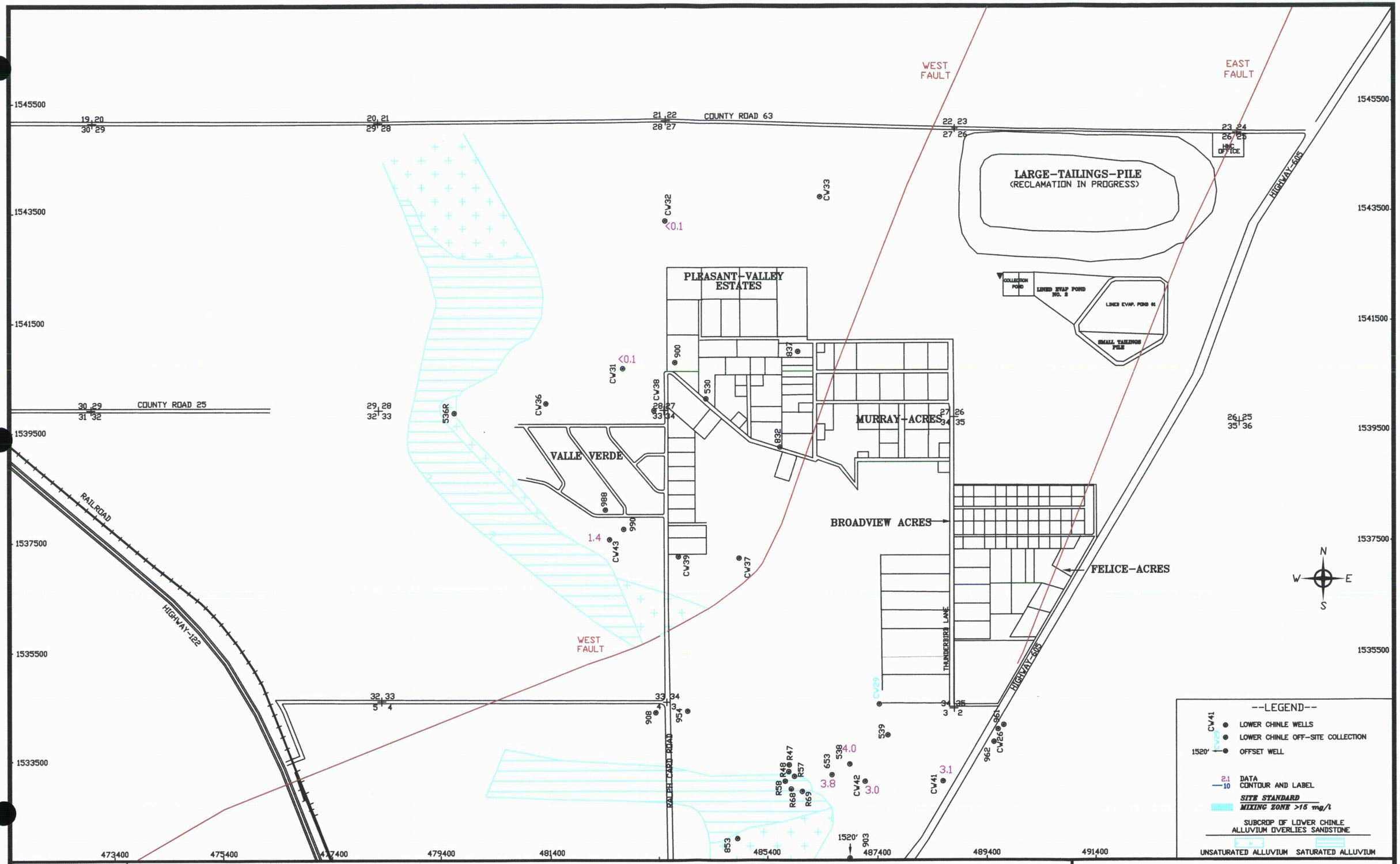


FIGURE 7.3-13. SELENIUM CONCENTRATIONS FOR NON-MIXING ZONE WELLS CW29, CW31, CW32 AND CW41.



SCALE: 1" = 1000'

C:\PROJECTS\2014-06\1600LOW bmw

DATE: 2/15/13

FIGURE 7.3-14. NITRATE CONCENTRATIONS OF THE LOWER CHINLE AQUIFER, 2013, mg/l

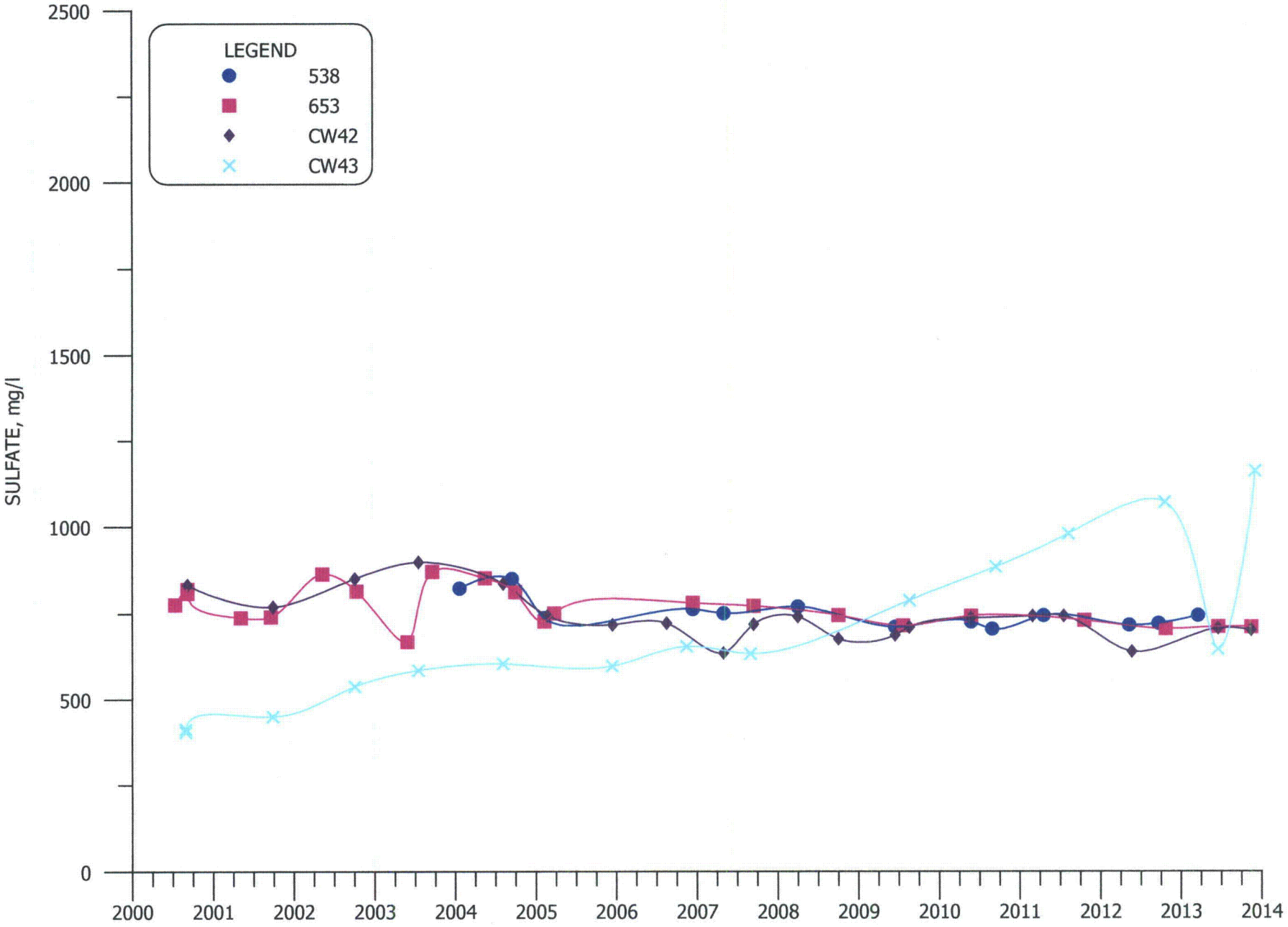


FIGURE 7.3-3. SULFATE CONCENTRATIONS FOR MIXING ZONE WELLS 538, 653, CW42, CW43

FIGURE 7.3-4. SULFATE CONCENTRATIONS FOR NON-MIXING WELLS CW29, CW31, CW32 AND CW41.

SECTION 8

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GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

8.0 SAN ANDRES AQUIFER MONITORING

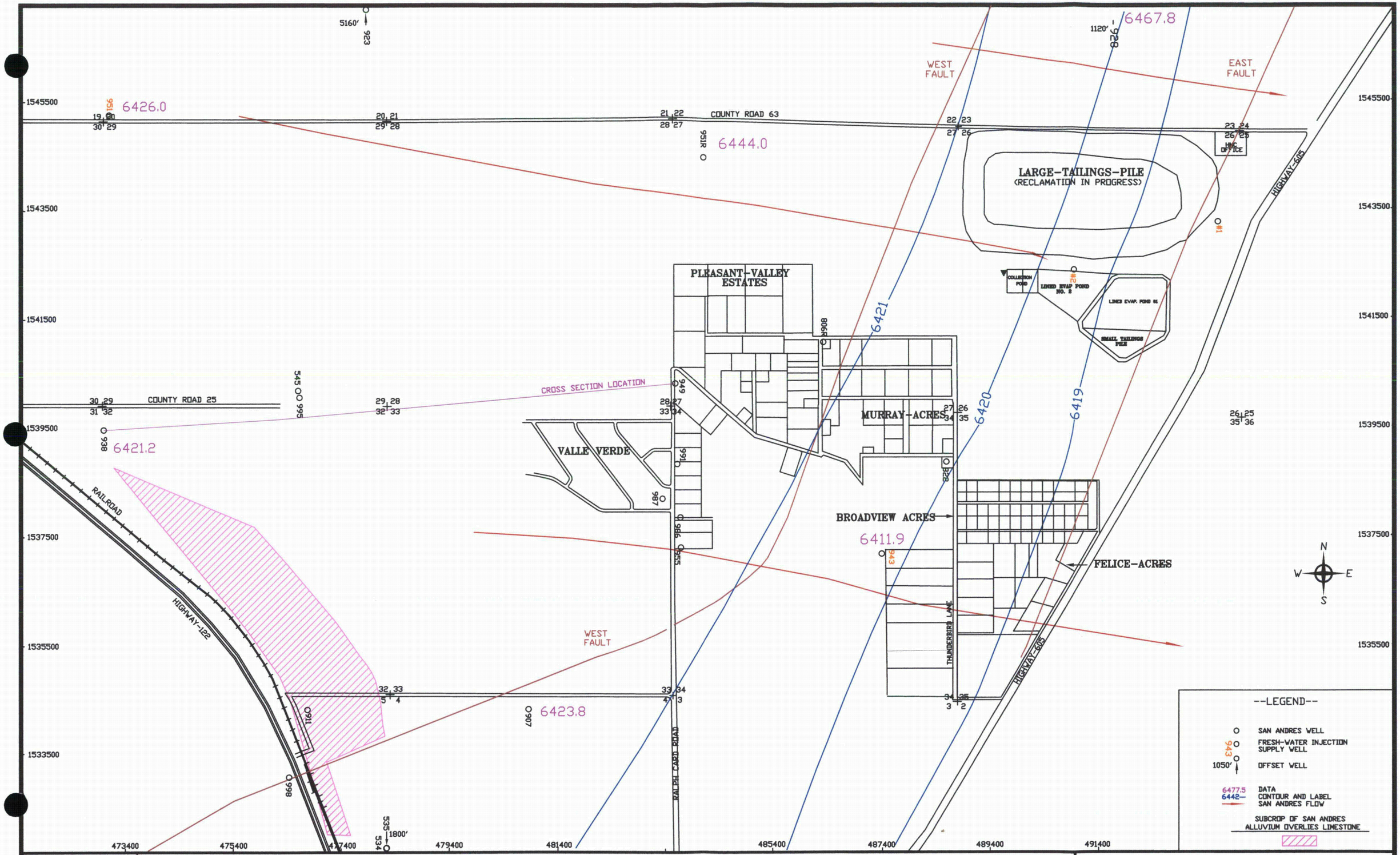
The San Andres aquifer is the most important regional aquifer in the Grants Project area. The Chinle Formation, which exists between the alluvium and the San Andres, is approximately 800 feet thick at the Homestake tailings site and is primarily a shale with a few sandstone lenses. Therefore, the alluvial aquifer and the San Andres aquifer are separated by a very thick aquitard. The difference in piezometric head between the alluvial and San Andres aquifers is in the range of 80 to 100 feet, which confirms that the flow between the two systems is restricted by the limited permeability of the Chinle Formation. The San Andres and alluvial aquifers are only in direct contact in the western portion of the area presented on Figure 8.0-1 (see magenta pattern area). With no areas of direct communication within the area where the alluvial aquifer is impacted by the Homestake tailings seepage, and only very limited hydraulic communication through the Chinle shale, the San Andres aquifer is not affected by tailings seepage. The San Andres aquifer has been used as the source for fresh-water injection into the alluvium and Chinle aquifers at the Grants Project, and as a result, a monitoring program was established for the San Andres aquifer.

Table 8.0-1 presents well completion information for the San Andres wells in this area. Homestake's two deep wells within the project area are San Andres wells, #1 Deep and #2 Deep. These wells are used to supply the fresh-water injection systems around the collection area. San Andres well 951 was used as the fresh-water injection supply for the injection system in Sections 28 and 29 through March of 2012. Replacement well 951R was used starting in July of 2012, while San Andres well 943 was used as the fresh water injection supply for the injection system in Sections 3 and 34 and Felice Acres. Figure 8.0-1 shows the locations of the San Andres wells relevant to this area. Recharge to the San Andres aquifer occurs mainly west of the area shown in the figure and in the far western portion of the figure. The structure of the San Andres aquifer dips to the east, and thus the ground water system becomes progressively deeper in the easterly direction. Figure 8.0-2 shows a cross-section from the west at San Andres well 938 to the east at San Andres well 949 (see Figure 8.0-1 for location of cross section). This cross section shows the dip of the San Andres and the thickness of Chinle shale between the alluvium and the top of the San Andres.

The water-level elevations measured during 2013 (Figure 8.0-1) show a very flat piezometric surface with the gradient being from the west-northwest to the east-southeast. The continuity of the gradient in this area indicates that the East and West faults do not significantly affect the ground water flow in the San Andres aquifer. The displacement at the faults is not large enough to completely displace the entire thickness of this aquifer system. The increase in gradient in the project area also indicates a decrease in transmissivity in the area of the steeper gradient. The faults may cause a decrease in the transmitting ability of the San Andres aquifer in this area.

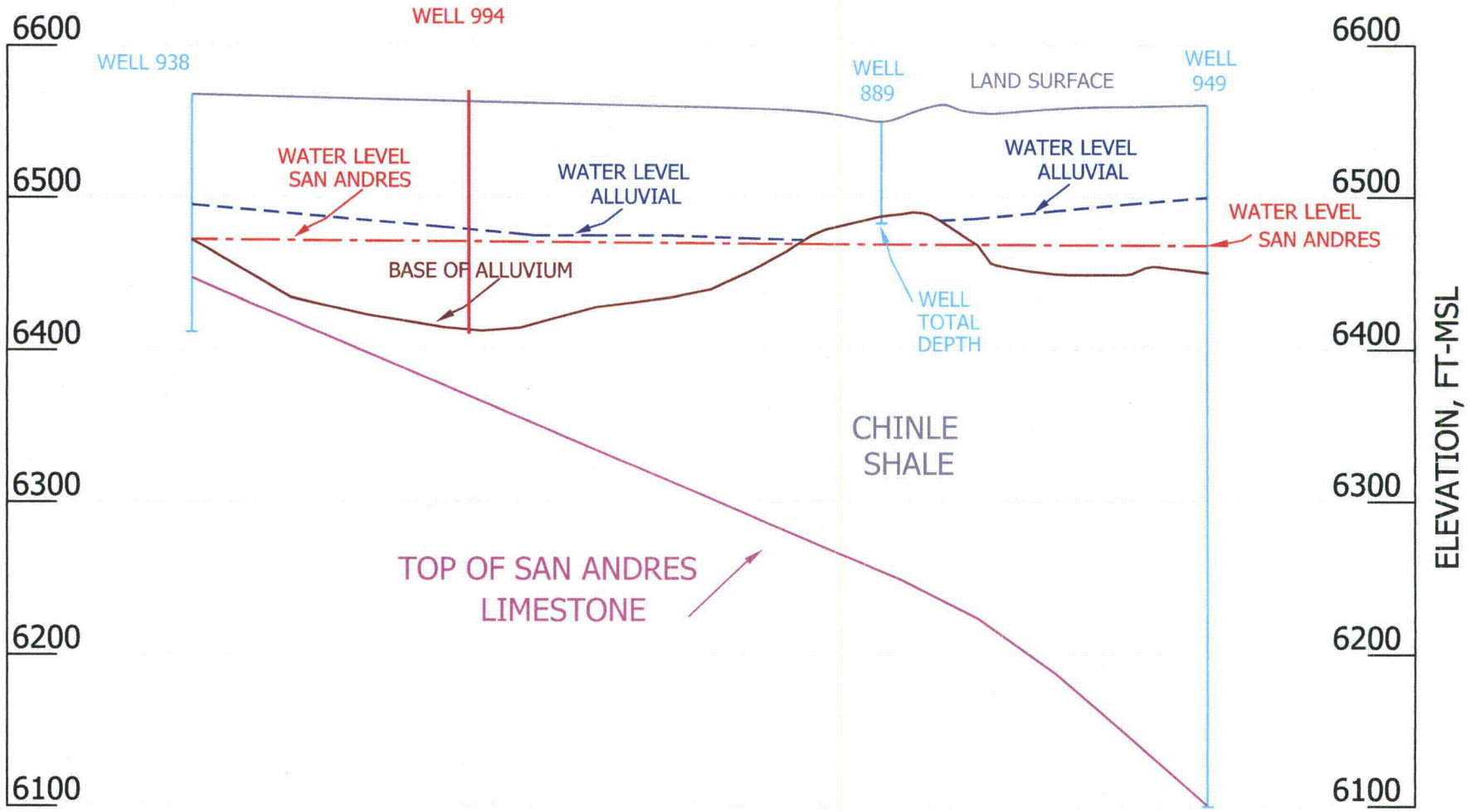
Figure 8.0-3 presents the most recent water-quality data for the San Andres aquifer. Tables B.6-1 and B.6-2 in Appendix B present the tabulation of the water-quality data for the San Andres aquifer. Figure 8.0-3 shows the 2013 data for sulfate, TDS, uranium and selenium concentrations in the San Andres aquifer. Sulfate concentrations vary from 581 mg/l to 748 mg/l in the San Andres aquifer. Sulfate concentrations are typically near 700 mg/l for Homestake #1 Deep and #2 Deep wells. TDS concentrations have varied from 1490 to 1990 mg/l and generally increase in a down-gradient direction. The higher concentrations of sulfate and TDS to the east are natural and typical of a limestone aquifer where the extended contact time with the formation results in ongoing dissolution of major constituents. This increase in concentrations from the recharge area down dip is expected. Uranium concentrations were small in all of the San Andres wells monitored during 2013. Selenium concentrations in the San Andres aquifer vary from <0.005 to 0.009 mg/l. All measured molybdenum concentrations are less than 0.03 mg/l.

Figure 8.0-4 presents sulfate concentrations with time for Homestake's wells 943, 951, 951R, Deep #1 and #2 wells. This data shows that sulfate concentrations in 2013 for these San Andres wells were similar to their historical average since injection water supply has occurred.



SCALE: 1" = 1000'	
C:\PROJECTS\2013-06\1600SAN bmw	
DATE: 2/16/2013	

FIGURE 8.0-1. LOCATION OF SAN ANDRES WELLS AND WATER-LEVEL ELEVATION FOR THE SAN ANDRES AQUIFER, 2013, FT-MSL



NOTE: X-SECTION BASED ON LOGS FROM WELLS 938, 889, AND 949.

FIGURE 8.0-2. SAN ANDRES CROSS-SECTION ALONG THE NORTHERN BORDER OF SECTIONS 32 AND 33

DATE: 02/23/13

HORIZONTAL SCALE: 1" = 1600'

C:\PROJECTS\2013-06\XSEC32-33.DWG

5160'
923
1120'
928
WEST FAULT
EAST FAULT
1545500
956
19 20 / 30 29
20 21 / 29 28
21 22 / 28 27
COUNTY ROAD 63
22 23 / 27 26
23 24 / 26 25
HMC OFFICE
581 | 0.038
0.009 | 1490
LARGE-TAILINGS-PILE
(RECLAMATION IN PROGRESS)
695 | 0.011
0.007 | 1800
HIGHWAY-605
748 | 0.011
<0.005 | 1990
1543500
COLLECTION POND
LINED EVAP POND NO. 2
LINED EVAP. POND 01
SMALL TAILINGS PILE
1541500
PLEASANT-VALLEY ESTATES
808
949
28 27 / 33 34
MURRAY-ACRES
27 26 / 34 35
26 25 / 35 36
1539500
30 29 / 31 32
COUNTY ROAD 25
29 28 / 32 33
545000
938
991
822
VALLE VERDE
987
RAILROAD
1537500
986
955
BROADVIEW ACRES
943
FELICE-ACRES
N
W
E
S
HIGHWAY-122
WEST FAULT
1535500
32 33 / 5 4
33 34 / 4 3
911
907
THUNDERBURG LANE
34 35 / 3 2
HIGHWAY-605
RALPH CARR ROAD
1533500
938
535
1800'
534
473400
475400
477400
479400
481400
485400
487400
489400
491400

--LEGEND--

- SAN ANDRES WELL
- 943 — FRESH-WATER INJECTION SUPPLY WELL
- 1050' — OFFSET WELL
- SO4 | U / Se | TDS
- SUBCROP OF SAN ANDRES ALLUVIUM OVERLIES LIMESTONE

SCALE: 1" = 1000'
C:\PROJECTS\2014-06\1600SAN bmw
DATE: 2/16/2013

FIGURE 8.0-3. LOCATION OF SAN ANDRES WELLS AND WATER QUALITY DATA FOR THE SAN ANDRES AQUIFER 2013, mg/l

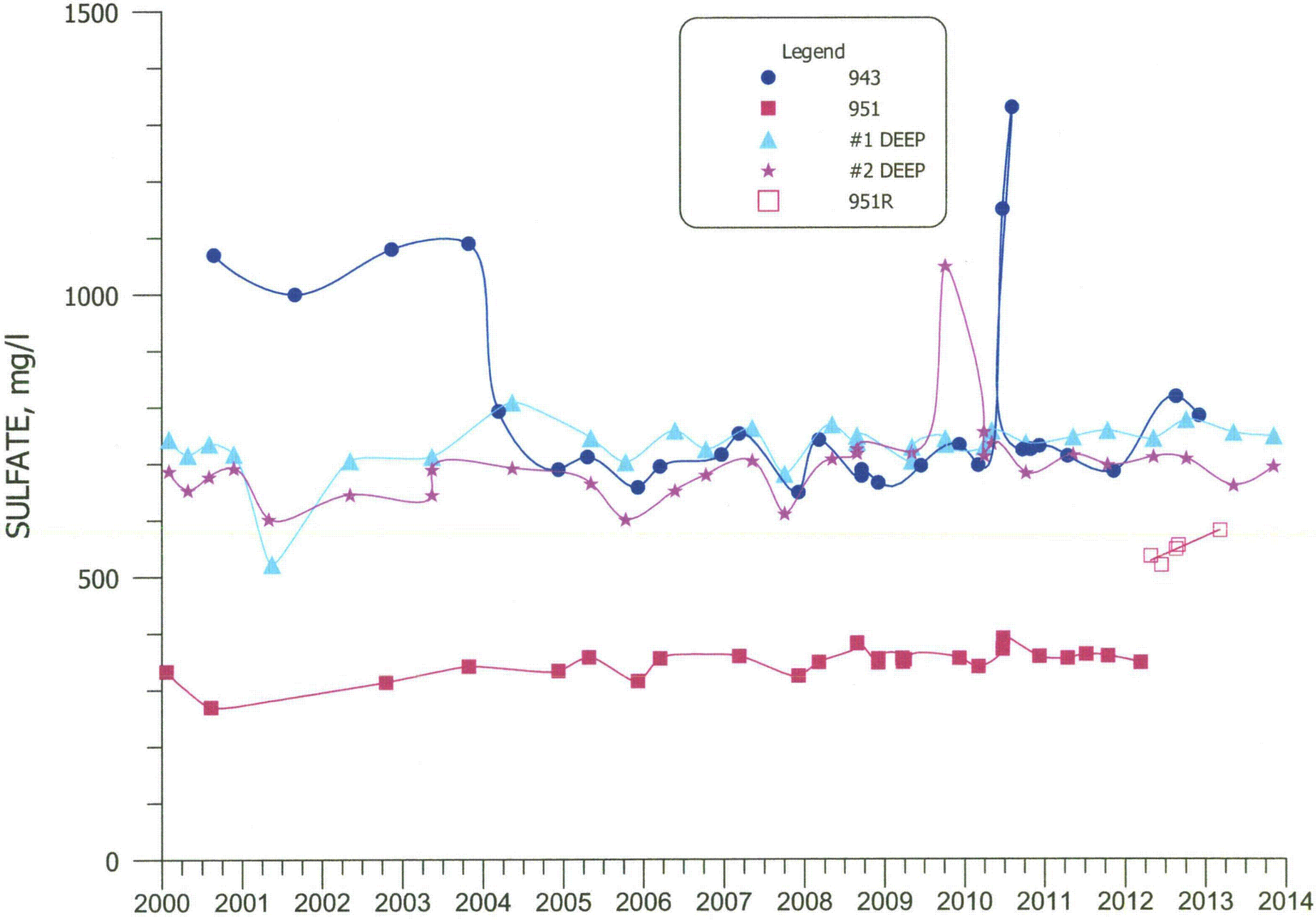


FIGURE 8.0-4. SULFATE CONCENTRATIONS FOR WELLS 943, 951, 951R, #1 DEEP, AND #2 DEEP.

TABLE 8.0-1. WELL DATA FOR THE SAN ANDRES WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO TOP OF SAN ANDRES (FT-LSD)	ELEV. TO TOP OF SAN ANDRES (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)
#1 Deepw	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 Deepw	1542424	490972	870.0	---	11/4/2013	207.110	6368.55	0.0	6575.66	110	6466	A ---
										800	5776	S -
0806R	1541177	486264	600.0	16.0	4/13/2011	148.600	6418.40	---	6567.00	---	---	S 504-600
0534	1534589	476549	1000.0	16.0	12/16/2010	120.010	6432.56	0.0	6552.57	---	---	S -
0535	1530100	478450	198.0	12.0	12/17/2010	117.849	6422.15	0.0	6540.00	---	---	S -
0545	1540200	476600	0.0	8.0	---	---	---	---	6560.00	---	---	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
0907	1534250	480800	360.0	16.0	12/11/2013	121.75	6423.85	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	---	12/11/2013	129.75	6467.85	1.2	6597.60	138	6458	A ---
										801	5795	S -
0938	1539500	473040	---	---	12/11/2013	147.649	6421.15	0.0	6568.80	95	6474	A ---
										120	6449	S -
0943	1537222	487407	978.0	18.0	6/24/2013	143.979	6411.93	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	3/26/2012	147.699	6426.00	0.9	6573.70	110	6463	A ---
										227	6346	S 241-275
0951R	1538226	483357	500.0	8.0	6/24/2013	132.75	6444.03	---	6576.78	65	---	A ---
										420	---	S 415-525
0955	1537338	483699	498.0	5.0	11/3/1995	78.0500	6471.95	0.2	6550.00	40	6510	A ---
										420	6130	S 385-498
0986	1537894	483690	467.0	5.0	8/23/2008	124	6526.00	0.8	6650.00	65	6584	A ---
										85	6564	L ---

TABLE 8.0-1. WELL DATA FOR THE SAN ANDRES WELLS.

(cont'd.)

WELL NAME	NORTH. COORD.	EAST. COORD.	WELL DEPTH (FT-MP)	CASING DIAM (IN)	WATER LEVEL DATE	WATER LEVEL DEPTH (FT-MP)	WATER LEVEL ELEV. (FT-MSL)	MP ABOVE LSD (FT)	MP ELEV. (FT-MSL)	DEPTH TO TOP OF SAN ANDRES (FT-LSD)	ELEV. TO TOP OF SAN ANDRES (FT-MSL)	CASING PERFOR-ATIONS (FT-LSD)	
0986	1537894	483690	467.0	5.0	8/23/2008	124	6526.00	0.8	6650.00	415	6234	S	420-467
0987	1538226	483357	500.0	5.0	11/3/1995	54.4799	6595.52	1.0	6650.00	70	6579	A	---
										385	6264	S	425-470
0991	1538873	483630	500.0	---	8/26/2008	126.819	6524.18	1.4	6651.00	---	---	S	-
0995	1540115	476594	---	---	---	---	---	0.0	6474.00	---	---	S	-
0998	1533080	476450	145.0	16.0	---	---	---	0.0	6650.00	---	---	S	-

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

SECTION 9

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GROUND WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

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APPENDIX A
WATER LEVELS

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GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

APPENDIX A

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0690		
2/19/2013	35.27	6546.79
12/11/2013	35.46	6546.60
0691		
2/19/2013	42.27	6546.54
12/11/2013	42.36	6546.45
0891		
2/19/2013	32.46	6548.66
1I		
2/20/2013	35.20	6563.15
1N		
2/19/2013	27.10	6563.75
1O		
2/19/2013	43.80	6551.14
1P		
2/19/2013	36.53	6548.71
1Q		
1/16/2013	38.00	6545.11
1/22/2013	36.00	6547.11
1U		
2/20/2013	37.32	6548.90
1V		
1/2/2013	35.98	6548.96
1/7/2013	36.02	6548.92
1/14/2013	36.00	6548.94
1/21/2013	35.85	6549.09
1/28/2013	36.02	6548.92
2/4/2013	36.07	6548.87
2/11/2013	36.06	6548.88
2/18/2013	36.08	6548.86
2/25/2013	36.12	6548.82
B		
1/2/2013	33.20	6537.70
1/7/2013	33.07	6537.83
1/14/2013	33.01	6537.89
1/21/2013	32.97	6537.93
1/28/2013	32.70	6538.20
2/4/2013	32.71	6538.19
2/11/2013	32.57	6538.33
2/18/2013	32.50	6538.40
2/25/2013	32.51	6538.39
3/4/2013	32.45	6538.45
3/11/2013	32.48	6538.42
3/18/2013	32.44	6538.46
3/25/2013	32.54	6538.36
4/1/2013	32.45	6538.45
4/8/2013	32.30	6538.60
4/15/2013	32.53	6538.37
4/22/2013	32.63	6538.27
4/29/2013	32.57	6538.33
5/6/2013	32.62	6538.28
5/13/2013	32.67	6538.23
5/20/2013	32.72	6538.18
5/28/2013	32.75	6538.15
6/3/2013	32.92	6537.98
6/10/2013	33.04	6537.86
6/17/2013	33.15	6537.75
6/24/2013	33.21	6537.69
7/1/2013	33.36	6537.54
7/8/2013	33.35	6537.55
7/15/2013	33.31	6537.59
7/22/2013	33.29	6537.61
7/29/2013	33.30	6537.60
8/26/2013	33.32	6537.58
9/23/2013	33.14	6537.76
10/28/2013	32.75	6538.15
11/25/2013	32.88	6538.02
12/23/2013	32.94	6537.96
B1		
12/12/2013	---	---
B7		
6/18/2013	31.90	6542.50
11/23/2013	47.36	6527.04
B12		
5/14/2013	33.49	6539.53
12/12/2013	33.66	6539.36
B13		
5/14/2013	32.17	6537.87
12/12/2013	33.41	6536.63
BA		
1/2/2013	35.48	6536.10
1/7/2013	35.31	6536.27
1/14/2013	35.28	6536.30
1/21/2013	35.25	6536.33
1/28/2013	35.13	6536.45
2/4/2013	35.18	6536.40
2/11/2013	35.15	6536.43
2/18/2013	35.10	6536.48
2/25/2013	35.12	6536.46
3/4/2013	34.95	6536.63
3/11/2013	35.16	6536.42
3/18/2013	35.04	6536.54
3/25/2013	35.05	6536.53
4/1/2013	34.93	6536.65
4/8/2013	34.73	6536.85
4/15/2013	34.85	6536.73
4/22/2013	34.93	6536.65
4/29/2013	34.85	6536.73
5/6/2013	34.35	6537.23
5/13/2013	34.35	6537.23
5/20/2013	34.85	6536.73
5/28/2013	34.72	6536.86
6/3/2013	35.21	6536.37
6/10/2013	35.35	6536.23
6/17/2013	35.22	6536.36
6/24/2013	35.47	6536.11
7/1/2013	35.68	6535.90
7/8/2013	35.53	6536.05
7/15/2013	35.46	6536.12
7/22/2013	35.45	6536.13
7/29/2013	35.44	6536.14
8/26/2013	35.55	6536.03
9/23/2013	35.48	6536.10
10/28/2013	34.82	6536.76
11/25/2013	35.10	6536.48
12/23/2013	35.44	6536.14
BC		
12/12/2013	33.92	6540.69
C6		
3/7/2013	50.93	6533.96
10/31/2013	54.95	6529.94
C7		
3/7/2013	46.95	6537.49
C8		
3/7/2013	64.58	6519.91
10/30/2013	76.13	6508.36
C9		
3/7/2013	51.77	6532.78
10/31/2013	46.42	6538.13
C10		
3/7/2013	55.41	6529.85
10/31/2013	54.90	6530.36
C11		
3/7/2013	60.92	6520.46
C12		
3/7/2013	65.24	6515.31
10/31/2013	14.85	6565.70
D1		
3/4/2013	35.26	6535.64
7/8/2013	35.80	6535.10
DC		
12/12/2013	35.18	6536.13

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

DD

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	---	---
2/11/2013	---	---
2/25/2013	---	---
3/25/2013	---	---
4/29/2013	---	---
5/1/2013	---	---
5/28/2013	---	---
6/24/2013	---	---
10/30/2013	---	---
11/22/2013	---	---

DD2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	48.30	6544.98
2/11/2013	48.47	6544.81
2/25/2013	48.56	6544.72
3/25/2013	48.53	6544.75
4/29/2013	48.26	6545.02
5/1/2013	45.40	6547.88
5/28/2013	48.12	6545.16
6/24/2013	48.20	6545.08
10/30/2013	47.65	6545.63
11/22/2013	47.80	6545.48

DT

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	11.35	6572.46
2/25/2013	47.38	6536.43
3/25/2013	46.90	6536.91
4/29/2013	46.50	6537.31
5/28/2013	46.30	6537.51
6/24/2013	46.50	6537.31

DZ

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	47.81	6542.72
1/7/2013	47.53	6543.00
1/14/2013	47.93	6542.60
1/21/2013	48.00	6542.53
1/28/2013	47.67	6542.86
2/4/2013	47.78	6542.75
2/11/2013	47.74	6542.79
2/18/2013	47.98	6542.55
2/25/2013	48.30	6542.23
3/4/2013	47.82	6542.71
3/11/2013	48.14	6542.39
3/18/2013	47.89	6542.64
3/25/2013	47.42	6543.11
4/1/2013	47.57	6542.96
4/8/2013	47.24	6543.29
4/15/2013	47.44	6543.09
4/22/2013	47.60	6542.93
4/29/2013	47.52	6543.01
5/6/2013	47.63	6542.90
5/13/2013	47.68	6542.85
5/20/2013	47.50	6543.03
5/28/2013	47.50	6543.03
6/3/2013	47.66	6542.87
6/10/2013	47.67	6542.86
6/17/2013	47.48	6543.05
6/24/2013	47.57	6542.96
7/1/2013	47.74	6542.79
7/8/2013	47.65	6542.88
7/15/2013	47.52	6543.01
7/22/2013	47.50	6543.03
7/29/2013	47.44	6543.09
8/26/2013	47.75	6542.78
9/23/2013	48.10	6542.43
10/28/2013	47.63	6542.90
11/25/2013	48.14	6542.39
12/23/2013	48.77	6541.76

F

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/5/2013	30.00	6534.82
10/29/2013	29.25	6535.57
12/12/2013	29.90	6534.92

FB

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/5/2013	31.70	6533.96
11/1/2013	31.24	6534.42

GA

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	32.62	6530.17

GF

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	33.75	6532.26

GH

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/5/2013	31.27	6531.49
11/1/2013	30.73	6532.03
12/12/2013	31.55	6531.21

GN

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/5/2013	34.19	6533.78

GV

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/5/2013	47.47	6529.91
12/12/2013	47.76	6529.62

GW1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	30.04	6535.23

GW2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	30.99	6535.09

K4

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	66.38	6535.64
10/31/2013	53.88	6548.14

K5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	59.72	6542.01
10/31/2013	58.13	6543.60

K7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	57.11	6544.42
10/31/2013	55.24	6546.29

K8

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	58.64	6541.85
10/31/2013	57.80	6542.69

K9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	57.11	6543.23
10/31/2013	56.06	6544.28

K10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	57.60	6543.21
10/31/2013	57.30	6543.51

K11

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	59.18	6541.43
10/31/2013	58.91	6541.70

KEB

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/27/2013	21.16	6548.57

KF

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/27/2013	25.46	6544.75

* Drawdown Tube Pressure, # Transducer Reading

DD - KF

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

KZ

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	28.37	6543.35
1/7/2013	28.28	6543.44
1/14/2013	27.93	6543.79
1/21/2013	27.80	6543.92
1/28/2013	27.51	6544.21
2/4/2013	27.58	6544.14
2/11/2013	27.51	6544.21
2/18/2013	27.57	6544.15
2/25/2013	27.59	6544.13
2/27/2013	27.71	6544.01
3/4/2013	27.38	6544.34
3/11/2013	27.62	6544.10
3/18/2013	27.40	6544.32
3/25/2013	27.43	6544.29
4/1/2013	27.29	6544.43
4/8/2013	27.11	6544.61
4/15/2013	27.25	6544.47
4/22/2013	27.31	6544.41
4/29/2013	27.70	6544.02
5/6/2013	27.26	6544.46
5/13/2013	27.29	6544.43
5/20/2013	27.23	6544.49
5/28/2013	27.15	6544.57
6/3/2013	27.34	6544.38
6/10/2013	27.53	6544.19
6/17/2013	27.97	6543.75
6/24/2013	27.20	6544.52
7/1/2013	27.34	6544.38
7/8/2013	27.36	6544.36
7/15/2013	27.12	6544.60
7/22/2013	27.05	6544.67
7/29/2013	26.93	6544.79
8/26/2013	27.12	6544.60
9/23/2013	27.28	6544.44
10/28/2013	27.12	6544.60
11/25/2013	27.55	6544.17
12/23/2013	28.20	6543.52

L

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/14/2013	40.76	6534.21
5/13/2013	57.60	6517.37
7/9/2013	57.60	6517.37

L5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/14/2013	31.88	6544.19
5/13/2013	49.60	6526.47
7/9/2013	50.41	6525.66

L6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/14/2013	26.32	6548.32
5/13/2013	25.94	6548.70
7/9/2013	26.07	6548.57

L7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/14/2013	29.46	6547.15
5/13/2013	43.10	6533.51
7/9/2013	44.33	6532.28

L8

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/14/2013	37.05	6539.44
5/13/2013	44.32	6532.17
7/9/2013	45.73	6530.76

L9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/14/2013	25.80	6551.43
5/13/2013	38.22	6539.01
5/15/2013	58.80	6518.43
7/9/2013	46.44	6530.79

L10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/14/2013	39.16	6537.67
5/13/2013	39.70	6537.13
7/9/2013	41.19	6535.64

M5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/3/2013	36.15	6539.19
12/12/2013	36.34	6539.00

M6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/14/2013	57.50	6517.54
12/12/2013	55.56	6519.48

M7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/20/2013	52.62	6520.23
12/12/2013	51.80	6521.05

M9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/20/2013	62.45	6514.36
11/23/2013	70.51	6506.30
12/12/2013	56.88	6519.93

M10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/14/2013	57.54	6515.82
12/12/2013	55.52	6517.84

MA

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	38.42	6533.80

MC

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	40.82	6531.24

MF

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	43.58	6528.70

MH

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	47.60	6526.32

ML

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/14/2013	47.38	6525.32
12/12/2013	46.60	6526.10

MO

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/4/2013	35.80	6537.09
11/1/2013	48.24	6524.65

MQ

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/20/2013	63.24	6511.06
11/23/2013	62.42	6511.88
12/12/2013	57.58	6516.72

MR

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/15/2013	62.80	6503.46
6/18/2013	63.69	6502.57
12/12/2013	60.00	6506.26

MS

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/23/2013	54.65	6516.02
12/12/2013	54.83	6515.84

MT

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/15/2013	58.21	6509.22

MU

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	34.72	6539.47

MV

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/15/2013	61.62	6508.16
12/12/2013	58.31	6511.47

MW

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/15/2013	58.03	6516.88
12/12/2013	56.44	6518.47

MX

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/14/2013	48.30	6520.31

MY

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/14/2013	52.97	6520.59

MZ

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/15/2013	61.15	6515.49
12/12/2013	58.96	6517.68

NC

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	40.49	6545.34

ND

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/3/2013	43.49	6549.40

P

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/7/2013	42.43	6544.83
11/5/2013	40.22	6547.04

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

P2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	51.25	6538.54
1/7/2013	51.16	6538.63
1/14/2013	50.85	6538.94
1/28/2013	51.16	6538.63
2/4/2013	51.02	6538.77
2/20/2013	51.16	6538.63
2/25/2013	51.33	6538.46
3/25/2013	51.33	6538.46
4/1/2013	51.35	6538.44
4/29/2013	50.49	6539.30
5/28/2013	45.50	6544.29
6/24/2013	44.74	6545.05
7/15/2013	44.60	6545.19
7/22/2013	44.72	6545.07

P3

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	50.55	6539.40
1/7/2013	50.55	6539.40
1/14/2013	50.10	6539.85
1/28/2013	51.13	6538.82
2/4/2013	51.04	6538.91
2/20/2013	51.38	6538.57
2/25/2013	51.30	6538.65
3/25/2013	51.76	6538.19
4/1/2013	52.58	6537.37
4/29/2013	51.38	6538.57
5/28/2013	44.70	6545.25
6/24/2013	44.18	6545.77
7/15/2013	44.04	6545.91
7/22/2013	44.03	6545.92

P4

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	49.37	6540.15
1/7/2013	40.98	6548.54
1/14/2013	48.92	6540.60
1/28/2013	49.93	6539.59
2/4/2013	50.09	6539.43
2/20/2013	49.96	6539.56
2/25/2013	49.85	6539.67
3/25/2013	50.15	6539.37
4/1/2013	51.17	6538.35
4/29/2013	49.18	6540.34
5/28/2013	43.25	6546.27
6/24/2013	42.56	6546.96
7/15/2013	42.30	6547.22
7/22/2013	42.10	6547.42

Q

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	44.96	6548.86

R

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/13/2013	41.04	6562.99

S

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	38.17	6543.00

S2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	34.45	6539.27
1/7/2013	34.37	6539.35
1/14/2013	34.52	6539.20
1/14/2013	34.45	6539.27
1/21/2013	34.41	6539.31
1/28/2013	34.17	6539.55
2/4/2013	34.13	6539.59
2/11/2013	34.05	6539.67
2/18/2013	34.00	6539.72
2/25/2013	33.90	6539.82
3/4/2013	33.72	6540.00
3/11/2013	33.82	6539.90
3/18/2013	33.75	6539.97
3/25/2013	33.72	6540.00
4/1/2013	33.55	6540.17
4/8/2013	33.21	6540.51
4/15/2013	33.16	6540.56
4/22/2013	33.09	6540.63
4/29/2013	33.00	6540.72
5/6/2013	32.98	6540.74
5/13/2013	32.86	6540.86
5/20/2013	32.77	6540.95
5/28/2013	32.62	6541.10
6/3/2013	32.71	6541.01
6/10/2013	32.71	6541.01
6/17/2013	32.82	6540.90
6/24/2013	33.32	6540.40
7/1/2013	33.57	6540.15
7/8/2013	33.75	6539.97
7/9/2013	33.86	6539.86
7/15/2013	33.92	6539.80
7/22/2013	33.97	6539.75
7/29/2013	34.07	6539.65
8/26/2013	34.40	6539.32
9/23/2013	34.45	6539.27
10/28/2013	34.05	6539.67
11/25/2013	33.71	6540.01
12/12/2013	33.27	6540.45
12/23/2013	33.10	6540.62

S3

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	34.93	6539.85

S4

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/4/2013	34.50	6540.79
7/9/2013	34.80	6540.49
12/12/2013	34.18	6541.11

S5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	40.05	6534.64
1/7/2013	39.64	6535.05
1/14/2013	40.12	6534.57
1/21/2013	40.07	6534.62
1/28/2013	39.72	6534.97
2/4/2013	39.73	6534.96
2/11/2013	39.72	6534.97
2/18/2013	39.64	6535.05
2/25/2013	39.76	6534.93
3/4/2013	39.33	6535.36
3/11/2013	39.49	6535.20
3/18/2013	39.27	6535.42
3/25/2013	39.55	6535.14
4/1/2013	39.11	6535.58
4/8/2013	38.61	6536.08
4/15/2013	38.60	6536.09
4/22/2013	38.55	6536.14
4/29/2013	38.37	6536.32
5/6/2013	38.43	6536.26
5/13/2013	38.39	6536.30
5/20/2013	38.29	6536.40
5/28/2013	38.15	6536.54
6/3/2013	38.24	6536.45
6/10/2013	38.26	6536.43
6/17/2013	38.12	6536.57
6/24/2013	38.86	6535.83
7/1/2013	39.17	6535.52
7/8/2013	39.37	6535.32
7/15/2013	39.54	6535.15
7/22/2013	39.66	6535.03
7/29/2013	39.92	6534.77
8/26/2013	40.22	6534.47
9/23/2013	40.13	6534.56
10/28/2013	39.90	6534.79
11/25/2013	39.30	6535.39
12/23/2013	38.57	6536.12

S5R

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/18/2013	34.10	6546.39

S11

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/3/2013	31.58	6546.81
12/12/2013	31.67	6546.72

SE6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	39.30	6539.61
1/7/2013	39.06	6539.85
1/14/2013	39.82	6539.09
1/21/2013	39.70	6539.21
1/28/2013	39.40	6539.51
2/4/2013	39.35	6539.56
2/11/2013	39.19	6539.72
2/18/2013	39.20	6539.71
2/25/2013	39.11	6539.80

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

SM

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	37.43	6541.31
1/7/2013	37.22	6541.52
1/14/2013	37.36	6541.38
1/21/2013	37.35	6541.39
1/28/2013	37.11	6541.63
2/4/2013	37.06	6541.68
2/11/2013	36.90	6541.84
2/18/2013	36.87	6541.87
2/25/2013	36.86	6541.88
3/4/2013	36.62	6542.12
3/11/2013	36.73	6542.01
3/18/2013	36.60	6542.14
3/25/2013	36.58	6542.16
4/1/2013	36.42	6542.32
4/8/2013	36.10	6542.64
4/15/2013	36.10	6542.64
4/22/2013	36.04	6542.70
4/29/2013	35.88	6542.86
5/6/2013	35.86	6542.88
5/13/2013	35.87	6542.87
5/15/2013	35.70	6543.04
5/20/2013	35.79	6542.95
5/28/2013	35.64	6543.10
6/3/2013	35.66	6543.08
6/10/2013	35.66	6543.08
6/17/2013	35.69	6543.05
6/24/2013	36.10	6542.64
7/1/2013	36.42	6542.32
7/8/2013	36.67	6542.07
7/15/2013	36.87	6541.87
7/22/2013	37.02	6541.72
7/29/2013	37.11	6541.63
8/26/2013	37.40	6541.34
9/23/2013	37.54	6541.20
10/28/2013	37.14	6541.60
11/25/2013	36.65	6542.09
12/23/2013	36.17	6542.57

SN

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	38.10	6541.16
1/7/2013	37.82	6541.44
1/14/2013	37.88	6541.38
1/21/2013	37.90	6541.36
1/28/2013	37.70	6541.56
2/4/2013	37.64	6541.62
2/11/2013	37.51	6541.75
2/18/2013	37.48	6541.78
2/25/2013	37.46	6541.80
3/4/2013	37.23	6542.03
3/11/2013	37.35	6541.91
3/18/2013	37.20	6542.06
3/25/2013	37.18	6542.08
4/1/2013	37.03	6542.23
4/8/2013	36.77	6542.49
4/15/2013	36.70	6542.56
4/22/2013	36.65	6542.61
4/29/2013	36.49	6542.77
5/6/2013	36.48	6542.78
5/13/2013	36.50	6542.76
5/20/2013	36.41	6542.85
5/28/2013	36.28	6542.98
6/3/2013	36.32	6542.94
6/10/2013	36.30	6542.96
6/17/2013	36.34	6542.92
6/24/2013	36.67	6542.59
7/1/2013	37.00	6542.26
7/8/2013	37.36	6541.90
7/15/2013	37.61	6541.65
7/22/2013	37.74	6541.52
7/29/2013	37.85	6541.41
8/26/2013	38.17	6541.09
9/23/2013	38.24	6541.02
10/28/2013	37.81	6541.45
11/25/2013	37.34	6541.92
12/12/2013	37.02	6542.24
12/23/2013	36.83	6542.43

SO

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	38.50	6540.29
1/7/2013	38.26	6540.53
1/14/2013	38.47	6540.32
1/21/2013	38.43	6540.36
1/28/2013	38.10	6540.69
2/4/2013	38.10	6540.69
2/11/2013	37.96	6540.83
2/18/2013	38.92	6539.87
2/25/2013	38.93	6539.86
3/4/2013	37.62	6541.17
3/11/2013	37.78	6541.01
3/18/2013	37.65	6541.14
3/25/2013	37.67	6541.12
4/1/2013	37.48	6541.31
4/8/2013	37.10	6541.69
4/15/2013	37.07	6541.72
4/22/2013	37.02	6541.77
4/29/2013	35.83	6542.96
5/6/2013	37.03	6541.76
5/13/2013	36.84	6541.95
5/20/2013	36.73	6542.06
5/28/2013	36.50	6542.29
6/3/2013	36.45	6542.34
6/10/2013	36.67	6542.12
6/17/2013	36.75	6542.04
6/24/2013	37.33	6541.46
7/1/2013	37.63	6541.16
7/8/2013	37.90	6540.89
7/15/2013	38.09	6540.70
7/22/2013	38.22	6540.57
7/29/2013	38.25	6540.54
8/26/2013	38.41	6540.38
9/23/2013	38.80	6539.99
10/28/2013	38.38	6540.41
11/25/2013	37.73	6541.06
12/23/2013	37.15	6541.64

SP

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/2/2013	38.07	6540.59
1/7/2013	37.84	6540.82
1/14/2013	38.02	6540.64
1/21/2013	38.00	6540.66
1/28/2013	37.71	6540.95
2/4/2013	37.69	6540.97
2/11/2013	37.57	6541.09
2/18/2013	37.52	6541.14
2/25/2013	37.58	6541.08
3/4/2013	37.25	6541.41
3/11/2013	37.37	6541.29
3/18/2013	37.24	6541.42
3/25/2013	37.27	6541.39
4/1/2013	37.05	6541.61
4/8/2013	36.74	6541.92
4/15/2013	36.66	6542.00
4/22/2013	36.58	6542.08
4/29/2013	36.43	6542.23
5/6/2013	36.44	6542.22
5/13/2013	36.41	6542.25
5/20/2013	36.34	6542.32
5/28/2013	36.15	6542.51
6/3/2013	36.21	6542.45
6/10/2013	36.24	6542.42
6/17/2013	36.28	6542.38
6/24/2013	36.95	6541.71
7/1/2013	37.28	6541.38
7/8/2013	37.48	6541.18
7/15/2013	37.72	6540.94
7/22/2013	37.85	6540.81
7/29/2013	37.95	6540.71
8/26/2013	38.25	6540.41
9/23/2013	38.38	6540.28
10/28/2013	36.98	6541.68
11/25/2013	37.34	6541.32
12/23/2013	36.69	6541.97

ST

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/23/2013	48.35	6530.96

SV

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/23/2013	37.96	6541.29

SZ

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/16/2013	35.84	6545.63
12/12/2013	35.25	6546.22

T

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/20/2013	57.86	6521.37

T2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/22/2013	115.44	6549.38

T4

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/1/2013	112.85	6544.89

T12

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/1/2013	87.27	6569.96

T21

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/1/2013	118.88	6551.12

W

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	40.59	6531.55

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)	Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
	X										
1/28/2013	22.71	6548.90									
2/11/2013	22.56	6549.05									
2/25/2013	22.42	6549.19									
3/25/2013	22.33	6549.28									
4/19/2013	22.27	6549.34									
4/29/2013	21.95	6549.66									
5/28/2013	21.70	6549.91									
6/24/2013	22.58	6549.03									
7/8/2013	23.04	6548.57									
10/31/2013	22.10	6549.51									

* Drawdown Tube Pressure, # Transducer Reading

X - X

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0481		
5/10/2013	92.60	6475.40
0483		
11/14/2013	34.88	6527.78
0490		
3/4/2013	35.68	6526.74
7/8/2013	38.00	6524.42
11/4/2013	34.60	6527.82
11/22/2013	40.30	6522.12
12/11/2013	36.35	6526.07
0491		
12/11/2013	37.60	6525.02
0496		
3/6/2013	51.73	6510.79
11/14/2013	51.00	6511.52
12/12/2013	50.35	6512.17
0497		
3/6/2013	50.72	6511.90
6/17/2013	52.96	6509.66
11/14/2013	49.75	6512.87
12/12/2013	49.95	6512.67
0498		
11/14/2013	52.10	6508.49
12/12/2013	52.07	6508.52
0688		
3/4/2013	57.88	6504.74
10/29/2013	56.83	6505.79
12/12/2013	56.39	6506.23
0802		
1/14/2013	37.18	6525.54
1/28/2013	35.08	6527.64
2/4/2013	35.17	6527.55
2/25/2013	53.10	6509.62
3/4/2013	84.60	6478.12
3/25/2013	85.00	6477.72
4/1/2013	81.93	6480.79
4/29/2013	87.50	6475.22
7/22/2013	88.48	6474.24
0804		
2/19/2013	42.20	6519.80
0844		
2/5/2013	36.00	6520.13
8/15/2013	36.30	6519.83
12/12/2013	36.23	6519.90
0845		
2/5/2013	34.40	6522.65
8/15/2013	3718.00	2839.05
12/12/2013	34.12	6522.93
AW		
12/9/2013	32.00	6531.43
12/11/2013	31.99	6531.44
CW44		
3/6/2013	54.70	6506.04
11/14/2013	52.73	6508.01
12/11/2013	52.68	6508.06
Q1		
11/20/2013	---	---
Q2		
11/20/2013	53.04	6508.64
Q3		
12/19/2013	50.91	6508.83
Q9		
11/20/2013	51.59	6509.74
Q16		
11/19/2013	50.52	6512.76
Q29		
12/19/2013	52.39	6514.07
Sub1		
4/30/2013	32.28	6528.72
Sub3		
4/30/2013	27.38	6529.69

* Drawdown Tube Pressure, # Transducer Reading

0481 - Sub3

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0520		
12/11/2013	48.49	6537.53
0521		
1/14/2013	46.70	6537.74
5/13/2013	49.58	6534.86
7/9/2013	52.98	6531.46
0522		
1/14/2013	46.10	6534.43
5/13/2013	47.11	6533.42
7/9/2013	44.58	6535.95
0538		
3/18/2013	71.69	6477.25
12/12/2013	68.86	6480.08
0539		
12/12/2013	16.74	6538.58
0540		
5/3/2013	61.91	6494.00
11/14/2013	59.15	6496.76
12/12/2013	58.96	6496.95
0541		
8/8/2013	88.90	6466.72
12/12/2013	88.33	6467.29
0551		
2/6/2013	99.61	6447.69
8/8/2013	99.20	6448.10
12/12/2013	97.80	6449.50
0553		
2/6/2013	104.60	6442.88
8/8/2013	104.60	6442.88
12/12/2013	103.45	6444.03
0554		
2/6/2013	106.58	6440.59
8/8/2013	106.40	6440.77
12/12/2013	104.76	6442.41
0555		
2/5/2013	43.14	6511.20
8/15/2013	42.70	6511.64
0556		
2/5/2013	52.28	6500.94
8/15/2013	50.10	6503.12
0557		
2/5/2013	43.24	6508.03
8/15/2013	43.20	6508.07
0631		
3/6/2013	89.70	6451.40
12/12/2013	88.38	6452.72
0632		
3/6/2013	89.50	6451.80
12/12/2013	88.13	6453.17
0634		
11/23/2013	70.50	6489.57
12/12/2013	69.00	6491.07
0638		
12/11/2013	42.67	6542.89
0639		
1/14/2013	50.90	6536.98
5/13/2013	54.10	6533.78
0640		
12/11/2013	50.00	6529.97
0644		
12/12/2013	72.40	6471.50
0646		
12/12/2013	77.56	6465.79
0647		
2/6/2013	105.00	6446.91
8/8/2013	104.40	6447.51
12/12/2013	102.72	6449.19
0648		
3/6/2013	120.00	6427.79
0649		
2/6/2013	103.21	6440.08
3/6/2013	103.16	6440.13
8/15/2013	104.90	6438.39
12/12/2013	101.71	6441.58
0650		
2/6/2013	83.74	6463.37
8/15/2013	83.90	6463.21
12/11/2013	83.78	6463.33
0652		
12/12/2013	86.26	6451.89
0653		
6/17/2013	70.15	6474.82
11/14/2013	68.44	6476.53
12/12/2013	68.11	6476.86
0654		
3/6/2013	71.40	6479.10
12/12/2013	71.55	6478.95
0657		
5/13/2013	99.31	6452.50
8/8/2013	97.70	6454.11
12/12/2013	97.13	6454.68
0658		
2/6/2013	107.48	6442.70
10/29/2013	105.65	6444.53
12/12/2013	104.93	6445.25
0659		
12/12/2013	67.77	6492.40
0681		
3/18/2013	63.40	6497.12
0683		
3/19/2013	88.45	6467.59
0685		
12/12/2013	93.70	6462.87
0687		
12/12/2013	92.75	6463.21
0846		
2/19/2013	45.00	6503.92
10/29/2013	44.80	6504.12
12/12/2013	44.84	6504.08
0855		
2/19/2013	88.41	6452.70
12/12/2013	86.88	6454.23
0862		
1/14/2013	57.28	6498.90
5/3/2013	57.81	6498.37
12/12/2013	55.33	6500.85
0864		
2/25/2013	70.81	6475.91
0866		
5/3/2013	60.06	6498.06

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
0867		
12/12/2013	60.00	6495.90
0869		
3/18/2013	73.08	6471.41
6/17/2013	72.13	6472.36
12/12/2013	69.92	6474.57
0876		
12/12/2013	69.94	6474.32
0879		
12/12/2013	69.31	6475.24
0881		
2/8/2013	71.66	6493.38
12/12/2013	70.63	6494.41
0882		
2/11/2013	63.08	6498.08
8/8/2013	63.80	6497.36
0883		
3/18/2013	60.00	6497.13
12/12/2013	59.25	6497.88
0884		
2/8/2013	70.35	6495.75
8/8/2013	71.50	6494.60
0885		
3/19/2013	61.81	6502.83
8/8/2013	63.50	6501.14
12/12/2013	59.94	6504.70
0886		
2/8/2013	66.47	6498.08
11/15/2013	55.57	6508.98
12/12/2013	64.48	6500.07
0887		
3/19/2013	56.64	6511.09
0888		
3/19/2013	74.36	6482.97
8/8/2013	63.50	6493.83
12/12/2013	74.43	6482.90
0890		
12/12/2013	71.32	6487.11
0893		
2/11/2013	66.48	6497.49
8/8/2013	67.25	6496.72
12/12/2013	65.08	6498.89
0935		
12/11/2013	89.24	6468.88
0994		
4/4/2013	92.69	6462.31
5/7/2013	92.51	6462.49
6/12/2013	92.68	6462.32
7/10/2013	92.53	6462.47
10/30/2013	91.18	6463.82
R1		
8/14/2013	53.39	6501.73
R2		
8/9/2013	52.29	6501.87
R3		
8/12/2013	53.29	6502.44
R4		
8/6/2013	55.94	6502.84
R5		
8/16/2013	54.79	6502.96
R6		
8/16/2013	60.92	6498.72
11/19/2013	60.75	6498.89
R7		
8/16/2013	54.21	6500.60
R8		
8/16/2013	53.47	6500.69
R9		
11/13/2013	54.74	6501.01
R10		
11/13/2013	55.86	6499.36
R11		
11/13/2013	59.71	6498.74
R12		
11/14/2013	59.23	6497.72
R13		
11/14/2013	59.43	6497.46
R14		
11/14/2013	59.22	6497.57
R15		
11/14/2013	56.46	6499.77
R16		
11/14/2013	68.19	6486.30
R17		
11/18/2013	58.62	6496.60
R18		
11/18/2013	60.37	6495.63
R19		
11/18/2013	60.42	6496.08
R20		
11/18/2013	59.68	6496.66
R21		
11/18/2013	58.86	6496.71
R22		
11/19/2013	61.79	6495.35
R23		
11/14/2013	62.02	6493.73
R47		
12/20/2013	75.59	6471.58
R57		
12/20/2013	74.67	6472.40

* Drawdown Tube Pressure, # Transducer Reading

0867 - R57

TABLE A.2-1 WATER LEVELS FOR CHINLE AQUIFERS

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

0481

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/10/2013	92.60	6475.40

0483

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/14/2013	34.88	6527.78

0493

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/8/2013	89.36	6470.92
7/8/2013	67.42	6492.86
12/11/2013	68.40	6491.88

0494

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/8/2013	33.21	6526.93
7/8/2013	33.56	6526.58
12/11/2013	34.00	6526.14

0498

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/14/2013	52.10	6508.49
12/12/2013	52.07	6508.52

0538

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/18/2013	71.69	6477.25
12/12/2013	68.86	6480.08

0539

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/12/2013	16.74	6538.58

0653

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/17/2013	70.15	6474.82
11/14/2013	68.44	6476.53
12/12/2013	68.11	6476.86

0850

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	51.99	6497.16

0853

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	75.75	6465.63

0859

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/19/2013	58.64	6494.12
12/11/2013	58.50	6494.26

0927

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	45.30	6549.70
12/11/2013	45.30	6549.70

0929

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	122.20	6470.37
2/25/2013	57.97	6534.60
2/25/2013	58.10	6534.47
3/25/2013	59.58	6532.99
4/29/2013	56.45	6536.12
5/28/2013	48.92	6543.65
6/24/2013	48.18	6544.39

0930

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	110.13	6488.41

0931

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	75.20	6535.36

0994

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
4/4/2013	92.69	6462.31
5/7/2013	92.51	6462.49
6/12/2013	92.68	6462.32
7/10/2013	92.53	6462.47
10/30/2013	91.18	6463.82

ACW

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/9/2013	73.20	6490.60
12/11/2013	73.36	6490.44

AW

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/9/2013	32.00	6531.43
12/11/2013	31.99	6531.44

CE1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	21.45	6548.74

CE2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/25/2013	67.61	6508.74

CE5

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	43.47	6525.08
2/25/2013	44.18	6524.37
2/25/2013	44.00	6524.55
3/25/2013	44.05	6524.50
4/29/2013	42.68	6525.87
5/28/2013	42.57	6525.98
6/24/2013	44.12	6524.43

CE6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	56.95	6508.24
2/25/2013	56.00	6509.19
2/25/2013	56.81	6508.38
3/25/2013	57.30	6507.89
4/29/2013	56.40	6508.79
5/28/2013	52.45	6512.74
6/24/2013	86.27	6478.92

CE7

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	82.10	6493.89
2/25/2013	82.23	6493.76
3/25/2013	79.28	6496.71
4/29/2013	69.24	6506.75
5/28/2013	71.40	6504.59
6/24/2013	57.87	6518.12
7/8/2013	59.24	6516.75
12/11/2013	36.70	6539.29

CE8

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/27/2013	39.36	6530.34
9/4/2013	38.45	6531.25
12/11/2013	41.23	6528.47

CE9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
2/27/2013	34.31	6528.81
12/11/2013	34.95	6528.17

CE10

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
9/4/2013	41.11	6529.75
12/11/2013	43.80	6527.06

CE11

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	45.00	6520.42
2/25/2013	45.74	6519.68
2/25/2013	45.90	6519.52
3/25/2013	45.92	6519.50
4/29/2013	45.52	6519.90
5/28/2013	44.56	6520.86
6/24/2013	48.88	6516.54

CE12

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	54.00	6518.23
2/25/2013	54.30	6517.93
2/25/2013	54.61	6517.62
3/25/2013	44.82	6527.41
4/29/2013	55.00	6517.23
5/28/2013	42.42	6529.81
6/24/2013	78.72	6493.51

CE13

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	37.54	6537.10

CE14

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/5/2013	32.84	6536.61
9/4/2013	33.30	6536.15
12/11/2013	33.24	6536.21

CE15

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/5/2013	36.97	6529.11
9/4/2013	36.60	6529.48
12/11/2013	37.51	6528.57

CF1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/4/2013	128.64	6537.27

CF2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/4/2013	116.16	6550.00

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

CW1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	120.28	6464.94
2/25/2013	121.67	6463.55
2/27/2013	121.93	6463.29
3/25/2013	120.53	6464.69
4/29/2013	115.58	6469.64
5/28/2013	99.63	6485.59
6/24/2013	93.82	6491.40

CW2

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	130.08	6455.40
2/11/2013	131.90	6453.58
2/25/2013	131.90	6453.58
2/27/2013	132.56	6452.92
3/25/2013	43.60	6541.88
4/29/2013	126.55	6458.93
5/28/2013	99.80	6485.68
6/24/2013	94.18	6491.30
11/4/2013	106.60	6478.88

CW2-1

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	42.67	6542.81

CW3

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	53.60	6533.58
2/25/2013	53.14	6534.04
2/27/2013	53.22	6533.96
3/25/2013	53.35	6533.83
4/29/2013	52.62	6534.56
5/28/2013	52.30	6534.88
6/24/2013	52.82	6534.36
12/11/2013	53.09	6534.09

CW6

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	71.00	6504.64

CW9

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	56.43	6535.40

CW15

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	85.56	6465.76

CW17

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/24/2013	47.87	6541.45
11/26/2013	47.54	6541.78
12/11/2013	47.59	6541.73

CW18

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	54.68	6517.97
2/25/2013	29.53	6543.12
2/25/2013	29.60	6543.05
3/25/2013	33.38	6539.27
4/29/2013	29.62	6543.03
5/28/2013	20.30	6552.35
6/24/2013	19.12	6553.53
12/11/2013	36.05	6536.60

CW24

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	45.96	6542.71

CW26

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	91.10	6470.33

CW27

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	60.18	6502.70

CW28

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
1/28/2013	83.45	6488.23
2/25/2013	82.22	6489.46
2/25/2013	81.78	6489.90
3/25/2013	81.09	6490.59
4/29/2013	79.52	6492.16
5/28/2013	77.14	6494.54
6/24/2013	76.97	6494.71
12/11/2013	74.98	6496.70

CW29

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/19/2013	84.11	6468.11
6/17/2013	84.00	6468.22
12/11/2013	81.83	6470.39

CW31

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/3/2013	86.00	6474.26
12/11/2013	85.97	6474.29

CW32

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/3/2013	145.50	6421.78
12/11/2013	145.48	6421.80

CW33

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	105.34	6469.55

CW35

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	48.49	6542.68

CW36

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	77.35	6473.74

CW37

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	63.55	6487.62

CW40

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	42.17	6536.77

CW41

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/19/2013	86.20	6469.21
12/11/2013	86.04	6469.37

CW42

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
6/17/2013	76.92	6471.86
11/14/2013	75.25	6473.53
12/11/2013	74.94	6473.84

CW43

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	69.42	6479.37

CW44

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/6/2013	54.70	6506.04
11/14/2013	52.73	6508.01
12/11/2013	52.68	6508.06

CW45

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
3/6/2013	54.48	6506.83
6/17/2013	53.52	6507.79
11/14/2013	43.48	6517.83
12/11/2013	53.26	6508.05

CW50

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/26/2013	45.30	6543.26
12/11/2013	45.43	6543.13

CW52

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	66.54	6525.86

CW53

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
11/14/2013	75.35	6489.59
12/11/2013	30.17	6534.77

CW54

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/11/2013	24.20	6534.35

CW55

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/3/2013	53.00	6511.16
12/11/2013	54.65	6509.51

CW56

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/1/2013	45.43	6542.43
8/7/2013	45.50	6542.36

CW57

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/10/2013	45.81	6539.09

CW60

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/10/2013	42.45	6541.75

CW61

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/10/2013	41.39	6541.44

CW62

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
5/14/2013	37.41	6542.45

CW73

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
12/20/2013	49.45	6514.00

* Drawdown Tube Pressure, # Transducer Reading

CW1 - CW73

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

WATER LEVEL ELEVATION (FT-MSL) 3/10/2014

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
Q4		
12/19/2013	56.96	6503.36
R1		
8/14/2013	53.39	6501.73
R2		
8/9/2013	52.29	6501.87
R3		
8/12/2013	53.29	6502.44
R4		
8/6/2013	55.94	6502.84
R5		
8/16/2013	54.79	6502.96
R6		
8/16/2013	60.92	6498.72
11/19/2013	60.75	6498.89
R7		
8/16/2013	54.21	6500.60
R8		
8/16/2013	53.47	6500.69
R9		
11/13/2013	54.74	6501.01
R10		
11/13/2013	55.86	6499.36
R11		
11/13/2013	59.71	6498.74
R12		
11/14/2013	59.23	6497.72
R13		
11/14/2013	59.43	6497.46
R14		
11/14/2013	59.22	6497.57
R17		
11/18/2013	58.62	6496.60
R18		
11/18/2013	60.37	6495.63
R19		
11/18/2013	60.42	6496.08
R20		
11/18/2013	59.68	6496.66
R21		
11/18/2013	58.86	6496.71
R22		
11/19/2013	61.79	6495.35
R47		
12/20/2013	75.59	6471.58
R57		
12/20/2013	74.67	6472.40
WCW		
12/11/2013	76.60	6490.77
WR25		
6/24/2013	43.50	6542.96
12/11/2013	43.40	6543.06
Y1		
12/19/2013	68.28	6493.16
Y3		
12/20/2013	---	---
Y13		
11/20/2013	67.16	6493.68
Y22		
11/20/2013	62.82	6498.87
Y30		
12/19/2013	59.61	6500.44
Y33		
11/19/2013	52.36	6510.86
Y34		
11/20/2013	59.79	6501.13

* Drawdown Tube Pressure, # Transducer Reading

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

WATER LEVEL ELEVATION (FT-MSL) 3/12/2014

Date	Water Level (ft-MP)	Water Level Elevation (ft+MSL)
#2 Deepwell		
11/4/2013	207.11	6368.55
0907		
12/11/2013	121.75	6423.85
0928		
12/11/2013	129.75	6467.85
0938		
12/11/2013	147.65	6421.15
0943		
1/28/2013	136.50	6419.41
2/25/2013	136.68	6419.23
3/6/2013	136.80	6419.11
3/25/2013	137.50	6418.41
4/29/2013	142.80	6413.11
5/28/2013	143.05	6412.86
6/24/2013	143.98	6411.93
0951R		
1/28/2013	154.77	6422.01
2/25/2013	160.80	6415.98
3/6/2013	160.00	6416.78
3/25/2013	160.67	6416.11
4/29/2013	159.40	6417.38
5/28/2013	147.40	6429.38
6/24/2013	132.75	6444.03

* Drawdown Tube Pressure, # Transducer Reading

APPENDIX B

WATER QUALITY

TABLE OF CONTENTS

GROUND-WATER MONITORING FOR HOMESTAKE'S GRANTS PROJECT

APPENDIX B

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
CN1	11/12/2013	ENER	---	---	---	---	---	---	1360	8800	18300	* 21640	---
CS1	11/14/2013	ENER	---	---	---	---	---	---	521	4130	8050	* 10030	---
CS2	11/14/2013	ENER	---	---	---	---	---	---	546	3330	6770	* 9497	---
EC8	11/21/2013	ENER	---	---	---	---	---	---	332	3210	9360	* 10400	---
EC19	11/21/2013	ENER	---	---	---	---	---	---	287	2500	6870	* 7610	---
EC20	6/11/2013	ENER	---	---	---	---	---	---	335	3900	11100	* 13900	---
ED4	11/21/2013	ENER	---	---	---	---	---	---	328	2750	7520	* 8600	---
ED6	11/21/2013	ENER	---	---	---	---	---	---	429	3740	10300	* 11700	---
ED7	11/21/2013	ENER	---	---	---	---	---	---	370	4050	11500	* 11500	---
EE2	11/12/2013	ENER	1.30	< 0.500	11.0	3030	978	1240	293	2630	6990	* 10480	1.10
EG2	7/12/2013	ENER	---	---	---	---	---	---	287	1730	4270	* 5890	---
EG7	6/11/2013	ENER	---	---	---	---	---	---	235	2340	6270	* 9300	---
EG13	6/11/2013	ENER	---	---	---	---	---	---	211	2060	5290	* 8200	---
EG16	11/21/2013	ENER	---	---	---	---	---	---	286	2620	7040	* 8250	---
EH18	7/11/2013	ENER	---	---	---	---	---	---	160	1240	3140	* 9580	---
EH22	7/11/2013	ENER	---	---	---	---	---	---	352	2710	8120	* 10800	---
EH25	6/11/2013	ENER	---	---	---	---	---	---	454	3260	8370	* 12600	---
EH27	11/21/2013	ENER	---	---	---	---	---	---	234	2230	5440	* 6790	---
EH28	7/11/2013	ENER	---	---	---	---	---	---	287	2390	7170	* 4770	---
EN1	11/12/2013	ENER	---	---	---	---	---	---	770	6480	15000	* 19330	---
EN2	11/21/2013	ENER	---	---	---	---	---	---	139	1210	2970	* 3470	---
EN9	11/21/2013	ENER	---	---	---	---	---	---	303	2340	6300	* 7120	---
EN10	11/21/2013	ENER	---	---	---	---	---	---	365	3400	9460	* 10100	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
EN11	11/21/2013	ENER	---	---	---	---	---	---	295	2540	6610	* 7350	---
EN19	11/21/2013	ENER	---	---	---	---	---	---	603	4650	8830	* 10600	---
ES2	11/19/2013	ENER	---	---	---	---	---	---	531	3060	6840	* 7020	---
ES3	11/13/2013	ENER	---	---	---	---	---	---	317	1900	4980	* 5720	---
ES4	4/30/2013	ENER	---	---	---	---	---	---	324	2040	5010	* 7530	---
NE Tails	3/21/2013	HMC	---	---	---	---	---	---	---	2450	6790	1080	---
	10/8/2013	ENER	5.00	4.00	12.0	2560	---	---	323	2770	7390	---	---
	10/17/2013	ENER	3.70	3.30	10.8	2720	1230	962	337	2720	7460	---	1.01
NE1	11/12/2013	ENER	3.90	< 0.500	4.40	700	384	6.00	80.0	931	1850	* 2759	1.09
NE6	7/11/2013	ENER	---	---	---	---	---	---	100.0	934	2720	* 4010	---
NE9	7/11/2013	ENER	2.00	1.80	11.4	3180	1270	638	530	3570	8760	* 11300	1.06
NW Tails	3/21/2013	HMC	---	---	---	---	---	---	---	2920	8440	9250	---
	10/17/2013	ENER	8.60	6.50	6.50	2120	1070	756	276	2120	6020	---	0.986
SE Tails	3/21/2013	HMC	---	---	---	---	---	---	---	2510	7170	9631	---
	10/17/2013	ENER	3.50	3.60	11.2	2600	1230	979	332	2720	7260	---	0.959
SW Tails	3/21/2013	HMC	---	---	---	---	---	---	---	1680	4300	6623	---
	10/17/2013	ENER	7.90	6.40	7.30	2240	1080	871	265	2240	6270	---	0.977
SW1	11/13/2013	ENER	---	---	---	---	---	---	363	3970	8090	* 10850	---
SW2	11/21/2013	ENER	---	---	---	---	---	---	975	4780	9720	* 10100	---
WA1	7/10/2013	ENER	---	---	---	---	---	---	387	3230	6310	---	---
WA2	7/10/2013	ENER	---	---	---	---	---	---	887	5330	13200	---	---
WA3	11/21/2013	ENER	---	---	---	---	---	---	295	1940	5150	* 6170	---
WA4	7/8/2013	ENER	---	---	---	---	---	---	195	1230	3160	* 4820	---
WA6	3/27/2013	ENER	---	---	---	---	---	---	265	2230	5960	* 8600	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
WA7	6/10/2013	ENER	---	---	---	---	---	---	430	3200	8350	* 11200	---
WA10	3/27/2013	ENER	---	---	---	---	---	---	198	1300	3060	* 4870	---
WA11	6/10/2013	ENER	---	---	---	---	---	---	221	1830	4910	* 7270	---
WA12	6/10/2013	ENER	---	---	---	---	---	---	347	2570	6630	* 9060	---
WA13	6/10/2013	ENER	---	---	---	---	---	---	202	1760	4610	* 6320	---
WB2	6/11/2013	ENER	---	---	---	---	---	---	416	3110	8300	* 11800	---
WB3	7/9/2013	ENER	---	---	---	---	---	---	204	1570	3840	---	---
WB4	7/9/2013	ENER	---	---	---	---	---	---	184	1060	2460	* 3550	---
WB5	6/11/2013	ENER	---	---	---	---	---	---	448	3320	8820	* 12200	---
WB7	4/29/2013	ENER	---	---	---	---	---	---	258	1730	4640	* 7000	---
WB8	6/10/2013	ENER	---	---	---	---	---	---	252	1980	5600	* 8020	---
WB10	6/10/2013	ENER	---	---	---	---	---	---	352	3000	7780	* 11500	---
WB11	6/10/2013	ENER	---	---	---	---	---	---	267	2120	5570	* 8280	---
WB17	6/11/2013	ENER	---	---	---	---	---	---	219	1510	3840	* 6030	---
WC1	7/10/2013	ENER	---	---	---	---	---	---	337	2010	4570	---	---
WC3	6/10/2013	ENER	---	---	---	---	---	---	253	1680	4050	* 6760	---
WC4	7/9/2013	ENER	---	---	---	---	---	---	284	2110	4420	* 5790	---
WC5	7/8/2013	ENER	---	---	---	---	---	---	405	2310	6010	* 8020	---
WC10	6/10/2013	ENER	---	---	---	---	---	---	189	1430	5620	* 8820	---
WC11	6/10/2013	ENER	---	---	---	---	---	---	278	2480	6670	* 10100	---
WC12	7/8/2013	ENER	---	---	---	---	---	---	374	1850	4030	* 5560	---
WC13	7/9/2013	ENER	---	---	---	---	---	---	409	2770	5630	* 7740	---
WC14	3/27/2013	ENER	---	---	---	---	---	---	159	1070	2870	* 4710	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
WC15	7/10/2013	ENER	---	---	---	---	---	---	222	1620	3290	---	---
WC18	6/10/2013	ENER	---	---	---	---	---	---	362	2780	7570	* 9740	---
WC19	7/9/2013	ENER	---	---	---	---	---	---	166	1230	3200	* 4850	---
WC20	7/8/2013	ENER	---	---	---	---	---	---	290	1930	5160	* 7910	---
WC21	11/21/2013	ENER	---	---	---	---	---	---	419	2990	8720	* 11670	---
WC22	6/10/2013	ENER	---	---	---	---	---	---	194	1460	3670	* 5810	---
WC25	3/27/2013	ENER	---	---	---	---	---	---	614	4220	11800	* 15400	---
WD3	7/10/2013	ENER	---	---	---	---	---	---	620	2230	5010	---	---
WD4	11/21/2013	ENER	---	---	---	---	---	---	289	2230	5930	* 7410	---
WD5	7/9/2013	ENER	---	---	---	---	---	---	340	2740	8350	* 12200	---
WD6	6/10/2013	ENER	---	---	---	---	---	---	592	4160	10300	* 14000	---
WD7	11/21/2013	ENER	---	---	---	---	---	---	528	3940	11100	* 4270	---
WD8	6/11/2013	ENER	---	---	---	---	---	---	370	2720	7360	* 10600	---
WD10	7/9/2013	ENER	---	---	---	---	---	---	231	1870	4720	* 15400	---
WE2	7/9/2013	ENER	---	---	---	---	---	---	622	3050	6700	* 9830	---
WE3	3/27/2013	ENER	---	---	---	---	---	---	212	1430	3650	* 5560	---
WE5	6/11/2013	ENER	---	---	---	---	---	---	348	2630	6560	* 9430	---
WE6	4/29/2013	ENER	---	---	---	---	---	---	282	2170	5560	* 7960	---
WE8	7/10/2013	ENER	---	---	---	---	---	---	283	1750	3840	---	---
WE14	7/10/2013	ENER	---	---	---	---	---	---	227	1300	3100	* 4170	---
WE15	7/10/2013	ENER	---	---	---	---	---	---	688	3550	10000	---	---
WE16	6/10/2013	ENER	---	---	---	---	---	---	250	2020	3670	* 5450	---
WE17	7/10/2013	ENER	---	---	---	---	---	---	189	1370	3250	---	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
WE18	7/9/2013	ENER	---	---	---	---	---	---	243	1360	2930	* 3810	---
WF1	7/9/2013	ENER	---	---	---	---	---	---	260	1440	3370	* 4730	---
WF2	3/27/2013	ENER	---	---	---	---	---	---	380	1840	3900	* 5730	---
WF3	6/11/2013	ENER	---	---	---	---	---	---	267	1840	5060	* 7630	---
WF4	7/11/2013	ENER	---	---	---	---	---	---	116	1790	4830	* 6510	---
WF5	6/11/2013	ENER	---	---	---	---	---	---	305	2360	6370	* 9180	---
WF6	7/8/2013	ENER	---	---	---	---	---	---	260	1980	5510	* 7720	---
WF8	7/12/2013	ENER	---	---	---	---	---	---	241	1390	3400	---	---
WF12	3/27/2013	ENER	---	---	---	---	---	---	281	1700	3950	* 5510	---
WF14	7/8/2013	ENER	---	---	---	---	---	---	237	1300	3080	* 4680	---
WF15	4/29/2013	ENER	---	---	---	---	---	---	228	1710	4520	* 6740	---
WF16	7/8/2013	ENER	---	---	---	---	---	---	264	1930	4620	* 6500	---
WF17	7/8/2013	ENER	---	---	---	---	---	---	300	1730	3990	* 6080	---
WF18	7/9/2013	ENER	---	---	---	---	---	---	220	1270	3130	* 4680	---
WN1	11/12/2013	ENER	---	---	---	---	---	---	255	1660	3670	* 5302	---
WN2	11/12/2013	ENER	---	---	---	---	---	---	189	1160	2890	* 4693	---
WS1	11/13/2013	HMC	---	---	---	---	---	---	---	---	---	22510	---
WS5	11/21/2013	ENER	---	---	---	---	---	---	236	1980	5440	* 6420	---
WW1	11/12/2013	ENER	---	---	---	---	---	---	1070	5500	12300	* 15880	---

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
CN1	11/12/2013	ENER	---	50.0	91.5	4.20	---	---	---	---	---
CS1	11/14/2013	ENER	---	15.0	16.3	0.0110	---	---	---	---	---
CS2	11/14/2013	ENER	---	4.45	14.1	0.0050	---	---	---	---	---
EC8	11/21/2013	ENER	---	12.8	43.8	0.114	---	---	---	---	---
EC19	11/21/2013	ENER	---	8.18	26.6	0.0380	---	---	---	---	---
EC20	6/11/2013	ENER	---	19.6	57.6	0.101	---	---	---	---	---
ED4	11/21/2013	ENER	---	9.98	32.7	0.136	---	---	---	---	---
ED6	11/21/2013	ENER	---	19.1	41.7	0.130	---	---	---	---	---
ED7	11/21/2013	ENER	---	38.7	55.4	0.193	---	---	---	---	---
EE2	11/12/2013	ENER	9.99	5.68	29.8	0.110	0.600	34.0	---	---	---
EG2	7/12/2013	ENER	---	1.96	7.43	0.0670	---	---	---	---	---
EG7	6/11/2013	ENER	---	7.44	26.2	0.0550	---	---	---	---	---
EG13	6/11/2013	ENER	---	7.07	19.1	0.0520	---	---	---	---	---
EG16	11/21/2013	ENER	---	10.1	28.7	0.0300	---	---	---	---	---
EH18	7/11/2013	ENER	---	2.79	6.60	0.0270	---	---	---	---	---
EH22	7/11/2013	ENER	---	9.33	25.8	0.127	---	---	---	---	---
EH25	6/11/2013	ENER	---	7.13	31.3	0.0460	---	---	---	---	---
EH27	11/21/2013	ENER	---	6.12	22.5	0.0440	---	---	---	---	---
EH28	7/11/2013	ENER	---	12.9	26.1	0.0450	---	---	---	---	---
EN1	11/12/2013	ENER	---	20.3	63.4	0.480	---	---	---	---	---
EN2	11/21/2013	ENER	---	1.27	5.23	0.0510	---	---	---	---	---
EN9	11/21/2013	ENER	---	2.78	18.7	0.0180	---	---	---	---	---
EN10	11/21/2013	ENER	---	13.4	39.7	0.0740	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
EN11	11/21/2013	ENER	---	11.3	27.3	0.0670	---	---	---	---	---
EN19	11/21/2013	ENER	---	11.8	48.2	0.0590	---	---	---	---	---
ES2	11/19/2013	ENER	---	12.0	26.2	0.0300	---	---	---	---	---
ES3	11/13/2013	ENER	---	0.324	14.9	0.0720	---	---	---	---	---
ES4	4/30/2013	ENER	---	4.86	15.1	0.0490	---	---	---	---	---
NE Tails	3/21/2013	HMC	---	7.02	25.2	0.168	---	---	---	---	---
	10/8/2013	ENER	---	10.4	28.2	0.105	1.30	122	-0.0200	0.130	---
	10/17/2013	ENER	9.82	10.1	29.3	0.125	1.70	147	---	---	---
NE1	11/12/2013	ENER	8.06	0.109	0.420	0.0180	0.300	37.0	---	---	---
NE6	7/11/2013	ENER	---	0.892	2.47	0.0260	---	---	---	---	---
NE9	7/11/2013	ENER	9.55	9.57	22.4	0.0350	0.700	114	---	---	---
NW Tails	3/21/2013	HMC	---	10.8	31.6	0.0760	---	---	---	---	---
	10/17/2013	ENER	9.78	5.66	21.1	0.164	1.10	66.0	---	---	---
SE Tails	3/21/2013	HMC	---	8.50	25.4	0.0670	---	---	---	---	---
	10/17/2013	ENER	9.82	5.87	18.9	0.0470	1.60	135	---	---	---
SW Tails	3/21/2013	HMC	---	3.28	10.9	0.118	---	---	---	---	---
	10/17/2013	ENER	9.83	6.62	24.4	0.206	1.50	85.0	---	---	---
SW1	11/13/2013	ENER	---	23.3	36.3	0.0330	---	---	---	---	---
SW2	11/21/2013	ENER	---	7.07	23.7	12.3	---	---	---	---	---
WA1	7/10/2013	ENER	---	35.6	13.9	4.96	---	---	---	---	---
WA2	7/10/2013	ENER	---	16.9	23.9	0.667	---	---	---	---	---
WA3	11/21/2013	ENER	---	4.48	15.0	0.186	---	---	---	---	---
WA4	7/8/2013	ENER	---	1.38	5.92	0.185	---	---	---	---	---
WA6	3/27/2013	ENER	---	8.75	22.7	0.156	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
WA7	6/10/2013	ENER	---	9.73	29.1	0.720	---	---	---	---	---
WA10	3/27/2013	ENER	---	1.82	5.86	0.0450	---	---	---	---	---
WA11	6/10/2013	ENER	---	6.10	17.2	0.0750	---	---	---	---	---
WA12	6/10/2013	ENER	---	7.77	23.3	0.317	---	---	---	---	---
WA13	6/10/2013	ENER	---	5.10	15.8	0.141	---	---	---	---	---
WB2	6/11/2013	ENER	---	8.23	29.4	0.218	---	---	---	---	---
WB3	7/9/2013	ENER	---	5.20	12.9	1.03	---	---	---	---	---
WB4	7/9/2013	ENER	---	1.44	2.04	0.0240	---	---	---	---	---
WB5	6/11/2013	ENER	---	8.77	31.7	0.253	---	---	---	---	---
WB7	4/29/2013	ENER	---	2.96	12.6	0.280	---	---	---	---	---
WB8	6/10/2013	ENER	---	4.44	17.0	0.142	---	---	---	---	---
WB10	6/10/2013	ENER	---	8.20	29.2	0.240	---	---	---	---	---
WB11	6/10/2013	ENER	---	5.23	19.5	0.190	---	---	---	---	---
WB17	6/11/2013	ENER	---	2.00	9.10	0.202	---	---	---	---	---
WC1	7/10/2013	ENER	---	5.47	9.01	0.117	---	---	---	---	---
WC3	6/10/2013	ENER	---	2.23	9.65	0.200	---	---	---	---	---
WC4	7/9/2013	ENER	---	11.0	6.28	1.47	---	---	---	---	---
WC5	7/8/2013	ENER	---	3.56	14.5	0.162	---	---	---	---	---
WC10	6/10/2013	ENER	---	5.80	19.6	0.190	---	---	---	---	---
WC11	6/10/2013	ENER	---	6.96	25.3	0.700	---	---	---	---	---
WC12	7/8/2013	ENER	---	1.79	9.74	0.0100	---	---	---	---	---
WC13	7/9/2013	ENER	---	12.2	9.13	1.41	---	---	---	---	---
WC14	3/27/2013	ENER	---	1.24	4.83	0.111	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
WC15	7/10/2013	ENER	---	7.22	3.21	0.457	---	---	---	---	---
WC18	6/10/2013	ENER	---	10.4	27.8	0.200	---	---	---	---	---
WC19	7/9/2013	ENER	---	1.68	8.17	0.182	---	---	---	---	---
WC20	7/8/2013	ENER	---	2.23	15.2	0.213	---	---	---	---	---
WC21	11/21/2013	ENER	---	9.96	25.3	0.432	---	---	---	---	---
WC22	6/10/2013	ENER	---	3.24	10.4	0.0900	---	---	---	---	---
WC25	3/27/2013	ENER	---	13.3	54.7	0.391	---	---	---	---	---
WD3	7/10/2013	ENER	---	3.91	3.16	0.166	---	---	---	---	---
WD4	11/21/2013	ENER	---	5.50	19.4	0.188	---	---	---	---	---
WD5	7/9/2013	ENER	---	9.83	35.5	0.317	---	---	---	---	---
WD6	6/10/2013	ENER	---	15.0	29.0	2.39	---	---	---	---	---
WD7	11/21/2013	ENER	---	16.0	50.9	0.172	---	---	---	---	---
WD8	6/11/2013	ENER	---	8.30	22.7	0.215	---	---	---	---	---
WD10	7/9/2013	ENER	---	3.65	16.4	0.159	---	---	---	---	---
WE2	7/9/2013	ENER	---	1.85	22.0	0.152	---	---	---	---	---
WE3	3/27/2013	ENER	---	2.63	9.56	0.0560	---	---	---	---	---
WE5	6/11/2013	ENER	---	5.74	20.8	0.153	---	---	---	---	---
WE6	4/29/2013	ENER	---	4.86	18.0	0.120	---	---	---	---	---
WE8	7/10/2013	ENER	---	2.26	6.89	0.678	---	---	---	---	---
WE14	7/10/2013	ENER	---	0.876	4.24	0.0580	---	---	---	---	---
WE15	7/10/2013	ENER	---	1.69	23.4	0.178	---	---	---	---	---
WE16	6/10/2013	ENER	---	3.17	10.6	0.0400	---	---	---	---	---
WE17	7/10/2013	ENER	---	1.76	5.72	0.173	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
WE18	7/9/2013	ENER	---	1.77	4.12	0.0190	---	---	---	---	---
WF1	7/9/2013	ENER	---	1.05	6.94	0.102	---	---	---	---	---
WF2	3/27/2013	ENER	---	1.28	7.18	0.0460	---	---	---	---	---
WF3	6/11/2013	ENER	---	4.42	14.5	0.173	---	---	---	---	---
WF4	7/11/2013	ENER	---	5.47	16.3	0.0900	---	---	---	---	---
WF5	6/11/2013	ENER	---	8.18	23.7	0.198	---	---	---	---	---
WF6	7/8/2013	ENER	---	7.55	22.4	0.116	---	---	---	---	---
WF8	7/12/2013	ENER	---	1.01	5.20	0.0580	---	---	---	---	---
WF12	3/27/2013	ENER	---	2.93	7.91	0.113	---	---	---	---	---
WF14	7/8/2013	ENER	---	1.18	4.71	0.394	---	---	---	---	---
WF15	4/29/2013	ENER	---	3.96	15.0	0.153	---	---	---	---	---
WF16	7/8/2013	ENER	---	3.94	15.4	0.101	---	---	---	---	---
WF17	7/8/2013	ENER	---	2.48	10.9	0.0980	---	---	---	---	---
WF18	7/9/2013	ENER	---	1.02	5.26	0.0970	---	---	---	---	---
WN1	11/12/2013	ENER	---	4.14	10.2	0.0620	---	---	---	---	---
WN2	11/12/2013	ENER	---	0.357	3.94	< 0.0050	---	---	---	---	---
WS5	11/21/2013	ENER	---	5.22	19.6	0.169	---	---	---	---	---
WW1	11/12/2013	ENER	---	14.4	30.5	1.90	---	---	---	---	---

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
East 1 Sump	3/6/2013	ENER	---	---	---	---	---	---	---	9260	23300	* 25870	---
East 2 Sump	3/6/2013	ENER	---	---	---	---	---	---	---	9080	21100	* 24330	---
East Reclaim	3/6/2013	ENER	---	---	---	---	---	---	---	5590	13500	* 16510	---
North 1 Sump	3/6/2013	ENER	---	---	---	---	---	---	---	6760	15400	* 18290	---
South 1 Sump	3/6/2013	ENER	---	---	---	---	---	---	---	4360	8410	* 10800	---
West 1 Sump	3/6/2013	ENER	---	---	---	---	---	---	---	4570	9090	* 11690	---
West Reclaim	3/6/2013	ENER	---	---	---	---	---	---	---	2030	4940	* 7149	---

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
East 1 Sump	3/6/2013	ENER	---	44.6	93.0	0.359	---	---	---	---	---
East 2 Sump	3/6/2013	ENER	---	40.3	78.6	0.385	---	---	---	---	---
East Reclaim	3/6/2013	ENER	---	20.2	46.6	0.377	---	---	---	---	---
North 1 Sump	3/6/2013	ENER	---	30.4	56.3	0.435	---	---	---	---	---
South 1 Sump	3/6/2013	ENER	---	16.1	12.9	0.0140	---	---	---	---	---
West 1 Sump	3/6/2013	ENER	---	17.8	18.1	0.232	---	---	---	---	---
West Reclaim	3/6/2013	ENER	---	5.44	14.9	0.0150	---	---	---	---	---

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
E Coll Pond	2/5/2013	ENER	---	---	---	---	---	---	957	7500	13000	* 14910	---
	4/19/2013	ENER	---	---	---	---	---	---	856	6740	12000	* 14040	---
	10/16/2013	ENER	72.1	90.1	6.20	1650	340	74.0	491	3290	5970	* 9474	0.918
	11/13/2013	ENER	---	---	---	---	---	---	527	3040	5570	* 10448	---
Evap Pond 1	2/5/2013	ENER	---	---	---	---	---	---	1950	12900	25500	* 27230	---
	4/19/2013	ENER	---	---	---	---	---	---	6370	22600	60700	* 55380	---
	10/16/2013	ENER	12.0	285	101	20100	6100	6120	6810	25900	67300	* 70040	0.870
	11/13/2013	ENER	---	---	---	---	---	---	6760	25500	64000	* 77819	---
Evap Pond 2	2/5/2013	ENER	---	---	---	---	---	---	1020	7870	17000	* 18900	---
	4/19/2013	ENER	---	---	---	---	---	---	1130	9150	18200	* 20370	---
	10/16/2013	ENER	26.4	126	21.2	5930	2010	797	1230	9890	18800	* 25526	0.900
	11/13/2013	ENER	---	---	---	---	---	---	1210	9660	18600	* 27121	---
Evap Pond 3A	2/5/2013	ENER	---	---	---	---	---	---	16000	26500	96600	* 81550	---
	4/19/2013	ENER	---	---	---	---	---	---	18300	35000	118000	* 93590	---
	10/16/2013	ENER	13.0	350	173	30900	7800	8750	10300	31400	83600	* 88456	1.01
	11/13/2013	ENER	---	---	---	---	---	---	16000	37400	103000	* 118196	---
Evap Pond 3B	2/5/2013	ENER	---	---	---	---	---	---	19300	20100	99300	* 81550	---
	4/19/2013	ENER	---	---	---	---	---	---	23100	34300	125000	* 102100	---
	10/16/2013	ENER	13.0	288	102	20400	5850	6180	6990	26600	65800	* 72400	0.868
	10/25/2013	ENER	13.0	296	116	23600	5610	6000	6440	24300	65700	---	1.08
	11/13/2013	ENER	---	---	---	---	---	---	7330	28700	68800	* 83514	---
W Coll Pond	2/5/2013	ENER	---	---	---	---	---	---	268	2080	3650	* 4882	---
	4/19/2013	ENER	---	---	---	---	---	---	282	2200	4080	* 5251	---
	10/16/2013	ENER	47.4	82.2	5.30	1580	543	26.0	371	3050	5530	* 8680	0.931
	11/13/2013	ENER	---	---	---	---	---	---	324	2570	4500	* 8657	---

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
E Coll Pond	2/5/2013	ENER	8.27	15.8	30.1	1.36	---	---	---	---	---
	4/19/2013	ENER	9.02	19.0	26.2	1.25	---	---	---	---	---
	10/16/2013	ENER	9.16	7.95	12.2	0.266	< 0.100	5.30	-0.600	< 0.0100	2.10
	11/13/2013	ENER	9.33	6.00	12.8	0.300	---	---	---	---	---
Evap Pond 1	2/5/2013	ENER	9.56	44.3	70.7	0.570	---	---	---	---	---
	4/19/2013	ENER	9.52	180	266	0.918	---	---	---	---	---
	10/16/2013	ENER	9.50	165	190	0.445	< 0.100	70.0	25.1	0.160	294
	11/13/2013	ENER	9.51	175	231	0.380	---	---	---	---	---
Evap Pond 2	2/5/2013	ENER	9.50	24.5	45.9	0.550	---	---	---	---	---
	4/19/2013	ENER	9.54	27.0	53.5	0.806	---	---	---	---	---
	10/16/2013	ENER	9.36	27.0	52.6	0.538	1.20	63.0	1.50	0.0600	38.5
	11/13/2013	ENER	9.34	28.0	54.2	0.572	---	---	---	---	---
Evap Pond 3A	2/5/2013	ENER	9.47	449	692	0.760	---	---	---	---	---
	4/19/2013	ENER	9.42	526	782	1.40	---	---	---	---	---
	10/16/2013	ENER	9.47	298	205	0.469	0.100	76.0	34.1	0.190	483
	11/13/2013	ENER	9.42	422	645	0.590	---	---	---	---	---
Evap Pond 3B	2/5/2013	ENER	9.47	539	802	1.30	---	---	---	---	---
	4/19/2013	ENER	9.41	638	978	2.19	---	---	---	---	---
	10/16/2013	ENER	9.50	191	218	0.457	< 0.100	---	---	0.150	---
	10/25/2013	ENER	9.53	177	266	0.396	< 0.100	56.0	5.30	0.140	262
	11/13/2013	ENER	9.50	191	219	0.490	---	---	---	---	---
W Coll Pond	2/5/2013	ENER	8.44	6.15	9.35	0.140	---	---	---	---	---
	4/19/2013	ENER	8.39	8.00	8.50	0.368	---	---	---	---	---
	10/16/2013	ENER	8.72	10.8	14.1	0.559	2.80	3.90	0.200	0.0100	1.60
	11/13/2013	ENER	8.77	8.00	12.7	0.500	---	---	---	---	---

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
0690	2/19/2013	ENER	---	---	---	---	---	---	92.0	284	868	* 1375	---
0691	2/19/2013	ENER	---	---	---	---	---	---	149	279	922	* 1460	---
0891	2/19/2013	ENER	---	---	---	---	---	---	115	320	951	* 1465	---
1J	1/22/2013	ENER	1070	201	6.00	841	3670	< 5.00	222	3.00	8190	* 7146	1.60
1N	2/19/2013	ENER	---	---	---	---	---	---	209	887	2090	* 2960	---
1P	2/19/2013	ENER	---	---	---	---	---	---	767	838	2900	* 4226	---
1Q	1/22/2013	ENER	139	28.3	3.10	549	559	< 5.00	409	479	1890	* 2899	1.08
1R	1/16/2013	ENER	209	43.0	3.70	696	1410	< 5.00	694	5.00	2340	* 4005	1.03
1S	1/21/2013	ENER	506	115	4.60	764	2490	< 5.00	256	2.00	5230	* 5153	1.41
1T	1/16/2013	ENER	80.1	17.1	2.50	406	596	< 5.00	296	203	1340	* 2146	1.03
1U	1/16/2013	ENER	115	26.7	3.10	503	466	< 5.00	325	588	1820	* 2543	1.02
	2/20/2013	ENER	---	---	---	---	---	---	305	535	1730	* 2689	---
1V	1/16/2013	ENER	103	29.7	3.00	539	462	< 5.00	347	602	1910	* 2858	1.03
B6	11/23/2013	ENER	---	---	---	---	---	---	625	4230	8350	* 13120	---
B7	6/18/2013	ENER	366	91.7	7.60	375	490	< 5.00	219	1290	2660	* 3375	1.03
	11/23/2013	ENER	---	---	---	---	---	---	592	4800	9300	* 10900	---
B10	11/23/2013	ENER	---	---	---	---	---	---	741	5320	10500	* 12500	---
B12	5/14/2013	ENER	---	---	---	---	---	---	131	552	1440	* 2038	---
B13	5/14/2013	ENER	---	---	---	---	---	---	115	395	1110	* 1648	---
C6	3/7/2013	ENER	---	---	---	---	---	---	108	405	1160	* 1735	---
	10/31/2013	ENER	76.2	21.9	4.20	460	472	< 5.00	146	616	1560	* 2955	1.04
C8	3/7/2013	ENER	---	---	---	---	---	---	433	2620	5200	* 6284	---
	10/30/2013	ENER	197	55.2	5.90	737	584	< 5.00	239	1390	2960	* 5100	1.03
C9	3/7/2013	ENER	---	---	---	---	---	---	---	1500	3060	* 4223	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
C9	10/31/2013	ENER	---	---	---	---	---	---	254	1270	2700	* 5014	---
C10	3/7/2013	ENER	---	---	---	---	---	---	244	1420	3080	* 4234	---
	10/31/2013	ENER	109	29.9	6.00	625	548	< 5.00	189	887	2110	* 3833	1.07
C11	3/7/2013	ENER	---	---	---	---	---	---	---	1150	2550	* 3527	---
C12	3/7/2013	ENER	---	---	---	---	---	---	---	1100	2370	* 3446	---
	10/31/2013	ENER	---	---	---	---	---	---	160	890	2040	* 4175	---
D1	3/4/2013	ENER	---	---	---	---	---	---	---	1100	2210	* 2932	---
	3/4/2013	ENER	---	---	---	---	---	---	---	# 1100	# 2240	---	---
	7/8/2013	ENER	283	60.8	4.00	436	366	< 5.00	175	1320	2520	* 3190	0.990
DD	2/11/2013	HMC	---	---	---	---	---	---	64.0	1800	3070	3481	---
	5/1/2013	ENER	442	99.3	7.10	353	381	< 5.00	64.0	1700	3060	* 3476	1.05
	10/30/2013	ENER	---	---	---	---	---	---	66.0	1740	2970	* 4121	---
	11/22/2013	ENER	---	---	---	---	---	---	67.0	1750	3040	* 4490	---
DD2	2/11/2013	HMC	---	---	---	---	---	---	59.0	1340	2360	2850	---
	5/1/2013	ENER	338	77.3	6.00	290	377	< 5.00	58.0	1250	2380	* 2820	1.06
	10/30/2013	ENER	---	---	---	---	---	---	61.0	1350	2390	* 3797	---
	11/22/2013	ENER	---	---	---	---	---	---	62.0	1350	2410	* 3766	---
F	3/5/2013	ENER	---	---	---	---	---	---	---	661	1830	* 2520	---
	10/29/2013	ENER	---	---	---	---	---	---	222	729	1880	* 3374	---
FB	3/5/2013	ENER	---	---	---	---	---	---	---	695	1950	* 2681	---
	11/1/2013	ENER	---	---	---	---	---	---	227	739	1920	* 2676	---
GH	3/5/2013	ENER	---	---	---	---	---	---	---	671	1880	* 2592	---
	11/1/2013	ENER	---	---	---	---	---	---	208	708	1860	* 2576	---
GN	3/5/2013	ENER	---	---	---	---	---	---	---	379	1140	* 1715	---
K2	11/6/2013	ENER	---	---	---	---	---	---	106	315	866	* 1195	---
K4	1/15/2013	ENER	---	---	---	---	---	---	108	412	1150	* 1749	---

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
K5	1/15/2013	ENER	---	---	---	---	---	---	112	524	1360	* 1951	---
	10/31/2013	ENER	112	32.2	3.00	361	470	< 5.00	111	575	1420	* 2836	1.05
K7	1/15/2013	ENER	---	---	---	---	---	---	112	419	1210	* 1789	---
	10/31/2013	ENER	95.5	26.5	3.50	244	453	< 5.00	93.0	362	1040	* 1936	0.994
K8	1/15/2013	ENER	---	---	---	---	---	---	112	417	1160	* 1752	---
	10/31/2013	ENER	89.8	24.9	2.90	340	482	< 5.00	105	472	1270	* 2490	1.03
K9	1/15/2013	ENER	---	---	---	---	---	---	108	501	1290	* 1910	---
	10/31/2013	ENER	107	30.1	3.10	308	457	< 5.00	112	449	1270	* 2384	1.06
K10	1/15/2013	ENER	---	---	---	---	---	---	104	326	970	* 1523	---
	10/31/2013	ENER	81.6	20.0	3.60	306	432	< 5.00	106	388	1140	* 2315	1.04
K11	1/15/2013	ENER	---	---	---	---	---	---	114	415	1180	* 1785	---
	10/31/2013	ENER	84.1	22.5	4.10	313	445	< 5.00	112	408	1170	* 2139	1.03
KEB	2/27/2013	ENER	---	---	---	---	---	---	---	392	1150	* 1671	---
KF	2/27/2013	ENER	---	---	---	---	---	---	---	338	1100	* 1624	---
KZ	2/27/2013	ENER	---	---	---	---	---	---	---	329	1030	* 1443	---
L	5/13/2013	ENER	---	---	---	---	---	---	---	431	1200	* 1753	---
L5	5/13/2013	ENER	---	---	---	---	---	---	---	341	1010	* 1505	---
L6	5/13/2013	ENER	---	---	---	---	---	---	---	254	814	* 1247	---
L7	5/13/2013	ENER	---	---	---	---	---	---	---	270	876	* 1323	---
L8	5/13/2013	ENER	---	---	---	---	---	---	---	338	1030	* 1520	---
L9	5/15/2013	ENER	---	---	---	---	---	---	---	334	1060	* 1543	---
L10	5/13/2013	ENER	---	---	---	---	---	---	---	356	1050	* 1524	---
M3	11/23/2013	ENER	---	---	---	---	---	---	342	2790	5380	* 6838	---
M5	12/3/2013	ENER	---	---	---	---	---	---	128	881	1800	* 2348	---
M6	5/14/2013	ENER	---	---	---	---	---	---	214	1140	2440	* 3272	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
M7	3/20/2013	HMC	---	---	---	---	---	---	197	688	1760	2531	---
M9	2/20/2013	ENER	---	---	---	---	---	---	215	1270	2730	* 3431	---
	11/23/2013	ENER	---	---	---	---	---	---	272	1780	3760	* 4904	---
	12/17/2013	ENER	---	---	---	---	---	---	228	1380	2920	* 3688	---
M10	5/14/2013	ENER	---	---	---	---	---	---	233	1610	3090	* 3703	---
ML	5/14/2013	ENER	---	---	---	---	---	---	224	1750	3350	* 4026	---
MO	3/4/2013	ENER	---	---	---	---	---	---	---	926	2170	* 2936	---
	11/1/2013	ENER	---	---	---	---	---	---	213	917	2100	* 2822	---
MQ	2/20/2013	ENER	---	---	---	---	---	---	206	1300	2780	* 3417	---
	11/23/2013	ENER	---	---	---	---	---	---	227	1390	2930	* 3584	---
MS	4/30/2013	ENER	---	---	---	---	---	---	193	820	2040	* 2753	---
	11/23/2013	ENER	---	---	---	---	---	---	206	954	2170	* 2909	---
MT	5/15/2013	ENER	---	---	---	---	---	---	152	553	1500	* 2100	---
MV	5/15/2013	ENER	---	---	---	---	---	---	204	1120	2480	* 3159	---
MW	5/15/2013	ENER	---	---	---	---	---	---	233	1930	3730	* 4294	---
MX	5/14/2013	ENER	---	---	---	---	---	---	---	598	1720	* 2370	---
MZ	5/15/2013	ENER	---	---	---	---	---	---	203	1460	3020	* 3551	---
ND	12/3/2013	ENER	45.6	12.2	1.000	508	364	7.00	83.0	717	1560	* 2288	1.08
P	5/7/2013	ENER	241	50.1	4.90	255	266	< 5.00	51.0	1100	1940	* 2383	0.948
	11/5/2013	ENER	---	---	---	---	---	---	---	1130	1970	* 2491	---
P2	2/20/2013	ENER	325	65.4	6.70	281	230	< 5.00	60.0	1280	2310	* 2805	1.05
P3	2/20/2013	ENER	269	54.0	6.00	255	232	< 5.00	62.0	1080	1950	* 2471	1.03
P4	2/20/2013	ENER	231	38.4	3.90	247	186	< 5.00	49.0	942	1680	* 2159	1.05
Q	5/13/2013	ENER	381	71.8	6.80	284	249	< 5.00	65.0	1470	2540	* 2966	1.02

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
R	5/13/2013	ENER	332	56.1	4.00	292	161	< 5.00	58.0	1440	2350	* 2804	0.987
S2	1/14/2013	ENER	---	---	---	---	---	---	---	1170	2630	* 3586	---
	7/9/2013	ENER	---	---	---	---	---	---	247	1200	2610	* 3586	---
S4	3/4/2013	ENER	---	---	---	---	---	---	---	729	1870	* 2620	---
	6/19/2013	ENER	227	58.3	4.50	294	459	< 5.00	227	755	1880	---	0.974
	7/9/2013	ENER	228	58.2	4.70	296	456	< 5.00	236	746	1870	* 2567	0.978
S5R	11/23/2013	ENER	---	---	---	---	---	---	468	4960	9510	* 12850	---
S11	12/3/2013	ENER	---	---	---	---	---	---	227	764	1930	* 2680	---
S12	1/16/2013	ENER	237	68.9	5.60	442	690	< 5.00	244	906	2260	* 3161	0.990
SDR-1D	6/19/2013	ENER	230	61.2	6.00	320	467	< 5.00	223	830	2000	---	0.974
	8/27/2013	ENER	8060	66.0	148	1040	188	< 5.00	16000	291	43600	---	0.992
	8/28/2013	ENER	1040	63.0	25.0	513	400	< 5.00	2230	677	7590	---	0.956
	9/4/2013	ENER	1120	113	28.0	1040	355	< 5.00	3320	634	9710	---	0.985
	9/11/2013	ENER	961	113	26.0	1100	373	< 5.00	2850	675	8220	---	1.05
	9/17/2013	ENER	964	115	24.0	999	373	< 5.00	2830	721	7250	---	1.01
	9/24/2013	ENER	880	105	22.0	1000	399	< 5.00	2480	731	6340	---	1.05
	10/1/2013	ENER	743	100.0	20.0	896	409	< 5.00	2200	680	5710	---	1.02
	10/8/2013	ENER	669	94.0	18.0	826	414	< 5.00	1980	772	5380	---	0.983
	10/22/2013	ENER	482	76.0	15.0	679	457	< 5.00	1280	760	3790	---	1.01
	11/6/2013	ENER	466	156	14.0	618	492	< 5.00	1020	772	3180	---	1.19
	11/20/2013	ENER	400	64.0	13.0	554	522	< 5.00	812	765	2980	---	1.04
SDR-1S	6/19/2013	ENER	228	63.4	5.80	323	490	< 5.00	235	826	1970	---	0.962
	8/27/2013	ENER	6280	68.0	131	1340	214	< 5.00	13300	372	40700	---	0.985
	8/28/2013	ENER	1040	66.0	28.0	631	392	< 5.00	2340	664	7640	---	0.989
	9/4/2013	ENER	1340	136	27.0	1210	338	< 5.00	4040	657	11700	---	0.985
	9/11/2013	ENER	840	113	18.0	963	400	< 5.00	2460	659	7200	---	1.04
	9/17/2013	ENER	865	117	18.0	930	390	< 5.00	2510	633	6560	---	1.04

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
SDR-1S	9/24/2013	ENER	840	103	17.0	866	405	< 5.00	2340	648	6050	---	1.03
	10/1/2013	ENER	663	89.0	15.0	815	428	< 5.00	1990	679	5310	---	0.985
	10/8/2013	ENER	588	81.0	14.0	758	444	< 5.00	1660	745	4780	---	0.994
	10/22/2013	ENER	475	69.0	12.0	600	482	< 5.00	1100	729	3370	---	1.03
	11/6/2013	ENER	432	59.0	11.0	526	510	< 5.00	824	772	2820	---	1.04
	11/20/2013	ENER	379	57.0	11.0	486	544	< 5.00	633	761	2670	---	1.05
SDR-2D	6/19/2013	ENER	284	73.6	6.40	367	428	< 5.00	166	1180	2400	---	0.998
	8/27/2013	ENER	280	73.0	6.00	385	523	< 5.00	178	1120	2460	---	0.995
	8/28/2013	ENER	273	71.0	6.00	370	517	< 5.00	187	1110	2370	---	0.965
	9/4/2013	ENER	281	73.0	6.00	382	515	< 5.00	181	1180	2460	---	0.961
	9/11/2013	ENER	282	74.0	6.00	387	531	< 5.00	190	1180	2430	---	0.957
	9/17/2013	ENER	283	73.0	6.00	382	527	< 5.00	184	1130	2440	---	0.983
	9/24/2013	ENER	299	74.0	6.00	433	531	< 5.00	203	1160	2490	---	1.03
	9/30/2013	ENER	375	98.0	7.00	451	511	< 5.00	538	1120	2920	---	0.990
SDR-2S	6/19/2013	ENER	218	60.0	11.3	338	462	< 5.00	244	802	1970	---	0.984
	8/27/2013	ENER	265	73.0	10.00	345	516	< 5.00	374	782	2180	---	0.973
	8/28/2013	ENER	283	79.0	9.00	350	493	< 5.00	457	775	2310	---	0.968
	9/4/2013	ENER	238	66.0	9.00	323	520	< 5.00	253	790	2010	---	0.979
	9/11/2013	ENER	242	68.0	9.00	335	523	< 5.00	243	777	1990	---	1.02
	9/17/2013	ENER	235	66.0	9.00	320	541	< 5.00	239	766	1960	---	0.987
	9/24/2013	ENER	247	66.0	9.00	352	551	< 5.00	247	772	1990	---	1.03
	9/30/2013	ENER	239	67.0	8.00	319	564	< 5.00	242	786	2020	---	0.967
SDR-3D	6/19/2013	ENER	221	64.0	6.40	314	450	< 5.00	234	829	1970	---	0.959
	8/27/2013	ENER	243	66.0	7.00	323	503	< 5.00	206	988	2170	---	0.914
	9/11/2013	ENER	288	77.0	6.00	370	497	< 5.00	323	1020	2410	---	0.956
	10/1/2013	ENER	400	106	7.00	445	491	< 5.00	768	898	2960	---	0.993
	11/6/2013	ENER	410	104	7.00	510	507	< 5.00	787	910	3070	---	1.04
SDR-3S	6/19/2013	ENER	223	65.7	6.40	293	451	< 5.00	228	768	1890	---	0.982

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
SDR-3S	8/27/2013	ENER	234	69.0	7.00	285	501	< 5.00	253	824	1910	---	0.916
	9/11/2013	ENER	238	70.0	6.00	302	513	< 5.00	243	795	1950	---	0.967
	10/1/2013	ENER	237	70.0	7.00	301	531	< 5.00	233	773	1960	---	0.978
	11/6/2013	ENER	250	73.0	7.00	335	595	< 5.00	229	751	1990	---	1.04
SDR-4D	6/19/2013	ENER	265	71.2	6.20	361	447	< 5.00	191	1070	2240	---	0.994
	8/27/2013	ENER	281	75.0	6.00	387	500	< 5.00	311	1020	2410	---	0.969
	8/28/2013	ENER	319	86.0	6.00	428	495	< 5.00	548	1020	2790	---	0.929
	9/4/2013	ENER	326	88.0	7.00	507	493	< 5.00	615	1030	2970	---	0.972
	9/11/2013	ENER	325	89.0	7.00	516	509	< 5.00	589	1010	2870	---	1.00
	9/17/2013	ENER	308	84.0	6.00	480	507	< 5.00	506	1040	2770	---	0.976
	9/25/2013	ENER	314	85.0	7.00	493	519	< 5.00	542	1070	2860	---	0.958
	10/1/2013	ENER	295	80.0	6.00	452	513	< 5.00	452	1080	2740	---	0.939
SDR-4S	6/19/2013	ENER	228	68.4	7.60	311	462	< 5.00	232	787	1940	---	1.00
	8/27/2013	ENER	232	69.0	7.00	314	513	< 5.00	229	758	1940	---	1.01
	8/28/2013	ENER	235	70.0	7.00	316	519	< 5.00	237	787	1970	---	0.989
	9/4/2013	ENER	271	80.0	7.00	322	513	< 5.00	378	798	2210	---	0.956
	9/11/2013	ENER	319	95.0	8.00	340	507	< 5.00	500	797	2380	---	0.989
	9/17/2013	ENER	303	89.0	7.00	320	526	< 5.00	453	778	2300	---	0.968
	9/25/2013	ENER	298	88.0	8.00	336	516	< 5.00	434	801	2300	---	0.984
	10/1/2013	ENER	273	81.0	7.00	318	526	< 5.00	361	794	2190	---	0.966
SE6	1/15/2013	ENER	228	88.1	6.60	594	1280	< 5.00	266	712	2460	* 3604	1.03
SIW-D	6/19/2013	ENER	241	63.7	5.10	319	494	< 5.00	232	848	2020	---	0.963
	8/27/2013	ENER	8290	59.0	154	1050	170	< 5.00	16400	281	48000	---	0.993
	9/12/2013	ENER	959	93.0	31.0	1090	320	< 5.00	3040	651	8540	---	0.991
	10/8/2013	ENER	615	80.0	21.0	850	416	< 5.00	1770	782	4950	---	1.02
	11/21/2013	ENER	364	59.0	15.0	588	504	< 5.00	793	775	2910	---	1.04
SM	5/15/2013	ENER	---	---	---	---	---	---	231	1020	2450	* 3379	---
SMW-1	8/19/2013	ENER	248	71.0	6.00	364	586	< 5.00	223	903	2200	---	0.981

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
SMW-1	8/27/2013	ENER	6160	76.0	138	1450	163	< 5.00	14000	351	32400	---	0.939
	8/28/2013	ENER	2410	71.0	61.0	905	296	< 5.00	5560	594	16300	---	0.959
	9/4/2013	ENER	1170	99.0	34.0	1260	333	< 5.00	3850	670	10600	---	0.954
	9/11/2013	ENER	329	90.0	7.00	527	497	< 5.00	604	1070	2920	---	0.985
	9/17/2013	ENER	706	93.0	20.0	976	391	< 5.00	2280	791	5990	---	0.983
	9/25/2013	ENER	692	99.0	20.0	1030	396	< 5.00	2290	833	5850	---	0.993
	10/1/2013	ENER	696	103	19.0	1010	386	< 5.00	2310	740	5880	---	1.01
	10/8/2013	ENER	599	96.0	17.0	839	420	< 5.00	1740	832	4970	---	1.02
	10/22/2013	ENER	488	82.0	16.0	738	433	< 5.00	1360	807	3990	---	1.02
	11/6/2013	ENER	432	72.0	16.0	680	471	< 5.00	1020	855	3300	---	1.06
	11/20/2013	ENER	378	68.0	15.0	609	488	< 5.00	786	870	2920	---	1.06
SMW-2	8/15/2013	ENER	224	66.0	6.00	401	575	< 5.00	235	941	2230	---	0.955
	8/27/2013	ENER	212	63.0	4.00	382	567	< 5.00	236	815	2040	---	0.982
	9/12/2013	ENER	211	62.0	4.00	325	535	< 5.00	225	764	1910	---	0.958
	10/1/2013	ENER	226	67.0	5.00	349	573	< 5.00	228	843	2150	---	0.957
SMW-3D	8/19/2013	ENER	259	71.0	7.00	354	562	< 5.00	213	983	2190	---	0.958
	8/27/2013	ENER	463	66.0	15.0	448	492	< 5.00	855	974	3250	---	0.920
	8/28/2013	ENER	459	80.0	12.0	536	505	< 5.00	1050	905	3500	---	0.933
	9/4/2013	ENER	480	104	11.0	559	469	< 5.00	1150	886	3720	---	0.972
	9/12/2013	ENER	627	142	10.00	599	435	< 5.00	1770	866	5020	---	0.921
	9/17/2013	ENER	720	164	11.0	716	425	< 5.00	2070	788	5600	---	0.987
	9/25/2013	ENER	792	185	11.0	839	430	< 5.00	2490	870	6660	---	0.958
	10/1/2013	ENER	815	191	11.0	832	415	< 5.00	2570	707	6870	---	0.986
	10/8/2013	ENER	868	201	12.0	863	408	< 5.00	2750	757	7340	---	0.975
	10/22/2013	ENER	868	195	12.0	911	424	< 5.00	2520	731	6630	---	1.06
	11/6/2013	ENER	797	179	11.0	849	423	< 5.00	2450	796	6290	---	0.989
	11/20/2013	ENER	778	169	11.0	853	433	< 5.00	2260	785	5680	---	1.03
SMW-3S	8/19/2013	ENER	241	65.0	8.00	356	524	< 5.00	251	893	2120	---	0.960

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
SMW-3S	8/27/2013	ENER	427	72.0	20.0	630	491	< 5.00	1070	857	3640	---	0.981
	8/28/2013	ENER	867	103	23.0	723	466	< 5.00	2120	868	6770	---	0.978
	9/4/2013	ENER	374	69.0	16.0	495	517	< 5.00	710	880	2880	---	0.985
	9/12/2013	ENER	264	64.0	11.0	395	524	< 5.00	350	853	2330	---	0.987
	9/17/2013	ENER	234	62.0	10.00	370	538	< 5.00	297	818	2120	---	0.963
	9/25/2013	ENER	229	62.0	10.00	367	529	< 5.00	258	821	2070	---	0.986
	10/1/2013	ENER	224	65.0	11.0	393	565	< 5.00	260	891	2230	---	0.960
	10/8/2013	ENER	229	64.0	10.00	379	551	< 5.00	266	853	2150	---	0.970
	10/22/2013	ENER	246	74.0	11.0	397	570	< 5.00	308	838	2290	---	1.01
	11/6/2013	ENER	251	72.0	10.00	379	551	< 5.00	269	744	2030	---	1.09
	11/20/2013	ENER	244	71.0	10.00	381	566	< 5.00	269	800	2070	---	1.03
SMW-4D	8/19/2013	ENER	250	66.0	7.00	330	532	< 5.00	222	905	2070	---	0.954
	8/27/2013	ENER	330	87.0	7.00	361	485	< 5.00	565	873	2380	---	0.936
	8/28/2013	ENER	498	129	8.00	469	491	< 5.00	1270	849	3900	---	0.909
	9/4/2013	ENER	526	140	9.00	577	448	< 5.00	1450	779	4380	---	0.976
	9/12/2013	ENER	820	194	10.00	803	418	< 5.00	2540	690	7600	---	0.990
	9/17/2013	ENER	984	221	12.0	890	405	< 5.00	3070	669	8030	---	0.991
	9/25/2013	ENER	1070	224	12.0	968	384	< 5.00	3330	757	8630	---	0.984
	10/1/2013	ENER	1050	211	12.0	944	382	< 5.00	3320	643	8390	---	0.980
	10/8/2013	ENER	983	198	12.0	896	399	< 5.00	3070	685	8190	---	0.973
	10/22/2013	ENER	997	181	13.0	920	404	< 5.00	2840	676	7540	---	1.04
	11/6/2013	ENER	868	145	13.0	857	419	< 5.00	2390	708	6200	---	1.04
	11/21/2013	ENER	765	130	13.0	816	431	< 5.00	2130	750	5350	---	1.02
SMW-4S	8/19/2013	ENER	234	66.0	6.00	292	514	< 5.00	234	764	1910	---	0.963
	8/27/2013	ENER	3810	55.0	108	1470	245	< 5.00	9090	487	24200	---	0.966
	8/28/2013	ENER	1780	61.0	54.0	983	325	< 5.00	4400	610	13400	---	0.970
	9/4/2013	ENER	1730	220	44.0	1180	292	< 5.00	5110	565	14400	---	0.975
	9/12/2013	ENER	1460	171	31.0	975	294	< 5.00	4160	620	12000	---	0.962
	9/17/2013	ENER	1400	168	25.0	1060	340	< 5.00	3990	597	9550	---	0.998

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
SMW-4S	9/25/2013	ENER	1270	152	23.0	1030	365	< 5.00	3680	690	9240	---	0.976
	10/1/2013	ENER	1250	148	22.0	1030	356	< 5.00	3560	589	8860	---	1.01
	10/8/2013	ENER	1240	154	22.0	1030	356	< 5.00	3680	643	9450	---	0.974
	10/22/2013	ENER	940	115	21.0	845	398	< 5.00	2370	637	6730	---	1.08
	11/6/2013	ENER	591	78.0	15.0	624	474	< 5.00	1360	730	3790	---	1.03
	11/21/2013	ENER	471	65.0	16.0	562	515	< 5.00	1000	742	3200	---	1.03
SMW-5D	8/15/2013	ENER	436	111	7.00	457	578	< 5.00	272	1700	3480	---	0.967
	8/27/2013	ENER	431	111	7.00	436	572	< 5.00	273	1750	3420	---	0.927
	8/28/2013	ENER	455	116	7.00	447	590	< 5.00	287	1730	3560	---	0.961
	9/4/2013	ENER	322	85.0	6.00	399	435	< 5.00	145	1460	2710	---	0.971
	9/12/2013	ENER	307	81.0	6.00	375	421	< 5.00	139	1420	2580	---	0.948
	9/18/2013	ENER	313	84.0	6.00	393	431	< 5.00	137	1410	2600	---	0.983
	9/25/2013	ENER	318	84.0	6.00	397	440	< 5.00	146	1450	2700	---	0.964
	10/1/2013	ENER	330	88.0	6.00	413	474	< 5.00	147	1480	2780	---	0.975
	11/6/2013	ENER	329	85.0	6.00	433	437	< 5.00	139	1420	2720	---	1.04
SMW-5S	8/15/2013	ENER	245	65.0	5.00	301	581	< 5.00	222	754	2060	---	0.973
	8/27/2013	ENER	248	67.0	6.00	295	588	< 5.00	237	808	2060	---	0.927
	8/28/2013	ENER	253	68.0	5.00	315	577	< 5.00	230	786	2050	---	0.987
	9/4/2013	ENER	258	69.0	6.00	322	596	< 5.00	235	807	2060	---	0.980
	9/12/2013	ENER	250	67.0	5.00	312	595	< 5.00	234	799	2010	---	0.956
	9/18/2013	ENER	251	68.0	5.00	320	589	< 5.00	232	783	1980	---	0.985
	9/25/2013	ENER	251	67.0	5.00	318	579	< 5.00	236	793	1990	---	0.975
	10/1/2013	ENER	240	66.0	5.00	307	575	< 5.00	237	794	1990	---	0.941
	11/6/2013	ENER	247	68.0	5.00	341	545	< 5.00	234	776	1950	---	1.03
SMW-6	8/19/2013	ENER	265	79.0	6.00	376	576	< 5.00	235	1030	2390	---	0.962
	8/28/2013	ENER	274	79.0	6.00	386	596	< 5.00	237	1050	2390	---	0.965
	9/12/2013	ENER	268	77.0	6.00	354	563	< 5.00	252	993	2260	---	0.948
	10/1/2013	ENER	273	80.0	6.00	361	559	< 5.00	234	1020	2310	---	0.970

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
SMW-6	11/6/2013	ENER	289	83.0	6.00	394	577	< 5.00	232	1020	2350	---	1.03
SS	1/15/2013	ENER	224	85.8	6.60	430	826	< 5.00	236	776	2160	* 3094	1.02
ST	1/15/2013	ENER	287	108	7.30	1550	1240	< 5.00	359	2600	5300	* 6891	1.07
	11/23/2013	ENER	---	---	---	---	---	---	77.0	585	6170	* 7792	---
SV	11/23/2013	ENER	---	---	---	---	---	---	826	5970	11900	* 14510	---
SZ	1/16/2013	ENER	9.10	72.0	12.0	9520	6030	660	1390	11500	24500	* 27460	1.05
T	3/20/2013	HMC	---	---	---	---	---	---	---	1200	2530	3867	---
T2	11/22/2013	ENER	67.9	31.5	4.50	1620	1180	20.0	241	2030	4320	* 7742	1.11
T4	5/1/2013	ENER	1.80	1.20	6.90	1960	976	617	280	1930	5200	* 7586	1.01
T12	5/1/2013	ENER	1.70	1.10	3.60	1020	605	184	157	1140	2870	* 4207	1.01
T21	5/1/2013	ENER	1.30	1.40	9.50	2210	1090	719	247	2190	5840	* 8243	1.02
X	2/11/2013	HMC	---	---	---	---	---	---	83.0	247	844	1296	---
	4/19/2013	ENER	---	---	---	---	---	---	89.0	289	953	* 1440	---
	7/8/2013	ENER	131	28.9	4.60	139	384	< 5.00	88.0	277	904	* 1357	1.03
	10/31/2013	ENER	---	---	---	---	---	---	98.0	285	902	* 1773	---
X14	6/19/2013	ENER	153	42.6	2.30	595	504	< 5.00	271	1050	2480	---	0.978
XDR-1	6/18/2013	ENER	186	51.4	3.70	553	490	< 5.00	270	1040	2420	---	1.01
	9/3/2013	ENER	405	108	---	---	380	< 5.00	2030	---	---	---	---
	10/21/2013	ENER	320	84.0	4.00	909	487	< 5.00	1280	882	4030	---	0.999
	11/5/2013	ENER	282	79.0	4.00	858	619	< 5.00	964	836	3410	---	1.06
XDR-2	9/30/2013	ENER	331	91.0	4.00	880	467	< 5.00	1270	865	3840	---	1.01
XDR-3	9/30/2013	ENER	366	102	5.00	868	462	< 5.00	1350	868	3870	---	1.01
XDR-4	9/30/2013	ENER	219	61.0	3.00	636	585	< 5.00	535	985	2670	---	0.963

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
0690	2/19/2013	ENER	---	0.123	1.34	0.498	---	---	---	---	---
0691	2/19/2013	ENER	---	0.0176	0.130	0.140	---	---	---	---	---
0891	2/19/2013	ENER	---	0.0532	0.320	0.273	---	---	---	---	---
1J	1/22/2013	ENER	6.19	0.0319	0.120	0.685	< 0.100	12.0	---	---	---
1N	2/19/2013	ENER	---	0.0748	< 0.0300	0.0420	---	---	---	---	---
1P	2/19/2013	ENER	---	0.0863	< 0.0300	1.20	---	---	---	---	---
1Q	1/22/2013	ENER	7.51	1.46	0.270	0.0130	< 0.100	0.650	---	---	---
1R	1/16/2013	ENER	7.34	0.0135	< 0.0300	0.0220	< 0.100	1.80	---	---	---
1S	1/21/2013	ENER	6.65	0.0168	0.0500	0.0100	< 0.100	1.50	---	---	---
1T	1/16/2013	ENER	7.45	0.361	0.0500	0.0120	< 0.100	0.120	---	---	---
1U	1/16/2013	ENER	7.81	0.986	0.840	0.0050	< 0.100	0.430	---	---	---
	2/20/2013	ENER	---	1.62	1.20	< 0.0050	---	---	---	---	---
1V	1/16/2013	ENER	7.52	2.21	2.21	0.0090	< 0.100	0.620	---	---	---
B6	11/23/2013	ENER	---	25.6	29.5	0.485	---	---	---	---	---
B7	6/18/2013	ENER	7.35	1.08	0.530	0.115	7.80	0.490	---	---	---
	11/23/2013	ENER	---	31.2	38.3	0.566	---	---	---	---	---
B10	11/23/2013	ENER	---	30.5	25.3	2.60	---	---	---	---	---
B12	5/14/2013	ENER	---	0.854	1.60	0.0320	---	---	---	---	---
B13	5/14/2013	ENER	---	1.08	0.670	0.0200	---	---	---	---	---
C6	3/7/2013	ENER	---	0.880	1.36	0.0820	1.80	---	---	---	---
	10/31/2013	ENER	7.58	3.10	2.71	0.540	6.00	1.70	---	---	---
C8	3/7/2013	ENER	---	11.0	21.6	1.70	---	---	---	---	---
	10/30/2013	ENER	7.24	6.80	9.99	1.33	9.00	6.50	---	---	---
C9	3/7/2013	ENER	---	6.79	---	0.882	3.60	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
C9	10/31/2013	ENER	---	5.90	12.4	0.950	---	---	---	---	---
C10	3/7/2013	ENER	---	11.0	19.7	1.12	---	---	---	---	---
	10/31/2013	ENER	7.78	5.80	6.82	1.05	11.3	0.310	---	---	---
C11	3/7/2013	ENER	---	7.46	---	1.33	9.00	---	---	---	---
C12	3/7/2013	ENER	---	6.46	---	1.38	7.80	---	---	---	---
	10/31/2013	ENER	---	3.80	4.80	1.06	---	---	---	---	---
D1	3/4/2013	ENER	---	2.15	2.70	0.141	---	---	---	---	---
	3/4/2013	ENER	---	# 2.21	# 2.75	# 0.137	---	---	---	---	---
	7/8/2013	ENER	7.35	2.29	2.25	0.152	2.20	0.380	0.100	< 0.0100	0.200
DD	2/11/2013	HMC	7.20	0.142	< 0.0300	0.0450	---	---	---	---	---
	5/1/2013	ENER	7.46	0.159	< 0.0300	0.0350	4.40	0.440	- 2.00	< 0.0100	0.0100
	10/30/2013	ENER	7.15	0.156	< 0.0300	0.0330	---	---	---	---	---
	11/22/2013	ENER	7.19	0.137	< 0.0300	0.0460	---	---	---	---	---
DD2	2/11/2013	HMC	7.12	0.225	< 0.0300	0.0100	---	---	---	---	---
	5/1/2013	ENER	7.41	0.246	< 0.0300	< 0.0050	< 0.100	0.670	- 2.00	< 0.0100	0.0200
	10/30/2013	ENER	7.12	0.234	0.120	< 0.0050	---	---	---	---	---
	11/22/2013	ENER	7.14	0.204	< 0.0300	0.0160	---	---	---	---	---
F	3/5/2013	ENER	---	0.0543	< 0.0300	0.0110	---	---	---	---	---
	10/29/2013	ENER	---	0.0516	< 0.0300	0.0100	1.60	---	---	---	---
FB	3/5/2013	ENER	---	0.0678	< 0.0300	0.0070	---	---	---	---	---
	11/1/2013	ENER	---	0.0608	< 0.0300	0.0080	1.80	---	---	---	---
GH	3/5/2013	ENER	---	0.106	< 0.0300	0.0110	---	---	---	---	---
	11/1/2013	ENER	---	0.103	< 0.0300	0.0130	1.60	---	---	---	---
GN	3/5/2013	ENER	---	0.0816	< 0.0300	0.0110	---	---	---	---	---
K2	11/6/2013	ENER	---	0.0445	0.0800	< 0.0050	1.50	---	---	---	---
K4	1/15/2013	ENER	---	0.757	1.57	0.260	---	---	---	---	---

Signifies Quality Control Sample

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
K5	1/15/2013	ENER	---	0.504	1.41	0.0870	---	---	---	---	---
	10/31/2013	ENER	7.60	0.609	1.83	0.0770	1.60	0.560	---	---	---
K7	1/15/2013	ENER	---	0.516	0.870	0.117	---	---	---	---	---
	10/31/2013	ENER	7.61	0.489	0.780	0.0900	1.40	0.0500	---	---	---
K8	1/15/2013	ENER	---	0.692	1.32	0.211	---	---	---	---	---
	10/31/2013	ENER	7.61	0.772	1.33	0.108	1.50	0.400	---	---	---
K9	1/15/2013	ENER	---	1.07	3.20	0.101	---	---	---	---	---
	10/31/2013	ENER	7.62	1.06	2.64	0.0490	1.60	0.100	---	---	---
K10	1/15/2013	ENER	---	0.679	0.810	0.111	---	---	---	---	---
	10/31/2013	ENER	7.64	0.798	1.35	0.0440	1.60	0.140	---	---	---
K11	1/15/2013	ENER	---	0.609	1.01	0.0360	---	---	---	---	---
	10/31/2013	ENER	7.73	0.606	1.03	0.0400	1.60	0.150	---	---	---
KEB	2/27/2013	ENER	---	0.0686	---	0.0090	1.30	---	---	---	---
KF	2/27/2013	ENER	---	0.0828	---	0.0080	1.60	---	---	---	---
KZ	2/27/2013	ENER	---	0.0823	---	0.0060	1.30	---	---	---	---
L	5/13/2013	ENER	---	0.510	---	0.0390	1.40	---	---	---	---
L5	5/13/2013	ENER	---	0.284	---	0.124	0.900	---	---	---	---
L6	5/13/2013	ENER	---	0.264	---	0.0620	0.600	---	---	---	---
L7	5/13/2013	ENER	---	0.212	---	0.102	0.500	---	---	---	---
L8	5/13/2013	ENER	---	0.188	---	0.0620	1.20	---	---	---	---
L9	5/15/2013	ENER	---	0.287	---	0.0250	1.30	---	---	---	---
L10	5/13/2013	ENER	---	0.323	---	0.0480	1.10	---	---	---	---
M3	11/23/2013	ENER	---	11.2	9.20	0.600	---	---	---	---	---
M5	12/3/2013	ENER	---	0.176	0.150	0.0250	1.60	---	---	---	---
M6	5/14/2013	ENER	---	1.85	1.58	0.187	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
M7	3/20/2013	HMC	---	1.69	1.22	0.0420	---	---	---	---	---
M9	2/20/2013	ENER	---	1.35	0.670	0.116	---	---	---	---	---
	11/23/2013	ENER	---	5.12	7.02	0.201	---	---	---	---	---
	12/17/2013	ENER	---	2.29	2.09	0.135	---	---	---	---	---
M10	5/14/2013	ENER	---	0.171	< 0.0300	0.0670	---	---	---	---	---
ML	5/14/2013	ENER	---	0.111	< 0.0300	0.0330	---	---	---	---	---
MO	3/4/2013	ENER	---	0.266	< 0.0300	0.0630	---	---	---	---	---
	11/1/2013	ENER	---	0.264	< 0.0300	0.0580	4.80	---	---	---	---
MQ	2/20/2013	ENER	---	0.956	0.170	0.105	---	---	---	---	---
	11/23/2013	ENER	---	1.37	0.990	0.104	---	---	---	---	---
MS	4/30/2013	ENER	---	0.434	0.0500	0.0720	---	---	---	---	---
	11/23/2013	ENER	---	0.0555	0.170	0.137	---	---	---	---	---
MT	5/15/2013	ENER	---	0.0431	< 0.0300	0.0240	---	---	---	---	---
MV	5/15/2013	ENER	---	0.542	0.0600	0.0880	---	---	---	---	---
MW	5/15/2013	ENER	---	0.0962	< 0.0300	0.0240	---	---	---	---	---
MX	5/14/2013	ENER	---	0.0336	< 0.0300	0.0110	---	---	---	---	---
MZ	5/15/2013	ENER	---	0.242	< 0.0300	0.0370	---	---	---	---	---
ND	12/3/2013	ENER	7.94	0.0230	< 0.0300	0.0980	1.90	0.940	---	---	---
P	5/7/2013	ENER	7.20	0.0375	< 0.0300	0.0930	3.80	1.10	1.10	< 0.0100	0.0030
	11/5/2013	ENER	---	0.0341	< 0.0300	0.0740	---	---	---	---	---
P2	2/20/2013	ENER	7.32	0.0369	< 0.0300	0.322	14.0	0.100	---	---	---
P3	2/20/2013	ENER	7.44	0.0345	< 0.0300	0.201	9.00	0.200	---	---	---
P4	2/20/2013	ENER	7.31	0.0304	< 0.0300	0.191	6.70	0.170	---	---	---
Q	5/13/2013	ENER	7.36	0.0568	< 0.0300	0.380	13.0	0.300	0.500	< 0.0100	0.0100

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
R	5/13/2013	ENER	7.26	0.0230	< 0.0300	0.685	19.0	0.180	0.0030	< 0.0100	0.0080
S2	1/14/2013	ENER	---	5.07	5.85	1.29	---	---	---	---	---
	7/9/2013	ENER	---	5.03	5.01	1.22	3.20	---	---	---	---
S4	3/4/2013	ENER	---	0.315	0.650	0.0140	---	---	---	---	---
	6/19/2013	ENER	7.48	0.273	0.520	0.0210	---	---	---	---	---
	7/9/2013	ENER	7.40	0.289	0.550	0.0170	0.600	0.0300	0.0020	< 0.0100	0.0700
S5R	11/23/2013	ENER	---	21.6	34.7	0.438	---	---	---	---	---
S11	12/3/2013	ENER	---	0.0804	0.0500	0.0100	1.80	---	---	---	---
S12	1/16/2013	ENER	7.41	1.78	1.97	0.148	0.800	0.140	---	---	---
SDR-1D	6/19/2013	ENER	7.55	0.0553	0.470	0.0070	---	---	---	---	---
	8/27/2013	ENER	6.76	0.153	0.420	0.0160	3.79	2.80	---	0.0200	---
	8/28/2013	ENER	7.26	0.272	0.570	0.0170	1.42	0.600	---	< 0.0100	---
	9/4/2013	ENER	6.75	0.111	0.960	0.0190	1.59	0.580	---	0.0100	---
	9/11/2013	ENER	6.74	0.112	1.31	0.0280	1.43	0.400	---	0.0200	---
	9/17/2013	ENER	6.67	0.0964	1.22	0.0220	1.61	1.20	---	0.0100	---
	9/24/2013	ENER	6.68	0.130	1.39	0.0220	1.47	0.730	---	< 0.0100	---
	10/1/2013	ENER	6.78	0.138	1.30	0.0180	1.53	0.380	---	< 0.0100	---
	10/8/2013	ENER	6.74	0.162	1.35	0.0200	1.28	0.330	---	< 0.0100	---
	10/22/2013	ENER	6.91	0.215	1.43	0.0220	1.39	2.90	---	< 0.0100	---
	11/6/2013	ENER	7.00	0.487	1.08	0.0410	1.54	0.230	---	0.0200	---
	11/20/2013	ENER	6.93	0.164	0.880	0.0130	1.42	4.80	---	< 0.0100	---
SDR-1S	6/19/2013	ENER	7.35	0.740	0.990	0.0250	---	---	---	---	---
	8/27/2013	ENER	6.70	0.105	0.600	0.0160	3.17	3.20	---	0.0200	---
	8/28/2013	ENER	7.17	0.116	0.600	0.0080	1.27	0.440	---	< 0.0100	---
	9/4/2013	ENER	6.68	0.0536	1.000	0.0180	1.51	0.460	---	0.0100	---
	9/11/2013	ENER	6.83	0.0558	1.19	0.0220	1.36	0.280	---	< 0.0100	---
	9/17/2013	ENER	6.76	0.0577	1.01	0.0160	1.47	1.50	---	0.0100	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
SDR-1S	9/24/2013	ENER	6.77	0.0696	1.08	0.0150	1.33	1.80	---	< 0.0100	---
	10/1/2013	ENER	6.87	0.0572	0.990	0.0130	1.22	0.430	---	< 0.0100	---
	10/8/2013	ENER	6.86	0.0634	1.05	0.0120	1.24	0.860	---	< 0.0100	---
	10/22/2013	ENER	6.97	0.0805	1.01	0.0110	1.18	2.00	---	< 0.0100	---
	11/6/2013	ENER	7.06	0.0854	0.710	0.0110	1.19	0.510	---	< 0.0100	---
	11/20/2013	ENER	7.03	0.109	0.599	0.0070	1.31	5.40	---	< 0.0100	---
SDR-2D	6/19/2013	ENER	7.54	1.39	0.350	< 0.0050	---	---	---	---	---
	8/27/2013	ENER	7.58	2.05	0.640	< 0.0010	0.0400	0.490	---	0.0100	---
	8/28/2013	ENER	7.47	1.92	0.610	< 0.0010	0.0800	0.790	---	< 0.0100	---
	9/4/2013	ENER	7.52	1.99	0.660	< 0.0010	0.100	0.610	---	< 0.0100	---
	9/11/2013	ENER	7.48	2.18	0.720	< 0.0010	0.0400	1.20	---	< 0.0100	---
	9/17/2013	ENER	7.50	2.18	0.750	< 0.0010	0.0300	1.60	---	< 0.0100	---
	9/24/2013	ENER	7.45	2.28	0.827	< 0.0010	0.0400	1.30	---	< 0.0100	---
	9/30/2013	ENER	7.42	2.07	0.730	< 0.0010	0.0200	1.10	---	< 0.0100	---
SDR-2S	6/19/2013	ENER	7.46	0.167	0.140	0.0080	---	---	---	---	---
	8/27/2013	ENER	7.32	0.108	0.180	0.0050	0.960	0.460	---	< 0.0100	---
	8/28/2013	ENER	7.24	0.121	0.200	0.0060	0.880	0.420	---	< 0.0100	---
	9/4/2013	ENER	7.29	0.119	0.210	0.0040	0.770	0.100	---	< 0.0100	---
	9/11/2013	ENER	7.31	0.106	0.196	0.0060	0.900	3.10	---	< 0.0100	---
	9/17/2013	ENER	7.27	0.109	0.190	0.0050	1.01	1.20	---	< 0.0100	---
	9/24/2013	ENER	7.21	0.105	0.186	0.0040	1.06	0.490	---	< 0.0100	---
	9/30/2013	ENER	7.27	0.102	0.150	0.0050	1.13	0.350	---	< 0.0100	---
SDR-3D	6/19/2013	ENER	7.36	0.398	0.420	0.0110	---	---	---	---	---
	8/27/2013	ENER	7.44	1.12	0.500	< 0.0010	< 0.0600	0.970	---	< 0.0100	---
	9/11/2013	ENER	7.37	1.34	0.590	0.0020	0.0200	1.20	---	< 0.0100	---
	10/1/2013	ENER	7.41	1.20	0.570	< 0.0010	0.0700	1.10	---	< 0.0100	---
	11/6/2013	ENER	7.46	1.12	0.700	0.0020	0.0300	1.10	---	< 0.0100	---
SDR-3S	6/19/2013	ENER	7.38	0.368	0.480	0.0110	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
SDR-3S	8/27/2013	ENER	7.31	0.279	0.370	0.0070	0.590	0.580	---	0.0100	---
	9/11/2013	ENER	7.23	0.292	0.370	0.0070	0.650	2.40	---	< 0.0100	---
	10/1/2013	ENER	7.31	0.248	0.320	0.0060	0.770	0.420	---	< 0.0100	---
	11/6/2013	ENER	7.28	0.226	0.328	0.0080	1.25	0.420	---	< 0.0100	---
SDR-4D	6/19/2013	ENER	7.59	1.46	0.270	< 0.0050	---	---	---	---	---
	8/27/2013	ENER	7.55	1.54	0.390	< 0.0010	0.100	1.10	---	< 0.0100	---
	8/28/2013	ENER	7.46	1.59	0.350	< 0.0010	< 0.0600	1.50	---	< 0.0100	---
	9/4/2013	ENER	7.51	1.55	0.360	0.0030	0.0300	1.20	---	< 0.0100	---
	9/11/2013	ENER	7.50	1.56	0.395	0.0030	0.0600	1.40	---	< 0.0100	---
	9/17/2013	ENER	7.46	1.57	0.380	< 0.0010	0.150	1.90	---	< 0.0100	---
	9/25/2013	ENER	7.46	1.59	0.400	< 0.0010	< 0.100	3.10	---	< 0.0100	---
	10/1/2013	ENER	7.53	1.65	0.370	< 0.0010	0.0300	0.700	---	< 0.0100	---
SDR-4S	6/19/2013	ENER	7.35	0.499	0.530	0.0110	---	---	---	---	---
	8/27/2013	ENER	7.32	0.529	0.590	0.0110	0.980	0.720	---	0.0100	---
	8/28/2013	ENER	7.26	0.549	0.600	0.0120	1.04	0.520	---	< 0.0100	---
	9/4/2013	ENER	7.27	0.450	0.520	0.0100	0.970	0.950	---	< 0.0100	---
	9/11/2013	ENER	7.24	0.455	0.0552	0.0120	0.890	1.10	---	< 0.0100	---
	9/17/2013	ENER	7.23	0.478	0.540	0.0110	0.970	1.30	---	< 0.0100	---
	9/25/2013	ENER	7.21	0.444	0.500	0.0100	0.900	14.0	---	< 0.0100	---
	10/1/2013	ENER	7.28	0.444	0.510	0.0090	0.940	0.520	---	< 0.0100	---
SE6	1/15/2013	ENER	7.63	0.607	0.130	0.0070	< 0.100	1.10	---	---	---
SIW-D	6/19/2013	ENER	7.47	0.0653	0.810	0.0280	---	---	---	---	---
	8/27/2013	ENER	6.60	0.113	0.413	0.0160	3.92	3.00	---	0.0200	---
	9/12/2013	ENER	6.51	0.0467	1.17	0.0210	1.60	1.10	---	0.0100	---
	10/8/2013	ENER	6.67	0.0810	1.55	0.0200	1.26	2.70	---	0.0200	---
	11/21/2013	ENER	6.85	0.108	1.04	0.0150	1.43	0.420	---	< 0.0100	---
SM	5/15/2013	ENER	---	1.77	2.39	0.182	---	---	---	---	---
SMW-1	8/19/2013	ENER	7.20	1.44	1.31	0.0360	1.38	0.700	---	< 0.0100	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
SMW-1	8/27/2013	ENER	6.38	0.0570	0.600	0.0180	3.12	1.30	---	0.0100	---
	8/28/2013	ENER	6.77	0.169	0.500	0.0170	2.05	0.710	---	0.0200	---
	9/4/2013	ENER	6.56	0.0837	1.65	0.0280	1.94	0.580	---	0.0100	---
	9/11/2013	ENER	7.51	1.56	0.390	< 0.0030	0.0200	1.60	---	< 0.0100	---
	9/17/2013	ENER	6.70	0.182	1.94	0.0330	1.74	0.740	---	0.0100	---
	9/25/2013	ENER	6.67	0.171	1.86	0.0330	1.80	9.10	---	< 0.0100	---
	10/1/2013	ENER	6.74	0.142	1.80	0.0310	1.62	0.560	---	< 0.0100	---
	10/8/2013	ENER	6.72	0.286	1.83	0.0340	1.77	0.230	---	< 0.0100	---
	10/22/2013	ENER	6.79	0.247	1.87	0.0330	1.61	1.000	---	< 0.0100	---
	11/6/2013	ENER	6.90	0.263	1.80	0.0300	1.60	0.160	---	< 0.0100	---
	11/20/2013	ENER	6.82	0.298	1.73	0.0310	1.84	4.50	---	< 0.0100	---
SMW-2	8/15/2013	ENER	7.33	1.53	1.21	0.0550	1.70	0.370	---	0.0100	---
	8/27/2013	ENER	7.37	0.757	0.760	0.0180	1.34	0.380	---	0.0100	---
	9/12/2013	ENER	7.26	0.567	0.640	0.0130	1.86	2.30	---	< 0.0100	---
	10/1/2013	ENER	7.47	0.876	0.810	0.0190	1.37	0.510	---	< 0.0100	---
SMW-3D	8/19/2013	ENER	7.28	1.06	0.900	0.0130	0.290	1.30	---	0.0100	---
	8/27/2013	ENER	7.26	0.479	0.520	0.0020	0.0500	2.10	---	0.0100	---
	8/28/2013	ENER	7.28	0.439	0.650	0.0010	0.0900	0.560	---	< 0.0100	---
	9/4/2013	ENER	7.23	0.370	0.500	< 0.0010	0.0400	0.880	---	< 0.0100	---
	9/12/2013	ENER	7.16	0.0494	0.250	< 0.0010	0.0400	25.0	---	< 0.0100	---
	9/17/2013	ENER	7.17	0.362	0.270	< 0.0010	0.0300	1.90	---	< 0.0100	---
	9/25/2013	ENER	7.11	0.371	0.230	< 0.0010	< 0.100	1.50	---	< 0.0100	---
	10/1/2013	ENER	7.15	0.271	0.280	< 0.0010	0.0400	0.800	---	< 0.0100	---
	10/8/2013	ENER	7.04	0.265	0.300	< 0.0010	< 0.0100	4.70	---	< 0.0100	---
	10/22/2013	ENER	7.10	0.288	0.240	0.0030	0.0500	1.90	---	< 0.0100	---
	11/6/2013	ENER	7.11	0.318	0.400	0.0040	0.0200	1.20	---	< 0.0100	---
	11/20/2013	ENER	6.93	0.273	0.390	< 0.0010	< 0.0100	2.50	---	< 0.0100	---
SMW-3S	8/19/2013	ENER	7.23	0.794	0.940	0.0190	0.770	1.50	---	< 0.0100	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
SMW-3S	8/27/2013	ENER	7.20	0.576	0.860	0.0190	0.460	0.650	---	< 0.0100	---
	8/28/2013	ENER	7.11	0.848	1.38	0.0220	0.970	0.830	---	0.0100	---
	9/4/2013	ENER	7.19	0.726	1.15	0.0210	2.09	0.990	---	< 0.0100	---
	9/12/2013	ENER	7.21	0.677	0.910	0.0160	1.81	1.10	---	0.0100	---
	9/17/2013	ENER	7.25	0.528	0.660	0.0100	1.71	2.00	---	< 0.0100	---
	9/25/2013	ENER	7.27	0.505	0.560	0.0090	1.50	1.70	---	< 0.0100	---
	10/1/2013	ENER	7.33	1.11	1.27	0.0230	2.14	0.710	---	< 0.0100	---
	10/8/2013	ENER	7.23	0.716	0.830	0.0150	1.62	0.930	---	< 0.0100	---
	10/22/2013	ENER	7.29	1.11	1.13	0.0220	1.62	2.00	---	0.0200	---
	11/6/2013	ENER	7.36	0.548	0.579	0.0100	1.21	0.640	---	< 0.0100	---
	11/20/2013	ENER	7.16	0.485	0.534	0.0070	1.43	3.00	---	< 0.0100	---
SMW-4D	8/19/2013	ENER	7.39	0.0493	0.540	0.0030	< 0.200	1.70	---	< 0.0100	---
	8/27/2013	ENER	7.43	0.509	0.320	< 0.0010	0.130	1.30	---	< 0.0100	---
	8/28/2013	ENER	7.33	0.437	0.410	< 0.0010	< 0.0600	1.90	---	< 0.0100	---
	9/4/2013	ENER	7.35	0.499	0.300	< 0.0010	< 0.0600	3.00	---	< 0.0100	---
	9/12/2013	ENER	7.24	0.543	0.200	< 0.0010	0.110	3.00	---	< 0.0100	---
	9/17/2013	ENER	7.17	0.506	0.170	< 0.0010	0.0700	5.80	---	< 0.0100	---
	9/25/2013	ENER	7.14	0.469	0.140	< 0.0010	< 0.100	4.50	---	< 0.0100	---
	10/1/2013	ENER	7.16	0.458	0.130	< 0.0010	< 0.0600	2.70	---	< 0.0100	---
	10/8/2013	ENER	7.10	0.0566	0.220	0.0130	< 0.0600	2.40	---	< 0.0100	---
	10/22/2013	ENER	7.06	0.295	0.180	0.0030	0.0900	3.00	---	< 0.0100	---
	11/6/2013	ENER	7.09	0.230	0.200	0.0040	< 0.0600	1.80	---	< 0.0100	---
	11/21/2013	ENER	6.96	0.165	0.260	< 0.0010	< 0.0600	4.00	---	< 0.0100	---
SMW-4S	8/19/2013	ENER	7.20	0.199	0.370	0.0080	0.820	0.590	---	< 0.0100	---
	8/27/2013	ENER	6.57	0.0478	0.410	0.0160	2.58	0.890	---	0.0100	---
	8/28/2013	ENER	6.80	0.133	0.550	0.0170	1.84	0.190	---	0.0100	---
	9/4/2013	ENER	6.47	0.0202	0.580	0.0230	1.92	0.820	---	< 0.0100	---
	9/12/2013	ENER	6.47	0.0433	0.650	0.0150	1.91	1.10	---	0.0100	---
	9/17/2013	ENER	6.70	0.0794	0.600	0.0150	1.84	0.610	---	0.0100	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
SMW-4S	9/25/2013	ENER	6.70	0.0860	0.700	0.0140	1.70	2.30	---	< 0.0100	---
	10/1/2013	ENER	6.82	0.0862	0.720	0.0120	2.03	0.550	---	< 0.0100	---
	10/8/2013	ENER	6.70	0.0005	0.710	< 0.0010	2.01	5.30	---	< 0.0100	---
	10/22/2013	ENER	6.81	0.0544	0.880	0.0100	1.85	2.30	---	< 0.0100	---
	11/6/2013	ENER	7.01	0.0810	0.710	0.0110	1.23	1.20	---	< 0.0100	---
	11/21/2013	ENER	6.93	0.0761	0.620	0.0060	1.37	0.910	---	< 0.0100	---
SMW-5D	8/15/2013	ENER	7.29	0.178	0.0870	0.0160	0.0500	1.50	---	< 0.0100	---
	8/27/2013	ENER	7.30	0.146	0.0190	0.0110	0.0200	1.60	---	< 0.0100	---
	8/28/2013	ENER	7.28	0.120	0.0110	0.0080	0.0300	1.60	---	< 0.0100	---
	9/4/2013	ENER	7.43	0.168	0.0180	0.0170	0.0400	1.40	---	< 0.0100	---
	9/12/2013	ENER	7.39	0.217	0.0190	0.0320	0.100	1.80	---	< 0.0100	---
	9/18/2013	ENER	7.36	0.210	0.0190	0.0260	0.0700	1.50	---	0.0200	---
	9/25/2013	ENER	7.41	0.234	0.0210	0.0200	< 0.100	2.20	---	< 0.0100	---
	10/1/2013	ENER	7.49	0.218	0.0330	0.0200	0.0900	1.10	---	< 0.0100	---
	11/6/2013	ENER	7.49	0.293	0.0210	0.0440	0.210	0.850	---	< 0.0100	---
SMW-5S	8/15/2013	ENER	7.25	0.439	0.630	0.0110	1.37	0.970	---	< 0.0100	---
	8/27/2013	ENER	7.27	0.0483	0.650	0.0120	1.34	0.900	---	< 0.0100	---
	8/28/2013	ENER	7.20	0.470	0.680	0.0130	1.41	0.380	---	< 0.0100	---
	9/4/2013	ENER	7.20	0.457	0.680	0.0130	1.37	0.430	---	< 0.0100	---
	9/12/2013	ENER	7.16	0.448	0.690	0.0120	1.32	0.620	---	0.0100	---
	9/18/2013	ENER	7.12	0.467	0.710	0.0130	1.36	0.160	---	0.0100	---
	9/25/2013	ENER	7.21	0.504	0.710	0.0120	1.40	1.40	---	< 0.0100	---
	10/1/2013	ENER	7.24	0.500	0.710	0.0110	1.25	0.480	---	< 0.0100	---
	11/6/2013	ENER	7.31	0.517	0.779	0.0100	1.09	0.580	---	< 0.0100	---
SMW-6	8/19/2013	ENER	7.20	2.53	2.51	0.0480	2.60	0.710	---	0.0100	---
	8/28/2013	ENER	7.29	2.50	2.19	0.0520	2.97	0.850	---	< 0.0100	---
	9/12/2013	ENER	7.17	1.95	2.19	0.0350	2.19	0.800	---	< 0.0100	---
	10/1/2013	ENER	7.23	2.03	2.09	0.0390	2.47	0.670	---	< 0.0100	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
SMW-6	11/6/2013	ENER	7.30	1.97	2.06	0.0420	2.69	0.440	---	< 0.0100	---
SS	1/15/2013	ENER	7.59	0.564	0.340	0.0180	< 0.100	0.610	---	---	---
ST	1/15/2013	ENER	7.65	11.2	16.0	0.213	1.30	0.530	---	---	---
	11/23/2013	ENER	---	13.3	19.0	0.326	---	---	---	---	---
SV	11/23/2013	ENER	---	30.8	37.7	1.50	---	---	---	---	---
SZ	1/16/2013	ENER	8.71	54.6	99.4	4.89	10.8	1.50	---	---	---
T	3/20/2013	HMC	---	8.61	---	2.03	15.0	---	---	---	---
T2	11/22/2013	ENER	8.30	7.78	21.6	0.156	1.40	0.970	---	---	---
T4	5/1/2013	ENER	9.81	4.00	12.2	0.194	< 0.100	101	---	---	---
T12	5/1/2013	ENER	9.48	1.92	4.01	0.0500	< 0.100	43.0	---	---	---
T21	5/1/2013	ENER	9.82	7.25	20.4	0.107	< 0.100	141	---	---	---
X	2/11/2013	HMC	7.33	0.0422	0.0700	0.0270	---	---	---	---	---
	4/19/2013	ENER	---	0.0582	0.110	0.0170	---	---	---	---	---
	7/8/2013	ENER	7.50	0.0563	0.0800	0.0110	1.50	0.330	0.0300	0.0100	0.0500
	10/31/2013	ENER	7.47	0.0635	0.210	0.0140	---	---	---	---	---
X14	6/19/2013	ENER	7.50	4.80	2.30	0.344	---	---	---	---	---
XDR-1	6/18/2013	ENER	7.47	5.25	1.16	0.344	---	---	---	---	---
	9/3/2013	ENER	7.23	---	1.76	---	4.12	---	---	---	---
	10/21/2013	ENER	7.11	2.92	1.94	0.273	3.83	4.00	---	0.0300	---
	11/5/2013	ENER	7.18	3.22	1.98	0.200	3.67	0.980	---	0.0300	---
XDR-2	9/30/2013	ENER	7.21	3.65	1.91	0.299	4.38	0.820	---	< 0.0100	---
XDR-3	9/30/2013	ENER	7.17	4.79	1.48	0.275	4.43	1.30	---	0.0200	---
XDR-4	9/30/2013	ENER	7.27	6.00	1.06	0.205	2.50	0.720	---	< 0.0100	---

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
0481	5/10/2013	ENER	9.80	1.90	1.30	454	310	< 5.00	98.0	587	1360	* 2130	1.01
0482	7/9/2013	ENER	---	---	---	---	---	---	260	670	1800	* 2425	---
0483	11/14/2013	ENER	---	---	---	---	---	---	383	1280	3030	* 4956	---
0490	11/4/2013	ENER	---	---	---	---	---	---	---	1370	2750	* 3580	---
	11/22/2013	ENER	---	---	---	---	---	---	199	761	1870	* 3303	---
0491	7/9/2013	ENER	---	---	---	---	---	---	160	534	1470	* 2085	---
0496	3/6/2013	ENER	---	---	---	---	---	---	170	647	1670	* 2434	---
	11/14/2013	ENER	---	---	---	---	---	---	166	636	1700	* 2897	---
0497	6/17/2013	ENER	---	---	---	---	---	---	171	673	1770	* 2462	---
	11/14/2013	ENER	---	---	---	---	---	---	175	664	1790	* 3146	---
0498	11/14/2013	ENER	---	---	---	---	---	---	161	632	1680	* 3022	---
0688	3/4/2013	ENER	---	---	---	---	---	---	---	682	1830	* 2543	---
	10/29/2013	ENER	258	57.4	5.60	294	581	< 5.00	189	679	1870	* 3277	1.05
0802	3/4/2013	ENER	---	---	---	---	---	---	---	650	1800	* 2464	---
0844	2/5/2013	HMC	---	---	---	---	---	---	366	1440	3080	4120	---
	8/15/2013	ENER	364	126	4.20	514	432	< 5.00	400	1760	3480	* 5549	0.924
0845	2/5/2013	HMC	---	---	---	---	---	---	338	1640	3230	3859	---
	8/15/2013	ENER	330	98.6	4.90	440	464	< 5.00	328	1380	3000	* 4924	0.958
AW	12/9/2013	ENER	---	---	---	---	---	---	---	658	1710	* 3099	---
CW44	11/14/2013	ENER	---	---	---	---	---	---	183	705	1830	* 3274	---
Q1	11/20/2013	ENER	---	---	---	---	---	---	187	720	1810	* 3158	---
Q2	11/20/2013	ENER	---	---	---	---	---	---	184	740	1860	* 3341	---
Q3	12/19/2013	ENER	---	---	---	---	---	---	169	667	1750	* 3179	---
Q9	11/20/2013	ENER	---	---	---	---	---	---	161	634	1660	* 3100	---
Q16	11/19/2013	ENER	---	---	---	---	---	---	154	597	1640	* 2975	---

* Signifies Specific Conductivity from HMC

TABLE B.4-3 WATER QUALITY ANALYSES FOR THE SUBDIVISION ALLUVIAL WELLS (cont'd)

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
Q29	12/19/2013	ENER	---	---	---	---	---	---	170	692	1840	* 3221	---
Sub1	4/30/2013	ENER	240	61.8	6.40	287	516	< 5.00	197	689	1840	* 2495	1.04
Sub2	4/30/2013	ENER	173	44.4	4.30	222	423	< 5.00	144	524	1400	* 1980	0.999
	11/5/2013	ENER	---	---	---	---	---	---	---	524	1350	* 1960	---
Sub3	4/30/2013	ENER	178	62.1	9.90	321	531	< 5.00	189	604	1670	* 2426	1.05
	11/5/2013	ENER	---	---	---	---	---	---	---	572	1450	* 2238	---

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
0481	5/10/2013	ENER	7.30	0.0819	< 0.0300	0.123	1.80	0.300	0.700	< 0.0100	0.0300
0482	7/9/2013	ENER	---	0.144	0.0600	0.0240	1.90	---	---	---	---
0483	11/14/2013	ENER	---	0.143	0.0400	0.111	12.0	---	---	---	---
0490	11/4/2013	ENER	---	0.0932	0.0400	0.110	---	---	---	---	---
	11/22/2013	ENER	---	0.225	0.130	0.0370	---	---	---	---	---
0491	7/9/2013	ENER	---	0.291	0.0500	0.0230	1.80	---	---	---	---
0496	3/6/2013	ENER	---	0.156	< 0.0300	0.0360	---	---	---	---	---
	11/14/2013	ENER	---	0.117	< 0.0300	0.0370	2.20	---	---	---	---
0497	6/17/2013	ENER	---	0.0893	0.0300	0.0340	2.20	---	---	---	---
	11/14/2013	ENER	---	0.859	< 0.0300	0.0370	5.20	---	---	---	---
0498	11/14/2013	ENER	---	0.504	< 0.0300	0.0390	1.90	---	---	---	---
0688	3/4/2013	ENER	---	0.0568	< 0.0300	0.0100	---	---	---	---	---
	10/29/2013	ENER	7.20	0.0627	< 0.0300	0.0130	1.70	0.490	0.200	< 0.0200	0.200
0802	3/4/2013	ENER	---	0.233	< 0.0300	0.0060	---	---	---	---	---
0844	2/5/2013	HMC	---	0.133	< 0.0300	0.0620	---	---	---	---	---
	8/15/2013	ENER	7.52	0.123	< 0.0300	0.0720	11.0	0.370	---	---	---
0845	2/5/2013	HMC	---	0.0710	< 0.0300	0.0710	---	---	---	---	---
	8/15/2013	ENER	7.46	0.0787	< 0.0300	0.0640	8.00	0.220	---	---	---
AW	12/9/2013	ENER	---	0.137	0.110	0.0260	---	---	---	---	---
CW44	11/14/2013	ENER	---	0.319	< 0.0300	0.0340	0.600	---	---	---	---
Q1	11/20/2013	ENER	---	0.154	< 0.0300	0.0270	---	---	---	---	---
Q2	11/20/2013	ENER	---	0.694	< 0.0300	0.0370	---	---	---	---	---
Q3	12/19/2013	ENER	---	0.748	< 0.0300	0.0320	---	---	---	---	---
Q9	11/20/2013	ENER	---	0.463	< 0.0300	0.0310	---	---	---	---	---
Q16	11/19/2013	ENER	---	0.263	0.0400	0.0330	---	---	---	---	---

TABLE B.4-4 WATER QUALITY ANALYSES FOR THE SUBDIVISION ALLUVIAL WELLS (cont'd.)

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
Q29	12/19/2013	ENER	---	0.914	< 0.0300	0.0370	---	---	---	---	---
Sub1	4/30/2013	ENER	7.59	0.111	< 0.0300	0.0210	1.80	1.40	0.200	< 0.0100	0.0200
Sub2	4/30/2013	ENER	7.58	0.0367	< 0.0300	0.0170	1.40	0.600	0.800	< 0.0100	0.0400
	11/5/2013	ENER	---	0.0286	< 0.0300	0.0160	---	---	---	---	---
Sub3	4/30/2013	ENER	7.76	0.0229	< 0.0300	< 0.0050	0.200	0.470	- 2.00	< 0.0100	0.0200
	11/5/2013	ENER	---	0.0125	< 0.0300	< 0.0050	---	---	---	---	---

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
0522	5/13/2013	ENER	---	---	---	---	---	---	---	674	1570	* 2244	---
0532	3/20/2013	HMC	77.3	30.1	2.30	31.3	263	< 5.00	20.0	143	483	748	0.967
0538	3/18/2013	HMC	---	---	---	---	---	---	---	744	1750	2475	---
0540	5/3/2013	ENER	---	---	---	---	---	---	177	698	1830	* 3095	---
	11/14/2013	ENER	---	---	---	---	---	---	179	695	1780	* 3206	---
0541	8/8/2013	ENER	---	---	---	---	---	---	156	628	1620	* 2201	---
0551	2/6/2013	HMC	263	56.3	4.80	242	400	< 5.00	184	897	1990	2595	0.929
	8/8/2013	ENER	---	---	---	---	---	---	186	910	2150	* 3541	---
0553	2/6/2013	HMC	194	45.9	4.40	207	358	< 5.00	116	698	1550	2105	0.947
	8/8/2013	ENER	---	---	---	---	---	---	115	683	1610	* 2710	---
0554	2/6/2013	HMC	208	48.8	4.80	187	305	< 5.00	133	722	1580	2104	0.946
	8/8/2013	ENER	---	---	---	---	---	---	143	751	1690	* 2748	---
0555	2/5/2013	HMC	264	70.6	4.90	698	491	< 5.00	331	1520	3190	4154	1.01
	8/15/2013	ENER	---	---	---	---	---	---	348	1590	3420	* 4308	---
0556	2/5/2013	HMC	251	73.9	4.80	575	440	< 5.00	212	1490	2780	3581	0.986
	8/15/2013	ENER	---	---	---	---	---	---	210	1430	2800	* 4614	---
0557	2/5/2013	HMC	208	60.2	4.30	524	445	< 5.00	183	1210	2370	3169	1.01
	8/15/2013	ENER	---	---	---	---	---	---	185	1220	2520	* 4807	---
0631	3/6/2013	ENER	---	---	---	---	---	---	---	751	1710	* 2404	---
0632	3/6/2013	ENER	---	---	---	---	---	---	147	755	1600	* 2290	---
0634	11/23/2013	ENER	---	---	---	---	---	---	---	910	2050	* 2718	---
0647	2/6/2013	HMC	215	55.4	5.50	210	414	< 5.00	143	733	1730	2280	0.936
	8/8/2013	ENER	---	---	---	---	---	---	129	660	1670	* 2786	---
0649	2/6/2013	HMC	214	49.6	5.00	207	333	< 5.00	132	728	1580	2128	0.975
	3/6/2013	ENER	---	---	---	---	---	---	---	725	1570	* 2155	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
0649	8/15/2013	ENER	---	---	---	---	---	---	141	765	1680	* 2816	---
0650	2/6/2013	HMC	173	46.6	4.30	303	336	< 5.00	105	823	1720	2319	0.999
	8/15/2013	ENER	---	---	---	---	---	---	109	833	1750	* 2976	---
0653	6/17/2013	ENER	---	---	---	---	---	---	---	711	1790	* 2477	---
	11/14/2013	ENER	---	---	---	---	---	---	179	710	1740	* 3203	---
0657	5/13/2013	ENER	---	---	---	---	---	---	---	675	1610	* 2162	---
	8/8/2013	ENER	---	---	---	---	---	---	---	638	1590	* 2712	---
0658	2/6/2013	HMC	145	33.3	4.40	188	308	< 5.00	73.0	593	1270	1750	0.931
	10/29/2013	ENER	---	---	---	---	---	---	87.0	602	1300	* 2379	---
0681	3/18/2013	HMC	---	---	---	---	---	---	196	753	1830	2544	---
0846	2/19/2013	ENER	---	---	---	---	---	---	191	2500	4410	* 4997	---
	2/19/2013	ENER	---	---	---	---	---	---	# 192	# 2470	# 4270	---	---
	10/29/2013	ENER	473	125	6.80	712	300	< 5.00	192	2460	4290	* 6372	1.05
0862	5/3/2013	ENER	---	---	---	---	---	---	181	736	1870	* 2733	---
0864	2/25/2013	ENER	---	---	---	---	---	---	176	739	1700	* 2415	---
0866	5/3/2013	ENER	---	---	---	---	---	---	173	674	1790	* 2713	---
0869	3/18/2013	HMC	---	---	---	---	---	---	185	757	1770	2466	---
	6/17/2013	ENER	---	---	---	---	---	---	167	682	1770	* 2444	---
0881	2/8/2013	HMC	---	---	---	---	---	---	226	1060	2370	3075	---
	10/30/2013	ENER	272	77.5	8.80	337	446	< 5.00	209	967	2120	* 3603	1.04
0882	2/11/2013	HMC	---	---	---	---	---	---	172	746	1760	2465	---
	8/8/2013	ENER	214	55.2	5.50	285	447	< 5.00	170	718	1750	* 2992	1.02
0884	2/8/2013	HMC	---	---	---	---	---	---	201	1120	2270	3015	---
	8/8/2013	ENER	220	69.9	7.10	282	384	< 5.00	194	782	1920	* 3253	1.03
0885	8/8/2013	ENER	---	---	---	---	---	---	182	685	1840	* 3180	---

Signifies Quality Control Sample

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
0886	2/8/2013	HMC	---	---	---	---	---	---	190	970	2140	2803	---
	11/15/2013	ENER	198	48.9	7.20	325	529	< 5.00	178	684	1800	* 3239	1.00
0887	3/19/2013	ENER	---	---	---	---	---	---	292	992	2140	* 2940	---
0888	3/19/2013	ENER	---	---	---	---	---	---	175	841	1830	* 2494	---
	8/8/2013	ENER	---	---	---	---	---	---	---	873	1870	* 3300	---
0890	4/30/2013	ENER	---	---	---	---	---	---	226	949	2250	* 3014	---
0893	2/11/2013	HMC	---	---	---	---	---	---	232	900	2150	2874	---
	8/8/2013	ENER	250	66.5	7.80	289	500	< 5.00	203	789	1990	* 3324	1.01
0910	12/11/2013	ENER	---	---	---	---	---	---	34.0	321	814	* 1493	---
0935	12/11/2013	ENER	---	---	---	---	---	---	165	703	1730	* 2979	---
0994	4/4/2013	ENER	186	45.5	3.80	125	---	---	85.0	486	1170	* 1601	---
	10/30/2013	ENER	---	---	---	---	---	---	81.0	457	1130	* 1916	---
0996	8/8/2013	ENER	---	---	---	---	---	---	134	602	1560	* 2681	---
0999	3/20/2013	HMC	91.4	30.1	2.80	39.0	267	< 5.00	19.0	195	566	840	0.963
R1	8/14/2013	ENER	---	---	---	---	---	---	187	838	1940	* 3419	---
R2	8/9/2013	ENER	---	---	---	---	---	---	190	774	1800	* 3256	---
R3	8/12/2013	ENER	---	---	---	---	---	---	181	731	1860	* 3130	---
R4	8/6/2013	ENER	---	---	---	---	---	---	171	662	1780	* 3138	---
R5	8/16/2013	ENER	---	---	---	---	---	---	165	648	1710	* 3034	---
R6	8/16/2013	ENER	---	---	---	---	---	---	221	874	1810	* 3082	---
	11/19/2013	ENER	---	---	---	---	---	---	182	714	1830	* 3129	---
R7	8/16/2013	ENER	---	---	---	---	---	---	183	734	1850	* 3232	---
R8	8/16/2013	ENER	---	---	---	---	---	---	179	734	1830	* 3152	---
R9	11/13/2013	ENER	---	---	---	---	---	---	188	765	1830	* 3277	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
R10	11/13/2013	ENER	---	---	---	---	---	---	182	715	1810	* 3256	---
R11	11/13/2013	ENER	---	---	---	---	---	---	180	701	1780	* 3251	---
R12	11/14/2013	ENER	---	---	---	---	---	---	184	720	1840	* 3230	---
R13	11/14/2013	ENER	---	---	---	---	---	---	180	705	1810	* 3191	---
R14	11/14/2013	ENER	---	---	---	---	---	---	177	701	1780	* 3248	---
R15	11/14/2013	ENER	---	---	---	---	---	---	183	772	1880	* 3362	---
R16	11/14/2013	ENER	---	---	---	---	---	---	180	748	1860	* 3274	---
R17	11/18/2013	ENER	---	---	---	---	---	---	185	789	1880	* 3420	---
R18	11/18/2013	ENER	---	---	---	---	---	---	184	742	1800	* 3277	---
R19	11/18/2013	ENER	---	---	---	---	---	---	178	711	1850	* 3234	---
R20	11/18/2013	ENER	---	---	---	---	---	---	186	738	1810	* 3212	---
R21	11/18/2013	ENER	---	---	---	---	---	---	162	696	1620	* 2867	---
R22	11/19/2013	ENER	---	---	---	---	---	---	181	718	1810	* 3219	---
R23	11/14/2013	ENER	---	---	---	---	---	---	179	737	1860	* 3275	---
R47	12/20/2013	ENER	---	---	---	---	---	---	176	718	1760	* 3083	---
R57	12/20/2013	ENER	---	---	---	---	---	---	174	728	1760	* 3152	---

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
0522	5/13/2013	ENER	---	0.514	1.40	0.342	---	---	---	---	---
0532	3/20/2013	HMC	7.45	0.0048	< 0.0300	0.0070	2.90	0.170	---	---	---
0538	3/18/2013	HMC	---	0.174	---	0.0220	4.00	---	---	---	---
0540	5/3/2013	ENER	---	0.480	< 0.0300	0.0370	---	---	---	---	---
	11/14/2013	ENER	---	0.486	< 0.0300	0.0350	2.90	---	---	---	---
0541	8/8/2013	ENER	---	0.0975	< 0.0300	0.0260	4.20	---	---	---	---
0551	2/6/2013	HMC	7.39	0.0439	< 0.0300	0.0360	2.60	0.310	---	---	---
	8/8/2013	ENER	---	0.0483	< 0.0300	0.0380	---	---	---	---	---
0553	2/6/2013	HMC	7.61	0.0240	< 0.0300	0.0560	4.10	0.460	---	---	---
	8/8/2013	ENER	---	0.0246	< 0.0300	0.0300	---	---	---	---	---
0554	2/6/2013	HMC	7.48	0.0214	< 0.0300	0.0540	1.40	1.10	---	---	---
	8/8/2013	ENER	---	0.0191	< 0.0300	0.0370	---	---	---	---	---
0555	2/5/2013	HMC	7.46	0.0790	< 0.0300	0.0750	12.0	2.60	---	---	---
	8/15/2013	ENER	---	0.0874	< 0.0300	0.0720	---	---	---	---	---
0556	2/5/2013	HMC	7.44	0.0610	< 0.0300	0.0580	6.80	1.30	---	---	---
	8/15/2013	ENER	---	0.0645	< 0.0300	0.0670	---	---	---	---	---
0557	2/5/2013	HMC	7.41	0.0520	< 0.0300	0.0460	5.70	0.640	---	---	---
	8/15/2013	ENER	---	0.0524	< 0.0300	0.0550	---	---	---	---	---
0631	3/6/2013	ENER	---	0.0908	< 0.0300	0.0790	---	---	---	---	---
0632	3/6/2013	ENER	---	0.0851	< 0.0300	0.132	3.60	---	---	---	---
0634	11/23/2013	ENER	---	0.258	---	0.105	5.10	---	---	---	---
0647	2/6/2013	HMC	7.38	0.0456	< 0.0300	0.0520	3.40	0.100	---	---	---
	8/8/2013	ENER	---	0.0439	< 0.0300	0.0370	---	---	---	---	---
0649	2/6/2013	HMC	7.37	0.0262	< 0.0300	0.0450	1.70	0.180	---	---	---
	3/6/2013	ENER	---	0.0248	0.0500	0.0320	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
0649	8/15/2013	ENER	---	0.0239	< 0.0300	0.0370	---	---	---	---	---
0650	2/6/2013	HMC	7.46	0.0283	< 0.0300	0.0540	5.00	0.120	---	---	---
	8/15/2013	ENER	---	0.0279	< 0.0300	0.0390	---	---	---	---	---
0653	6/17/2013	ENER	---	0.280	---	0.0320	4.00	---	---	---	---
	11/14/2013	ENER	---	0.284	< 0.0300	0.0310	3.80	---	---	---	---
0657	5/13/2013	ENER	---	0.0622	< 0.0300	0.0390	---	---	---	---	---
	8/8/2013	ENER	---	0.0568	---	0.0360	3.70	---	---	---	---
0658	2/6/2013	HMC	7.40	0.0110	< 0.0300	0.0400	2.20	0.0200	---	---	---
	10/29/2013	ENER	---	0.0102	< 0.0300	0.0340	---	---	---	---	---
0681	3/18/2013	HMC	---	0.0450	< 0.0300	0.0150	---	---	---	---	---
0846	2/19/2013	ENER	---	0.0964	0.0500	0.181	---	---	---	---	---
	2/19/2013	ENER	---	# 0.0906	# < 0.0300	# 0.168	---	---	---	---	---
	10/29/2013	ENER	7.50	0.0618	< 0.0300	0.178	25.0	5.20	0.700	< 0.0100	0.0900
0862	5/3/2013	ENER	---	0.288	< 0.0300	0.0420	---	---	---	---	---
0864	2/25/2013	ENER	---	0.230	< 0.0300	0.0420	---	---	---	---	---
0866	5/3/2013	ENER	---	0.657	< 0.0300	0.0420	---	---	---	---	---
0869	3/18/2013	HMC	---	0.280	< 0.0300	0.0320	---	---	---	---	---
	6/17/2013	ENER	---	0.293	< 0.0300	0.0360	4.40	---	---	---	---
0881	2/8/2013	HMC	---	0.370	0.0500	0.0960	---	---	---	---	---
	10/30/2013	ENER	7.28	0.340	< 0.0300	0.0680	5.20	1.10	---	---	---
0882	2/11/2013	HMC	---	0.0517	< 0.0300	0.0080	---	---	---	---	---
	8/8/2013	ENER	7.69	0.0600	< 0.0300	< 0.0050	< 0.100	0.430	---	---	---
0884	2/8/2013	HMC	---	0.0361	< 0.0300	0.0840	---	---	---	---	---
	8/8/2013	ENER	7.59	0.0399	< 0.0300	0.0440	5.00	0.160	---	---	---
0885	8/8/2013	ENER	---	0.108	< 0.0300	0.0380	---	---	---	---	---

Signifies Quality Control Sample

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
0886	2/8/2013	HMC	---	0.306	< 0.0300	0.0870	---	---	---	---	---
	11/15/2013	ENER	7.49	0.628	< 0.0300	0.0370	2.60	1.80	---	---	---
0887	3/19/2013	ENER	---	0.0270	< 0.0300	0.0650	---	---	---	---	---
0888	3/19/2013	ENER	---	0.171	< 0.0300	0.0700	---	---	---	---	---
	8/8/2013	ENER	---	0.195	---	0.0710	5.50	---	---	---	---
0890	4/30/2013	ENER	---	0.267	< 0.0300	0.0700	---	---	---	---	---
0893	2/11/2013	HMC	---	0.193	< 0.0300	0.0800	---	---	---	---	---
	8/8/2013	ENER	7.45	0.182	< 0.0300	0.0510	2.20	0.0500	---	---	---
0910	12/11/2013	ENER	---	0.0101	< 0.0300	0.0160	---	---	---	---	---
0935	12/11/2013	ENER	---	0.142	< 0.0300	0.0340	4.30	---	---	---	---
0994	4/4/2013	ENER	7.68	0.0067	0.0700	0.0210	4.80	16.0	---	---	---
	10/30/2013	ENER	---	0.0060	< 0.0300	0.0220	---	---	---	---	---
0996	8/8/2013	ENER	---	0.0793	< 0.0300	0.0310	---	---	---	---	---
0999	3/20/2013	HMC	7.38	0.0043	< 0.0300	0.0090	3.20	0.220	---	---	---
R1	8/14/2013	ENER	---	0.216	< 0.0300	0.0310	---	---	---	---	---
R2	8/9/2013	ENER	---	0.459	< 0.0300	0.0340	---	---	---	---	---
R3	8/12/2013	ENER	---	0.582	< 0.0300	0.0370	---	---	---	---	---
R4	8/6/2013	ENER	---	0.507	< 0.0300	0.0430	---	---	---	---	---
R5	8/16/2013	ENER	---	0.291	< 0.0300	0.0450	---	---	---	---	---
R6	8/16/2013	ENER	---	0.106	< 0.0300	0.0290	---	---	---	---	---
	11/19/2013	ENER	---	0.0920	< 0.0300	0.0290	---	---	---	---	---
R7	8/16/2013	ENER	---	0.550	< 0.0300	0.0340	---	---	---	---	---
R8	8/16/2013	ENER	---	0.340	< 0.0300	0.0340	---	---	---	---	---
R9	11/13/2013	ENER	---	0.115	0.0500	0.0080	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
R10	11/13/2013	ENER	---	0.440	< 0.0300	0.0350	---	---	---	---	---
R11	11/13/2013	ENER	---	0.528	< 0.0300	0.0330	---	---	---	---	---
R12	11/14/2013	ENER	---	0.216	< 0.0300	0.0350	---	---	---	---	---
R13	11/14/2013	ENER	---	0.519	< 0.0300	0.0340	---	---	---	---	---
R14	11/14/2013	ENER	---	0.488	< 0.0300	0.0350	---	---	---	---	---
R15	11/14/2013	ENER	---	0.152	< 0.0300	0.0380	---	---	---	---	---
R16	11/14/2013	ENER	---	0.324	< 0.0300	0.0360	---	---	---	---	---
R17	11/18/2013	ENER	---	0.175	< 0.0300	0.0370	---	---	---	---	---
R18	11/18/2013	ENER	---	0.524	< 0.0300	0.0320	---	---	---	---	---
R19	11/18/2013	ENER	---	0.288	< 0.0300	0.0360	---	---	---	---	---
R20	11/18/2013	ENER	---	0.239	< 0.0300	0.0300	---	---	---	---	---
R21	11/18/2013	ENER	---	0.209	< 0.0300	0.0920	---	---	---	---	---
R22	11/19/2013	ENER	---	0.468	< 0.0300	0.0360	---	---	---	---	---
R23	11/14/2013	ENER	---	0.210	< 0.0300	0.0320	---	---	---	---	---
R47	12/20/2013	ENER	---	0.0950	< 0.0300	0.0300	---	---	---	---	---
R57	12/20/2013	ENER	---	0.212	< 0.0300	0.0400	---	---	---	---	---

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
0481	5/10/2013	ENER	9.80	1.90	1.30	454	310	< 5.00	98.0	587	1360	* 2130	1.01
0482	7/9/2013	ENER	---	---	---	---	---	---	260	670	1800	* 2425	---
0483	11/14/2013	ENER	---	---	---	---	---	---	383	1280	3030	* 4956	---
0493	2/8/2013	HMC	---	---	---	---	---	---	---	697	1650	2503	---
	7/8/2013	ENER	14.8	3.00	2.10	575	416	< 5.00	141	689	1610	* 2492	1.03
0494	2/8/2013	HMC	---	---	---	---	---	---	---	675	1790	2458	---
	7/8/2013	ENER	226	63.3	6.10	289	491	< 5.00	195	711	1830	* 2524	1.02
0498	11/14/2013	ENER	---	---	---	---	---	---	161	632	1680	* 3022	---
0538	3/18/2013	HMC	---	---	---	---	---	---	---	744	1750	2475	---
0653	6/17/2013	ENER	---	---	---	---	---	---	---	711	1790	* 2477	---
	11/14/2013	ENER	---	---	---	---	---	---	179	710	1740	* 3203	---
0859	11/19/2013	ENER	---	---	---	---	---	---	192	1020	2260	* 3906	---
0929	2/25/2013	ENER	---	---	---	---	---	---	167	686	1860	* 2894	---
0994	4/4/2013	ENER	186	45.5	3.80	125	---	---	85.0	486	1170	* 1601	---
	10/30/2013	ENER	---	---	---	---	---	---	81.0	457	1130	* 1916	---
ACW	12/9/2013	ENER	---	---	---	---	---	---	175	695	1720	* 3467	---
AW	12/9/2013	ENER	---	---	---	---	---	---	---	658	1710	* 3099	---
CE2	2/25/2013	ENER	---	---	---	---	---	---	150	801	1820	* 2507	---
CE5	2/25/2013	ENER	---	---	---	---	---	---	184	769	1920	* 2701	---
CE6	2/25/2013	ENER	---	---	---	---	---	---	---	574	2490	* 3281	---
CE7	7/8/2013	ENER	108	70.8	6.70	3750	2030	< 5.00	755	5440	11000	* 13600	1.04
CE8	2/27/2013	ENER	---	---	---	---	---	---	73.0	765	1660	* 2495	---
	9/4/2013	ENER	10.5	1.40	1.10	516	409	< 5.00	73.0	774	1620	* 2902	0.923
CE9	2/27/2013	ENER	---	---	---	---	---	---	---	689	1830	* 2594	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
CE10	9/4/2013	ENER	170	44.9	3.80	542	452	< 5.00	182	1300	2520	* 4119	0.901
CE11	2/25/2013	ENER	---	---	---	---	---	---	---	568	2520	* 3234	---
CE12	2/25/2013	ENER	---	---	---	---	---	---	157	936	2100	---	---
CE14	3/5/2013	HMC	237	54.9	4.40	277	548	< 5.00	170	661	1780	2443	1.03
	9/4/2013	ENER	---	---	---	---	---	---	155	661	1700	* 2303	---
CE15	3/5/2013	HMC	236	56.7	4.80	293	488	< 5.00	170	741	1840	2522	1.03
	9/4/2013	ENER	---	---	---	---	---	---	176	761	1860	* 3024	---
CF1	3/4/2013	HMC	121	0.600	73.5	612	< 5.00	47.0	148	1260	2300	4020	1.08
	11/21/2013	ENER	---	---	---	---	---	---	399	2470	4890	* 5546	---
CF2	3/4/2013	HMC	19.8	< 0.500	6.80	396	< 5.00	124	49.0	436	1160	2973	1.26
CW1	2/27/2013	ENER	---	---	---	---	---	---	98.0	613	1490	* 2290	---
CW2	2/11/2013	HMC	---	---	---	---	---	---	84.0	566	1310	2099	---
	2/27/2013	ENER	---	---	---	---	---	---	82.0	555	1350	* 2081	---
	11/4/2013	ENER	---	---	---	---	---	---	---	591	1440	* 2263	---
CW3	2/27/2013	ENER	---	---	---	---	---	---	62.0	819	1650	* 2393	---
CW17	6/24/2013	ENER	---	---	---	---	---	---	233	1340	2640	* 3260	---
	11/26/2013	ENER	---	---	---	---	---	---	232	1290	2560	* 4234	---
CW18	2/25/2013	ENER	---	---	---	---	---	---	198	679	1980	* 3028	---
CW28	2/25/2013	ENER	---	---	---	---	---	---	121	461	1280	* 2031	---
CW29	3/19/2013	ENER	---	---	---	---	---	---	163	722	1630	* 2340	---
	6/17/2013	ENER	151	41.1	5.40	324	373	< 5.00	160	720	1640	* 2330	0.975
CW31	12/3/2013	ENER	---	---	---	---	---	---	89.0	863	1620	* 2406	---
CW32	12/3/2013	ENER	---	---	---	---	---	---	463	1410	3280	* 4721	---
CW41	11/19/2013	ENER	---	---	---	---	---	---	80.0	299	898	1768	---
CW42	6/17/2013	ENER	---	---	---	---	---	---	176	706	1720	* 2451	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
CW42	11/14/2013	ENER	---	---	---	---	---	---	175	701	1730	* 3140	---
CW43	12/3/2013	ENER	---	---	---	---	---	---	172	1160	2340	---	---
CW44	11/14/2013	ENER	---	---	---	---	---	---	183	705	1830	* 3274	---
CW45	3/6/2013	ENER	---	---	---	---	---	---	---	679	1710	* 2475	---
	6/17/2013	ENER	---	---	---	---	---	---	171	645	1690	* 2452	---
	11/14/2013	ENER	---	---	---	---	---	---	173	645	1730	* 2393	---
CW50	11/26/2013	ENER	204	53.1	3.90	313	340	< 5.00	71.0	906	1730	* 2959	1.06
CW53	11/14/2013	ENER	---	---	---	---	---	---	186	705	1860	* 3549	---
CW55	12/3/2013	ENER	40.3	8.60	3.20	685	596	28.0	201	730	1950	* 2935	1.03
CW56	5/1/2013	ENER	369	83.4	6.30	493	328	< 5.00	257	1510	3020	* 3827	1.06
	8/7/2013	ENER	---	---	---	---	---	---	259	1460	2970	* 3751	---
CW57	5/10/2013	ENER	187	50.1	---	529	454	< 5.00	73.0	1300	2550	* 3406	---
CW60	5/10/2013	ENER	341	94.4	5.40	377	368	< 5.00	82.0	1610	3080	* 3510	0.983
CW61	5/10/2013	ENER	381	93.9	6.00	443	341	< 5.00	231	1670	3150	* 3973	0.981
CW62	5/14/2013	ENER	465	115	6.90	536	326	< 5.00	224	2060	3700	* 4429	1.03
CW73	12/20/2013	ENER	---	---	---	---	---	---	191	706	1810	* 3360	---
Q4	12/19/2013	ENER	---	---	---	---	---	---	170	648	1700	* 3067	---
R1	8/14/2013	ENER	---	---	---	---	---	---	187	838	1940	* 3419	---
R2	8/9/2013	ENER	---	---	---	---	---	---	190	774	1800	* 3256	---
R3	8/12/2013	ENER	---	---	---	---	---	---	181	731	1860	* 3130	---
R4	8/6/2013	ENER	---	---	---	---	---	---	171	662	1780	* 3138	---
R5	8/16/2013	ENER	---	---	---	---	---	---	165	648	1710	* 3034	---
R6	8/16/2013	ENER	---	---	---	---	---	---	221	874	1810	* 3082	---
	11/19/2013	ENER	---	---	---	---	---	---	182	714	1830	* 3129	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
R7	8/16/2013	ENER	---	---	---	---	---	---	183	734	1850	* 3232	---
R8	8/16/2013	ENER	---	---	---	---	---	---	179	734	1830	* 3152	---
R9	11/13/2013	ENER	---	---	---	---	---	---	188	765	1830	* 3277	---
R10	11/13/2013	ENER	---	---	---	---	---	---	182	715	1810	* 3256	---
R11	11/13/2013	ENER	---	---	---	---	---	---	180	701	1780	* 3251	---
R12	11/14/2013	ENER	---	---	---	---	---	---	184	720	1840	* 3230	---
R13	11/14/2013	ENER	---	---	---	---	---	---	180	705	1810	* 3191	---
R14	11/14/2013	ENER	---	---	---	---	---	---	177	701	1780	* 3248	---
R17	11/18/2013	ENER	---	---	---	---	---	---	185	789	1880	* 3420	---
R18	11/18/2013	ENER	---	---	---	---	---	---	184	742	1800	* 3277	---
R19	11/18/2013	ENER	---	---	---	---	---	---	178	711	1850	* 3234	---
R20	11/18/2013	ENER	---	---	---	---	---	---	186	738	1810	* 3212	---
R21	11/18/2013	ENER	---	---	---	---	---	---	162	696	1620	* 2867	---
R22	11/19/2013	ENER	---	---	---	---	---	---	181	718	1810	* 3219	---
R47	12/20/2013	ENER	---	---	---	---	---	---	176	718	1760	* 3083	---
R57	12/20/2013	ENER	---	---	---	---	---	---	174	728	1760	* 3152	---
WCW	11/26/2013	ENER	---	---	---	---	---	---	86.0	849	1600	* 3185	---
WR25	6/24/2013	ENER	---	---	---	---	---	---	136	2030	3510	* 4070	---
Y1	12/19/2013	ENER	---	---	---	---	---	---	171	727	1760	* 3451	---
Y3	12/20/2013	ENER	---	---	---	---	---	---	155	645	1570	* 3024	---
Y13	11/20/2013	ENER	---	---	---	---	---	---	188	742	1780	* 3384	---
Y22	11/20/2013	ENER	---	---	---	---	---	---	171	712	1720	* 3394	---
Y30	12/19/2013	ENER	---	---	---	---	---	---	159	678	1720	* 3286	---

* Signifies Specific Conductivity from HMC

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
Y33	11/19/2013	ENER	---	---	---	---	---	---	152	601	1480	* 2731	---
Y34	11/20/2013	ENER	---	---	---	---	---	---	161	721	1650	* 3098	---

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
0481	5/10/2013	ENER	7.30	0.0819	< 0.0300	0.123	1.80	0.300	0.700	< 0.0100	0.0300
0482	7/9/2013	ENER	---	0.144	0.0600	0.0240	1.90	---	---	---	---
0483	11/14/2013	ENER	---	0.143	0.0400	0.111	12.0	---	---	---	---
0493	2/8/2013	HMC	---	0.308	< 0.0300	0.119	---	---	---	---	---
	7/8/2013	ENER	8.26	0.309	< 0.0300	0.0970	2.20	0.770	-0.300	< 0.0100	0.300
0494	2/8/2013	HMC	---	0.123	0.0400	0.0280	---	---	---	---	---
	7/8/2013	ENER	7.50	0.150	0.0500	0.0260	2.20	0.0700	1.20	< 0.0100	0.300
0498	11/14/2013	ENER	---	0.504	< 0.0300	0.0390	1.90	---	---	---	---
0538	3/18/2013	HMC	---	0.174	---	0.0220	4.00	---	---	---	---
0653	6/17/2013	ENER	---	0.280	---	0.0320	4.00	---	---	---	---
	11/14/2013	ENER	---	0.284	< 0.0300	0.0310	3.80	---	---	---	---
0859	11/19/2013	ENER	---	0.0572	< 0.0300	0.0190	0.900	---	---	---	---
0929	2/25/2013	ENER	---	0.0442	< 0.0300	0.0220	---	---	---	---	---
0994	4/4/2013	ENER	7.68	0.0067	0.0700	0.0210	4.80	16.0	---	---	---
	10/30/2013	ENER	---	0.0060	< 0.0300	0.0220	---	---	---	---	---
ACW	12/9/2013	ENER	---	0.0451	< 0.0300	0.0540	---	---	---	---	---
AW	12/9/2013	ENER	---	0.137	0.110	0.0260	---	---	---	---	---
CE2	2/25/2013	ENER	---	2.48	2.17	0.215	---	---	---	---	---
CE5	2/25/2013	ENER	---	0.542	0.300	0.0630	---	---	---	---	---
CE6	2/25/2013	ENER	---	3.46	2.35	0.183	---	---	---	---	---
CE7	7/8/2013	ENER	7.91	26.0	32.7	0.689	6.00	0.240	-0.500	0.0200	1.000
CE8	2/27/2013	ENER	---	0.0584	0.0900	< 0.0050	---	---	---	---	---
	9/4/2013	ENER	8.13	0.0400	0.0700	< 0.0050	< 0.100	0.160	0.400	< 0.0100	0.0100
CE9	2/27/2013	ENER	---	0.262	0.0600	0.0210	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
CE10	9/4/2013	ENER	7.78	3.18	1.76	0.262	0.900	0.390	---	---	---
CE11	2/25/2013	ENER	---	2.72	1.70	0.127	---	---	---	---	---
CE12	2/25/2013	ENER	---	2.32	2.83	0.124	---	---	---	---	---
CE14	3/5/2013	HMC	7.33	0.0787	< 0.0300	0.0280	3.60	0.750	0.300	< 0.0100	0.100
	9/4/2013	ENER	---	0.0692	< 0.0300	0.0460	---	---	---	---	---
CE15	3/5/2013	HMC	7.27	0.378	0.240	0.0970	2.10	0.520	- 0.200	< 0.0100	0.200
	9/4/2013	ENER	---	0.338	0.240	0.0960	---	---	---	---	---
CF1	3/4/2013	HMC	11.6	0.0764	1.74	0.0590	0.800	0.460	0.400	< 0.0100	0.0600
	11/21/2013	ENER	---	8.11	4.07	0.108	---	---	---	---	---
CF2	3/4/2013	HMC	11.9	0.0095	1.30	0.0080	< 0.100	0.0900	0.300	0.0200	0.0600
CW1	2/27/2013	ENER	---	0.0505	< 0.0300	0.0300	---	---	---	---	---
CW2	2/11/2013	HMC	---	0.0457	< 0.0300	0.0650	1.30	---	---	---	---
	2/27/2013	ENER	---	0.0510	< 0.0300	0.0580	---	---	---	---	---
	11/4/2013	ENER	---	0.0563	< 0.0300	0.0510	---	---	---	---	---
CW3	2/27/2013	ENER	---	0.357	0.280	< 0.0050	---	---	---	---	---
CW17	6/24/2013	ENER	---	0.700	0.660	0.182	8.00	---	---	---	---
	11/26/2013	ENER	---	0.581	0.530	0.156	7.20	---	---	---	---
CW18	2/25/2013	ENER	---	0.0456	< 0.0300	0.0200	---	---	---	---	---
CW28	2/25/2013	ENER	---	0.0350	< 0.0300	0.0510	---	---	---	---	---
CW29	3/19/2013	ENER	---	0.223	< 0.0300	0.0590	---	---	---	---	---
	6/17/2013	ENER	7.80	0.212	< 0.0300	0.0530	3.40	2.80	---	---	---
CW31	12/3/2013	ENER	---	0.0165	< 0.0300	< 0.0050	< 0.100	---	---	---	---
CW32	12/3/2013	ENER	---	0.0021	< 0.0300	< 0.0050	< 0.100	---	---	---	---
CW41	11/19/2013	ENER	---	0.0321	< 0.0300	0.0250	3.10	---	---	---	---
CW42	6/17/2013	ENER	---	0.282	< 0.0300	0.0380	3.70	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
CW42	11/14/2013	ENER	---	0.318	< 0.0300	0.0390	3.00	---	---	---	---
CW43	12/3/2013	ENER	---	0.0470	< 0.0300	0.0390	1.40	---	---	---	---
CW44	11/14/2013	ENER	---	0.319	< 0.0300	0.0340	0.600	---	---	---	---
CW45	3/6/2013	ENER	---	0.476	< 0.0300	0.0300	---	---	---	---	---
	6/17/2013	ENER	---	0.454	< 0.0300	0.0440	1.80	---	---	---	---
	11/14/2013	ENER	---	0.482	< 0.0300	0.0390	1.80	---	---	---	---
CW50	11/26/2013	ENER	7.57	0.0380	< 0.0300	< 0.0050	< 0.100	1.10	0.600	< 0.0100	0.0800
CW53	11/14/2013	ENER	---	0.116	< 0.0300	0.0220	1.40	---	---	---	---
CW55	12/3/2013	ENER	7.79	0.0672	0.0400	0.0080	0.200	0.820	---	---	---
CW56	5/1/2013	ENER	7.54	4.28	3.65	0.312	10.00	0.640	0.0030	< 0.0100	0.0300
	8/7/2013	ENER	---	3.73	3.29	0.300	---	---	---	---	---
CW57	5/10/2013	ENER	7.36	0.161	< 0.0300	0.0970	14.0	0.720	- 0.700	0.0100	0.0500
CW60	5/10/2013	ENER	7.33	0.140	< 0.0300	0.0810	13.0	1.10	0.900	< 0.0100	0.100
CW61	5/10/2013	ENER	7.14	3.64	4.02	0.373	18.0	0.240	0.600	< 0.0100	0.0300
CW62	5/14/2013	ENER	7.35	3.04	2.35	0.336	16.0	0.590	1.40	< 0.0100	0.0300
CW73	12/20/2013	ENER	---	0.218	< 0.0300	0.0270	---	---	---	---	---
Q4	12/19/2013	ENER	---	0.423	< 0.0300	0.0440	---	---	---	---	---
R1	8/14/2013	ENER	---	0.216	< 0.0300	0.0310	---	---	---	---	---
R2	8/9/2013	ENER	---	0.459	< 0.0300	0.0340	---	---	---	---	---
R3	8/12/2013	ENER	---	0.582	< 0.0300	0.0370	---	---	---	---	---
R4	8/6/2013	ENER	---	0.507	< 0.0300	0.0430	---	---	---	---	---
R5	8/16/2013	ENER	---	0.291	< 0.0300	0.0450	---	---	---	---	---
R6	8/16/2013	ENER	---	0.106	< 0.0300	0.0290	---	---	---	---	---
	11/19/2013	ENER	---	0.0920	< 0.0300	0.0290	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
R7	8/16/2013	ENER	---	0.550	< 0.0300	0.0340	---	---	---	---	---
R8	8/16/2013	ENER	---	0.340	< 0.0300	0.0340	---	---	---	---	---
R9	11/13/2013	ENER	---	0.115	0.0500	0.0080	---	---	---	---	---
R10	11/13/2013	ENER	---	0.440	< 0.0300	0.0350	---	---	---	---	---
R11	11/13/2013	ENER	---	0.528	< 0.0300	0.0330	---	---	---	---	---
R12	11/14/2013	ENER	---	0.216	< 0.0300	0.0350	---	---	---	---	---
R13	11/14/2013	ENER	---	0.519	< 0.0300	0.0340	---	---	---	---	---
R14	11/14/2013	ENER	---	0.488	< 0.0300	0.0350	---	---	---	---	---
R17	11/18/2013	ENER	---	0.175	< 0.0300	0.0370	---	---	---	---	---
R18	11/18/2013	ENER	---	0.524	< 0.0300	0.0320	---	---	---	---	---
R19	11/18/2013	ENER	---	0.288	< 0.0300	0.0360	---	---	---	---	---
R20	11/18/2013	ENER	---	0.239	< 0.0300	0.0300	---	---	---	---	---
R21	11/18/2013	ENER	---	0.209	< 0.0300	0.0920	---	---	---	---	---
R22	11/19/2013	ENER	---	0.468	< 0.0300	0.0360	---	---	---	---	---
R47	12/20/2013	ENER	---	0.0950	< 0.0300	0.0300	---	---	---	---	---
R57	12/20/2013	ENER	---	0.212	< 0.0300	0.0400	---	---	---	---	---
WCW	11/26/2013	ENER	---	0.0022	< 0.0300	< 0.0050	< 0.100	---	---	---	---
WR25	6/24/2013	ENER	---	0.289	< 0.0300	0.0680	10.00	---	---	---	---
Y1	12/19/2013	ENER	---	0.495	< 0.0300	0.0550	---	---	---	---	---
Y3	12/20/2013	ENER	---	0.318	< 0.0300	0.0770	---	---	---	---	---
Y13	11/20/2013	ENER	---	0.567	< 0.0300	0.0380	---	---	---	---	---
Y22	11/20/2013	ENER	---	0.304	< 0.0300	0.0410	---	---	---	---	---
Y30	12/19/2013	ENER	---	0.193	< 0.0300	0.0390	---	---	---	---	---

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
Y33	11/19/2013	ENER	---	0.0577	< 0.0300	0.0780	---	---	---	---	---
Y34	11/20/2013	ENER	---	0.0721	< 0.0300	0.123	---	---	---	---	---

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

Ca THROUGH ION_BAL

Sample Point Name	Date	Lab	Ca (mg/l)	Mg (mg/l)	K (mg/l)	Na (mg/l)	HCO3 (mg/l)	CO3 (mg/l)	Cl (mg/l)	SO4 (mg/l)	TDS (mg/l)	Cond(calc.) (micromhos/	Ion_B (ratio)
#1 Deepwell	5/6/2013	ENER	241	79.7	12.4	307	---	---	238	754	2040	* 2840	---
	11/5/2013	ENER	---	---	---	---	---	---	---	748	1990	* 2770	---
#2 Deepwell	5/6/2013	ENER	219	71.7	10.6	243	---	---	197	661	1790	* 2462	---
	11/4/2013	ENER	---	---	---	---	---	---	---	695	1800	* 2566	---
0951R	3/6/2013	ENER	205	67.3	9.60	195	425	< 5.00	169	581	1490	* 2107	1.02

* Signifies Specific Conductivity from HMC

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

pH THROUGH Th-230

Sample Point Name	Date	Lab	pH (std. units)	Unat (mg/l)	Mo (mg/l)	Se (mg/l)	NO3 (mg/l)	Ra226 (pCi/l)	Ra228 (pCi/l)	V (mg/l)	Th230 (pCi/l)
#1 Deepwell	5/6/2013	ENER	7.28	0.0095	< 0.0300	0.0050	1.10	11.0	---	---	---
	11/5/2013	ENER	---	0.0080	< 0.0300	< 0.0050	---	---	---	---	---
#2 Deepwell	5/6/2013	ENER	7.44	0.0122	< 0.0300	0.0080	2.50	1.80	---	---	---
	11/4/2013	ENER	---	0.0108	< 0.0300	0.0070	---	---	---	---	---
0951R	3/6/2013	ENER	7.25	0.0377	0.0800	0.0090	4.00	1.70	---	---	---

APPENDIX C

ANNUAL ALARA AUDIT

Annual ALARA Audit for 2013

January 2014

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

Prepared by:

Environmental Restoration Group, Inc.
8809 Washington NE, Suite 150
Albuquerque, NM 87113

1.0 Introduction

On January 2 and 6 2014, Mike Schierman conducted the 2013 Annual ALARA Audit for the Homestake Mining Company (HMC) Grants Uranium Mill site. The audit was conducted in accordance with United States Nuclear Regulatory Commission (NRC) Regulatory Guide 8.31, "Information relevant to ensuring that occupational exposure at uranium mills will be as low as is reasonably achievable" (NRC, 2002a). Other applicable references included NRC Materials License Number SUA-1471 issued to HMC and NRC Regulatory Guides 8.10 ("Operating philosophy for maintaining occupation radiation exposures as low as is reasonably achievable [NRC, 1977]), 8.22 ("Bioassay at uranium mills" [NRC, 1988]), and 8.30 ("Health physics surveys in uranium recovery facilities" [NRC, 2002b]).

The following topics were covered in the audit:

- Follow-up on prior ALARA audits
- ALARA policy
- Radiation exposures
- Bioassay results
- Environmental monitoring
- Self-audits
- ALARA planning activities
- Worker training
- Radiation safety meetings
- Radiation surveys
- Overexposures
- Health physics staff
- Procedures, data collection, and management

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

Continuing activities at the site during 2013 included operating a reverse osmosis (RO) unit that supports the groundwater restoration program, drilling additional wells and replacing wells on the LTP, operating and maintaining the dewatering system for the LTP, and maintaining the groundwater restoration system. Work continues with flushing the LTP, which involves injecting water into wells and removing water from nearby collection wells. The groundwater restoration consists of pumping the groundwater collection wells, operating the evaporation ponds, injecting clean water into the contaminated aquifer, and operating the RO plant.

Site activities implemented in 2013 were the construction and operation of three new zeolite water treatment cells on top of the interim cover of the LTP. These cells are next to the pilot plant cell near the east end of the pile. The cells were used to treat large quantities of water pumped from off-site wells. The planning for upgrading the RO plant is also underway. Potential worker radiation exposure from these new activities is minimal.

The primary potential for occupational radiation exposure results from maintaining the pumps, valves, and piping associated with the tailings dewatering, evaporation ponds, and groundwater collection systems; operating the RO plant, drilling new wells into the tailings pile, and maintaining the spray system on the evaporation ponds.

2. 0 Discussion

The audit process involved developing its scope, gathering and reviewing relevant information, interviewing appropriate personnel, and writing this report. The reviews are summarized briefly below.

2.1 Follow-up on Previous Audit Recommendations

The last scheduled NRC audit occurred on August 21-22, 2012. The report indicated no findings or recommendations. The site is on a 2-year NRC inspection frequency: as such, no NRC inspections occurred in 2013. The last ALARA Audit occurred on December 4-5, 2012. No responses or actions by HMC were needed as a result of the 2012 audit. Thus, no recommendations or suggestions were included in the associated report.

2.2 ALARA Policy

The HMC corporate ALARA policy statement is included in its Standard Operating Procedure (SOP) HP-6, revised October 14, 2003. This policy statement commits management and personnel to be continually vigilant for means to reduce exposures. This policy has been implemented as evidenced by discussions with HMC management and staff, and by the incorporation of ALARA principles in worker training and preparation of radiation work permits. Additionally, the housekeeping at the HMC facility has improved noticeably over time; a demonstration of site management and personnel's the continuing commitment to improvement, as prescribed in the definition of ALARA

2.3 Radiation Exposures

2.3.1 External Exposures

Dosimeter data for 2013 showed that eight HMC and 57 contractor personnel were monitored. The maximum shallow dose equivalent (SDE) to an individual was 19 millirem per year (mrem/y). The deep and lens dose equivalents were similar to the SDEs. This summary does not include 3rd quarter data because they were not corrected for a control response. Thus, the reported does in the 3rd quarter overestimate external doses resulting from site activities. The 3rd quarter data should be corrected by Landauer for a control response. Fourth quarter data were not available for review during the audit.

Site personnel were returning the control dosimeter that is shipped with the personal dosimeters back to Landauer immediately upon receipt. This practice precludes correcting personal dosimeter results for the background response of all dosimeters and overestimates external doses resulting from site activities. The control badge should be stored where the personal dosimeters are stored while they are not in use (e.g. on the dosimeter board). This was discussed with HMC personnel during the audit, who will correctly manage future control dosimeters. We recommend a revision to SOP HP-5 that describes the appropriate method of managing personal dosimeters.

Environmental OSL dosimeters were placed at each of the high volume air monitoring stations and exchanged semiannually. The projected results based on the first half of 2013 were in the range of 100 -120 mrem/y, consistent with previous years.

The low exposures to personnel and at the monitoring stations reflect 1) the effort that management and workers have expended in maintaining exposures ALARA and 2) the low levels of gamma radiation in the work environment.

2.3.2 Internal Exposures from Long-Lived Particulate Sources

HMC does not require airborne particulate monitoring for occupational dose assessments since there are no dry exposed tailings or other significant sources of airborne particulate radionuclides. Invasive activities in the tailings and/or cover are normally accompanied by dust suppression with water, thus minimizing the generation of airborne particulates.

A high volume air particulate sampler was located (Location HMC- 8) for several years atop the LTP and continuous samples were collected until 2009. Historically, concentrations above background at this location were less than 1 percent of the relevant derived air concentration (DAC), supporting the following facts: 1) average airborne particulate concentrations during work activities on top of the pile are less than 10 percent of the relevant DAC; and 2) worker monitoring for airborne particulate is unnecessary, pursuant to 10 *Code of Federal Regulations* (CFR) 20.1502. Since these samples indicated near background concentrations of uranium, radium-226, and thorium-230, this sampler was moved to Location (HMC-1A) in 2010, downwind of the new evaporation pond (EP-3).

HMC has a "spot check program," consisting of a personnel scanning survey, where the potentially most exposed individual working under an RWP is monitored prior to leaving the site. One RWP (No. RWP1-2013) was issued in 2013 to cover Coyote Drilling Company personnel that were drilling replacement wells on the LTP. "Spot checks;" i.e., frisking workers and equipment to determine the levels of contamination, and performing exposure rate measurements in the work area, were performed for surface contamination: all values were below detection limits. Personal air sampler data were not collected during these spot checks. The spot check program also covers what usually is once-monthly routine maintenance of piping and pumps by HMC employees.

A review of the perimeter high volume air sample results for 2012 and the first half of 2013 indicates low concentrations of radioactive particulate in air. Currently the analytical laboratory reports air monitoring results for natural uranium, radium-226, and thorium-230. The above background quarterly average concentrations are less than 5 percent of the 10 CFR 20 Table 2 Effluent Concentrations.

A recommendation was made in 2011 for the analytical laboratory to report its method sensitivities for natural uranium. This recommendation was addressed in 2012, as described in the associated ALARA audit. Data collected in the 1st and 2nd quarter of

2013 did not contain these method sensitivities. The laboratory should be reminded to include this information in future monitoring reports.

2.3.3 Internal Exposure from Radon

Radon concentrations are measured at nine locations (eight on-site perimeter] and one background location) by a quarterly exchange of track-etch detectors. Each location contains a cluster of three detectors to evaluate precision: the average of the three detectors is reported. The highest concentration at the perimeter locations for the first three quarters of 2013 was 2.1 picocuries per liter (pCi/l) at HMC-5, which is within the range of previous measurements. Fourth quarter radon data were not available at the time of the audit.

HMC is aware that the RO building presents a potential source of concern for radon exposure. Water from collection wells is exposed to the atmosphere in the RO building and some dissolved radon will part to the building atmosphere. Ventilation fans in the building are operated twice daily prior to shift entry to exhaust this source. A continuously operating exhaust fan was added to the building sump in 2003 to further reduce radon concentrations. Two track-etch detectors were placed in the RO building work areas and read monthly during 2003: the monthly averages ranged from 4.5 to 14.5 pCi/l. This was a significant decrease from the levels measured in 2001 (47 pCi/l) and 2002 (21 pCi/l), prior to full installation of the existing building exhaust system. Currently, detectors are changed out quarterly. The average readings of the two detectors for the first three quarters of 2013 were 3.0 (1st quarter), 3.4 (2nd quarter), and 3.5 pCi/l (3rd quarter).

Radiation exposures in the RO Building are very low, for the following reasons: 1) Recorded worker occupancy time therein is low (typically a few hours per week) and 2) Working Level measurements from prior years showed very low radon daughter concentrations as compared to associated radon concentrations.

HMC continues to make considerable effort in reducing radiation exposure to workers in the RO building. The current concentrations are consistent with those made over the last few years. It is this auditor's opinion that no additional engineering and/or administration controls are necessary.

A track-etch detector was placed in the office of the administration building in the area proximal to the desks of the two non-radiation workers. The detectors were deployed primarily to assure that the non-radiation workers were not receiving a radiation exposure above normal background levels. The radon concentrations were 2.7 (1st quarter), 2.1 (2nd quarter), and 1.8 (3rd quarter). These concentrations are also representative of what one would expect of the entire office building since the doors between areas are kept open.

2.4 Bioassay Results

Results obtained in the bioassay program support the conclusion that worker uptake of uranium is low.

HMC SOP # calls for a semi-annual, routine sampling of urine for HMC employees. Semi-annual samples for regular employees are taken around December and June of each year. Semiannual samples for HMC employees were collected on June 27, 2013 and December 6, 2013. Contractor employees are sampled at the beginning and end of short-term projects.

In 2013, 120 and associated quality control (QC) samples were and submitted to an offsite laboratory. The QC samples consisted of at least one matrix spike and one blank per shipment. HMC obtained a uranium solution from the vendor laboratory and spikes one blank urine sample in each shipment with either 15 or 30 pCi/l. Sixty-two QC samples were submitted in 2013. The offsite laboratory is required to have a lower limit of detection (LLD) of 5 micrograms per liter (µg/l) for uranium. Any results equal to or exceeding 15 µg/l uranium must be investigated and appropriate mitigation measures taken. Personnel with urine samples exceeding 35 µg/l uranium must be placed on work restrictions to limit further intakes.

All results were below the required LLD, except for the spikes. The laboratory estimates for all spiked samples were within 30% of the known amount, which is the allowable tolerance.

2.5 Self Audits

The Radiation Protection Administrator (RPA) requires that the technicians prepare a monthly ALARA report. The report is intended to present data reflective of the operations and an accounting of the major activities for the month. In practice however, it contains most of the data forms generated for the month, with little summary or interpretation. Any problems encountered are expected to be presented in the monthly reports, although no problems were noted in the monthly reports. The reports provide the RPA with adequate information to ensure that exposures are being maintained ALARA. The auditor is comfortable that the RPA is aware of site operations, and because of limited activity at the site, would be made aware of any ALARA-related problems.

2.6 ALARA Planning Activities

HMC conducts all invasive work (work involving tailings material) by contractors under a radiation work permit (RWP). A single RWP related to work on top of the LTP was written to satisfy that requirement. HMC employees doing routine maintenance on pumps, piping, and valves are covered under the spot check program. No other known work involved tailings material. Spot checks are conducted to demonstrate that the requirements of the RWPs are appropriate and being followed. Spot check records of personnel were maintained and available.

2.7 Worker Training

All radiation workers receive formal classroom radiation safety training. Workers must pass a written examination. Annual refresher training is required and generally repeats the annual course material. Mike Schierman, Certified Health Physicist, conducted

annual training on January 2, 2014 for HMC personnel. Either HMC's RPA or Adrian Venable normally gives the contractor training. Videotapes and an examination developed for HMC by a consultant are incorporated into the contractor employee training. Records of contractor training and re-training were reviewed, including tests results. Based on this review, it appears contractor initial and refresher training is being conducted appropriately.

Mr. Jesse Toepfer assumed the role of RPA from Alan Cox in July 2013. Mr. Toepfer received 40 hours of Radiation Safety Officer training in May 2013.

2.8 Instrumentation and Area Radiation Surveys

A review of the instrument maintenance and calibration records was made. The calibrations of all instruments are current. Recalibrated is conducted annually by an approved vendor. A calibration schedule is used to track calibrations. The records were found in good order.

The available release surveys were reviewed by the auditor. No items other than contractor drilling rigs and other work trucks were reported as being surveyed for release from the site.

2.9 Health Physics Staff

The current health physics staff consists of Jesse R. Toepfer (RPA) and Adrian Venable (Senior Health Physics Technician)

A review of the education and experience of the staff indicated that all meet or exceed the requirements of NRC Regulatory Guide 8.31 for working in uranium mills.

2.10 Overexposures

No personnel were likely overexposed during this audit period.

2.11 Procedures, Data Collection, and Management

The HMC Environmental Procedures Manual was briefly reviewed. There is a requirement for these procedures be reviewed annually and revised if necessary. There was no review in 2013. The RPA needs to review the procedures as soon as possible. No procedures are currently under revision or preparation although recommendations stemming from this audit will change this if implemented. Radiation dosimetry, bioassay, environmental monitoring, worker training, instrument maintenance, and other related radiation safety files maintained by Mr. Venable appeared to be complete.

3.0 Recommendations

The radiation protection program (RPP) is effective in reducing radiation exposures to very low levels and possibly ALARA. Results from external and internal dosimetry monitoring programs demonstrate that the doses received by the HMC staff and contractors are very low and well within the limits allowed by regulations. Additional engineering and administrative controls taken by the staff demonstrate adherence to the ALARA policy. In particular, the housekeeping in and around the HMC facility is noticeably improved over years past.

The following recommendations for improving the RPP result from this audit.

- Procedures EM-2 and HP-5 should be revised to clearly describe the appropriate method to manage control dosimeters. This will result in a consistent way to account for control dosimeter responses as appropriate.
- Landauer needs to be contacted to revise the 3rd and possibly 4th quarter occupational dosimetry reports to correct for a control response.
- In general, forms documenting data collected as part of the RPP should be completely filled. If information requested on the form is superfluous, it should be omitted.
- Prompt review of the procedures manual is needed by the RPA.
- Energy Laboratories should be contacted and reminded to include method sensitivities in their uranium air monitoring results.

This audit did not result in any further suggestions for improving the RPP.

References

NRC, 2002a. NRC Regulatory Guide 8.31, Revision 1. "Information relevant to ensuring that occupational radiation exposures at uranium recovery facilities will be as low as is reasonably achievable," May.

NRC, 1977. NRC Regulatory Guide 8.10, Revision 1 "Operating philosophy for maintaining occupation radiation exposures as low as is reasonably achievable," May.

NRC, 1988. NRC Regulatory Guide 8.22, Revision 1. "Bioassay at Uranium Mills,"August.

NRC, 2002b. NRC Regulatory Guide 8.30, Revision 1. "Health Physics Surveys in Uranium Recovery Facilities," May.

APPENDIX D

INSPECTION OF TAILINGS PILES AND PONDS

Alan Kuhn Associates LLC
13212 Manitoba Dr. NE, Albuquerque, NM 87111 505 350 9188

February 13, 2014

File No.: HMC2013

Mr. Jesse Toepfer
Homestake Mining Company of California
P.O. Box 98
Grants, NM 87020

SUBJECT: REPORT OF 2013 ANNUAL INSPECTION OF TAILING IMPOUNDMENTS AND PONDS, HOMESTAKE GRANTS PROJECT, GRANTS, NEW MEXICO

Dear Mr. Toepfer:

On November 11, 2013 the undersigned performed the annual visual inspection of the tailing impoundments and evaporation ponds at the Homestake Grants Project located at Grants, New Mexico. As the Responsible Engineer for these impoundments, I am required to annually inspect the stability and functionality of the impoundments.

Subsequent to my visual inspection, I reviewed additional information including:

- Impoundment piezometer readings taken by Homestake personnel during 2013 and tabulated at various times through the year,
- Summary of tailing collection well and tailing drainage sump collection rates through 2013,
- Map of tailing impoundment phreatic levels most recently measured in 2013, provided by Hydro Engineering on February 6, 2014,
- The settlement monument survey performed by Souder Miller dated 11/20/2013,
- Sump discharges and large impoundment reinjection rates recorded by Homestake during 2013,
- Leak detection monitoring records for evaporation ponds #2 and #3,
- Pond level measurements by Homestake through 2013.

This report addresses the observations and findings of my site inspection as well as assessment of the additional information listed above.

OBSERVATIONS

The undersigned performed visual observations of the tops and outslopes of both tailing impoundments and of the dikes, slopes, and liners of the evaporation ponds. The weather was partly cloudy and cool with calm winds and temperatures in the 50's.

Large Tailing Impoundment

Overall, the surface of the large impoundment was in good condition. Repairs to the south outslopes riprap, performed in 2010, remain in good condition. Concrete inlet structures and the

new HDPE drainage pipes installed in 2010 are functioning as intended to direct runoff from the top cover into the pipes.

The riprap cover on the outslopes is intact and in good condition. The small washout reported last year, related to rupture of the old CMP pipe on the south outslope, has not reactivated since the new HDPE runoff discharge pipes were installed in 2010.

No washouts were evident at the time of my site visit on 11/11/13. However, in late December, 2013 Homestake informed me that one of the site crew had noticed an apparently recent depression near the top of the north outslope. On 1/3/2014, I examined the area of concern together with Homestake personnel. Figures 1-4 show the depression and the associated block of soil cover and riprap that collapsed into it. The depression starts approximately 30 feet downslope from the top of the north slope of the west cell of the LTP, extends from that point approximately 30 feet further downslope as an oval shape up to 15 feet wide. The deepest part is the upslope end of the oval, where the observable crack is measurable to about five feet below original cover surface. The area of concern is small and is not active at this time. It should remain unchanged as long as runoff is diverted to the HPDE pipe drains and away other low spots on the interim cover perimeter.

The depression appears to have resulted from runoff from the interim cover above the upslope limit of the radon barrier (cover) on the outslope. The interim cover consists of common fill and was not intended to be an infiltration barrier. Rainfall runoff probably drained to the low spot, infiltrated and formed a crack by piping of the interim cover and underlying sand below the outslope cover, emerging from the slope at the location of deposited sediment shown in Figure 1 and piping sediment from 1-2 feet below the cover along this pathway. Subsequently, probably shortly before it was noticed by Homestake personnel, the undermined cover cracked and collapsed, creating the visible depression in the cover depicted in Figures 1-4. There are no evident impacts to the radon barrier beyond the limits described above. This depression can be readily fixed using any of the several remedial measures discussed in the recommendations in this report.

A new zeolite cell system for ground water treatment near the south central part of the top cover was inactive at the time of this inspection but had been operating during the year. This system has had no evident negative impact on impoundment.

During 2012, Homestake applied several lignon-based erosion control products over a test section on the interim cover to determine which product is most effective in limiting wind erosion of the interim cover surface. At the time of this site visit, the product applied to test strip on the right end of the test area (facing the slope) appeared to be best at minimizing rills, and the product on the adjacent panel to its left was second best. The other products appeared to make no difference in rill development.

As part of its ground water restoration program, Homestake has continued to inject water into the large impoundment for flushing of residual contaminants at an average rate of 232 gpm during the past year, reduction of 32 gpm from 2012. No visible effects of injection on the impoundment stability were observed.

The sumps along the toe of the east end of the north outslope of the large impoundment have continued to collect the toe seepage that previously had emerged at the ground surface, leaving

wet soil and standing water in one low spot. At the time of this site visit, the ground surface appeared to be dry, leaving an alkali crust in the previously wet areas. The seepage is related to the clean water injection program to flush contaminants from the tailings, and not affecting the stability of the impoundment. These seeps will dry up permanently after the injection ceases.

The slope stability analysis of the large impoundment updated in 2010 is still valid for 2013; the stability parameters have not changed negatively during 2013 and are expected to gradually improve even more as the flushing program winds down. The static and pseudo-static factors of safety remain well above the design minimum values of 1.5 and 1.0, respectively.

Small Tailing Impoundment/ Evaporation Pond #1 (EP1)

The small impoundment (location of evaporation pond #1, or EP1) is in generally good condition. Although liner repairs performed in 2011 along approximately 200 feet of the south inslope of the pond from the southeast corner westward remain intact, the subgrade fill under the liner has slumped, forming a step or bench about 1-1.5 feet high about 3-4 feet below the crest of the slope. This same section of the pond slope had been reshaped for similar conditions in 2011.

HDPE drain pipes and the HDPE-liner runoff discharge chute on the south end of the small tailings pile, also installed in 2011, are functioning as intended and effectively discharging runoff.

On 11/11/13, EP1 pond water level was approximately four feet below crest elevation, 2.0 feet more than the required freeboard of 2.0 feet. The evaporative spray system was not operating. The wave dissipater booms were deployed near the east side and southeast corner.

Last year, Homestake applied several lignon-based erosion control products along the east outslope in panel sections from crest to toe. Each section, about 30 feet wide, has been observed over the year to determine which product is most effective in reducing rill formation. At the time of my site inspection, the product covering the northernmost section appeared to be most effective in rill control, followed closely by the next one to the south. The others appeared to have little effect on riling.

On the other outslopes around the small impoundment, on which no erosion control product had been applied, the normal pattern of riling exists. Rills were up to six inches on the North Slope, 4-6 inches deep on the southwest slope, and 6-12 inches deep on the southeast and east slopes. This amount of riling is consistent with the conditions that follow a normal monsoon season like that of 2013. Blading, typically performed after the end of monsoon season around late September-October, had not yet been completed for the season at the time of my inspection.

Evaporation pond #2 (EP2)

EP2 liner and outslopes are in good condition. The north and south outslopes are free of major rills. The south outslope gravel blanket is functioning well to provide additional erosion protection. On 11/10/13, the pond water depth was 19.7 feet, 3.3 feet below maximum pond level, and the freeboard was 5.30 feet. All evaporation sprays were operating normally.

Evaporation pond #3 (EP3)

EP3, constructed in 2010 and placed into operation in 2011, is functioning in accordance with design and the operating plan. On 11/11/13, the pond water depth in cell A was 9.0 feet, 2.0 feet below maximum pool level, giving a freeboard of about 4.0 feet. Cell B pond freeboard was about 6.5 feet water depth and average depth was 6.5 feet, 4.5 feet below maximum pool level. Evaporation sprays were operating in cell A.

The pond outslopes are in good condition, with only minor (1-2 inch) rills. There is no visible indication of slope deformation or leakage through the lining system. Cell B was drawn down during 2013 for repair to primary liner leakage in zone B3 but was mostly restored to near-normal water level on the date of this inspection.

RECORDS REVIEW

Large Impoundment Drainage

HMC's records injection and drainage/ withdrawal data for the large impoundment on a weekly basis. The average injection rate for the year was 232 gpm. Hydro Engineering reports that the dewatering well system average pumping rate for 2013 was 60.4 gpm and the toe drains and sumps of the large impoundment were collecting at an average rate of 17.7 gpm for 2013. Both of these rates are lower than 2012 rates.

EP2 and EP3 Leak Detection Systems

During 2013, Homestake continued to obtain weekly measurements of leakage through the primary liners collected in sumps of the leak detection and recovery system (LDRS) in Evaporation Pond #2 (EP2) and Evaporation Pond #3 (EP3) in accordance with DP 725, permit condition 18. Gallons of water removed through the collection sumps each week are recorded, and these records are maintained on site. These records show that leakage in the EP2 primary liner was highest for zone 2, which experienced maximums in August-September that equate to approximately 0.10-0.15 ft. average head across the bottom liner, representing a leakage flow rate well below the action levels defined in 40 CFR 264.222 as "the maximum design flow rate that the leak detection system can remove without the fluid head on the bottom liner exceeding 1 foot". Leakage in the other zones was well below the action levels, as well, and leakage rates did not reach levels requiring investigation and development of an action plan per DP 725.

In EP3, zone B-3 leakage was observed to continue from Nov.-Dec.2012 through April 2013 at rates higher than the other zones but still well below the 40 CFR264.222 action level. Although zone B-3 leakage rates were within collection capabilities of the LDRS (DP 725 condition 31c), Homestake contracted Leak Location Services (LLSI) of San Antonio, Texas to conduct an investigation to determine the location and likely cause of the leak. The leakage occurred along the primary liner panel seam close to the B-3 sump riser pipe and approximately 50 foot horizontally into the pond from the edge of the northeast slope. LLSI documented its investigation in a letter report to Homestake dated March 18, 2013. Homes take's liner contractor repaired the seam in April-May 2013.

On 11/11/13, the B-3 sump was discharging collected water back to the pond at a rate of 9 gpm, operating intermittently via a water level switch. Leak detection records for the year since May 2013 indicate that the leak repair has been successful. Primary liner leakage in the other zones has been intermittent and minor through 2013.

Piezometer and Settlement Monitoring

The large tailing impoundment flushing program continued during 2013. According to HydroEngineering (pers. comm., 2/6/2014), injection activity during 2013 has been concentrated again on the slimes in both cells of the impoundment. Large year-to-year fluctuations in piezometer (phreatic surface) levels, up to several tens of feet up (maximum of 47.4 feet) and down (maximum 49.0 feet), have accompanied either injection or withdrawal, respectively. None of these large fluctuations affected the impoundment outslopes.

The water level in piezometer CN1 on the north outslopes of the impoundment has fluctuated a few tenths of a foot but has been gradually declining over the past two years. CN1 is down 0.18 feet year to year since late 2012. CS1 on the south outslope is up 1.2 feet since October 2012. At the end of 2013, water level in piezometer CN1 was about 4.3 ft below the top of cover, and in CS1 the water level was about 6.0 ft below top of cover. Restraints on injection in wells located in the vicinity of the center dike and the adjacent north and south outslopes should continue to reduce phreatic levels in these areas.

The settlement-point survey was performed on 11/4-6/2013 by Souder Miller Associates and submitted to HMC on 11/20/2013. Survey data were reported for 48 points again. Of those, 22 points experienced slight (up to +0.14 ft) elevation increase, 17 points showed slight (up to -0.08 ft) decrease, and nine points displayed no change. No pattern in changes was apparent in these data. All of the changes in settlement point elevations are small, +0.14 to -0.08 ft, and only four changes exceeded the expected range of survey accuracy band of +/- 0.05 feet. Otherwise, the survey data display no trends in settlement indicative of consolidation and dewatering of the tailings or patterns of heave from water injection of the flushing program.

CONCLUSIONS AND RECOMMENDATIONS

The tailing impoundments and the three evaporation ponds are in generally good condition and are being maintained within the operating limits of the NRC license and NMED permits and the respective facility designs. However, the slump along the south inslope of EP1 should be protected against further displacement to protect the liner. The undersigned will confer with Homestake to develop an action plan for this.

The piezometers in the slopes of the large impoundment should continue to be measured on a quarterly basis until the cessation of the injection program. Near any piezometer in which the local phreatic surface is within 10 feet of the collar elevation, injection should be limited to prevent further rise of the saturated zone. Injection activity should remain suspended near piezometers CN1, WS1 and CS1 until water levels there drop below 10 feet from top of cover.

While the large tailing impoundment flushing program continues and water levels in the impoundment slopes are less than five feet below the top of cover on the slopes, these outslopes should be observed by site staff at least weekly for signs of water emerging from the slope, especially near the toe, and for visible evidence of slumps or other displacements in the

slope surface. The undersigned should be notified immediately if seepage from the slopes or if surface slumps or other deformations in the slopes are observed.

Such action was taken by Homestake when the north-slope washout was observed in December 2013, and remedial action should be taken to fill the washed-out space and restore the outslope surface. Several remedial options were considered including excavation and replacement of the collapse block using heavy equipment, covering the collapse block with compacted soil and rock, and backfilling the collapse and washout voids with flowable fill. The preferred remedial action is backfilling with Controlled Low Strength Materials (CLSM) or what is otherwise known as flowable fill. The other two options involve use of heavy earthmoving equipment on a relatively step slope covered with rock and partially undermined by the washout void, the extent of which is not well known at this time. Substantial safety issues and extensive disturbance of the intact slope cover are unavoidable with these two options. CLSM avoids these problems by minimizing the surface disturbance and the equipment and personnel working on the slope surface.

CLSM is a mixture of soil, Portland cement and enough water to allow the material to flow into the fissures and voids caused by the washout and collapse of the cover block. CLSM is commonly used in civil construction to backfill around buried pipes and in narrow spaces too small to backfill with compacted dry soil. The water content of the mixture can be modified to make the CLSM flow into spaces of different sizes. When placed on the outslope, sand bags can be used to contain the wet CLSM to the target zones. Upon setting, the CLSM will have the consistency of stiff dry sandy clay with unconfined compressive strength of 50-200 psi, depending on the cement content. This strength range is adequate for restoring the outslope cover thickness for both radon attenuation and water barrier functions, followed by replacement of bedding and rock to restore the riprap blanket. The materials and equipment needed for the CLSM option are available in the local area.

To prevent a similar washout from occurring in the future, the interim cover grade should be modified to remove low spots between the HDPE pipe drains installed a few years ago to control runoff from the top of the LTP. As soon as possible, the interim cover should be graded toward each HDPE drain so that no low spots remain between the pipe collars along the perimeter of the cover. Repair of the washout using CLSM should not be attempted until overnight temperatures remain above freezing, because ice crystals in the mix water will cause the CLSM mix to separate and not attain the necessary solid properties.

LIMITATIONS

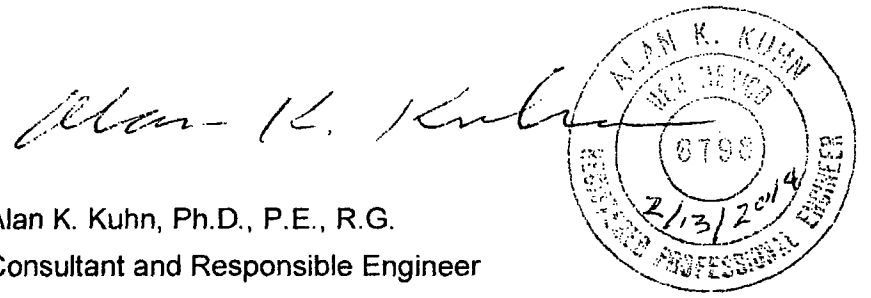
The recommendations contained in this report are based on the undersigned's field visit, evaluation of information generated by others and obtained from Homestake, and his understanding of the inspected facilities. If any conditions are encountered at this site which are significantly different than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

This report was prepared in accordance with generally accepted standards of practice at the time the report was written. No warranty, express or implied, is made. It is the Client's responsibility to see that all parties to the project are made aware of this report in its entirety.

The information contained in this report should be used at the Owner's and Contractor's option and risk.

If you have any questions or need additional information, please contact me.

Respectfully submitted,



Alan K. Kuhn, Ph.D., P.E., R.G.
Consultant and Responsible Engineer

Figure 1 – LTP north slope washout viewed downslope from top of slope. Sediment in middle of picture is below the zone of concern.

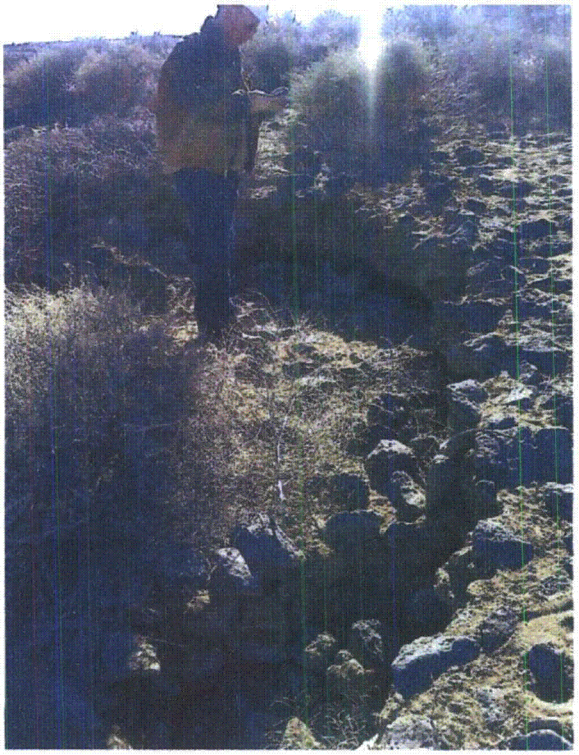


Figure 2 – Top and west edge of LTP north slope washout, showing D. Kump standing on the collapsed block of cover.

Figure 3 – Top and east edge of the LTP north slope washout, collapsed cover block to the lower right.

Figure 4 – Crack in cover along west edge of collapsed cover block in LTP north slope.

APPENDIX E

GRANTS RECLAMATION PROJECT
LAND USE REVIEW / SURVEY

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GRANTS RECLAMATION PROJECT
LAND USE REVIEW / SURVEY

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FIGURES

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Grants Reclamation Project

Land Use Review / Survey

Annual Report No. 12 - CY2013

1.0 Background

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

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

2.0 2013 – Land Use – Homestake Properties

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

Much of the HMC lands held in the area that are not in immediate proximity to the tailings pile complex have been, and are continuing to be, utilized for livestock grazing on a lessor/lessee tenant arrangement. Much of the current land area within the immediate Site Boundary area containing the evaporation ponds, RO plant and both tailings pile areas and office / shop compound have been excluded from livestock grazing and other land use except those directly related to the ongoing ground-water restoration activities. These areas have been livestock fenced to exclude grazing; certain small areas in the southern and western portions of land within the Site Boundary are, however, seasonally utilized for livestock grazing.

Several small lot / small acreage parcels [e.g. residential lot(s)] held by HMC in the general area of the reclamation site are idle and are essentially not in use

except in certain instances where fresh water injection and water collection is underway as part of the ongoing groundwater restoration program or are under agricultural use on selected lot(s). For example, Block 1 Lot 5 and Block 2 Lot 2 in Murray Acres were planted and irrigated in 2008 through 2013.

The other significant land use activity situated on HMC-held lands in the area includes land treatment / crop irrigation utilized for crop production. Water used for irrigation is an integral part of the ongoing ground-water restoration and cleanup program for the project. Prior to 2002, HMC had 270 acres of land under irrigation consisting of flood irrigation area comprising 120 acres and a center pivot spray irrigation area comprising 150 acres. During 2002, an additional center pivot irrigation system was commissioned that comprises 60 acres. In 2003, an additional 24 acres of flood irrigation was added to the irrigation system in Section 33. In 2005, the 60 acre center pivot irrigation system was expanded by 40 acres to a total of 100 acres.

For 2013, HMC lands were not crop irrigated except the two lots in Murray acres (see project location Figure 2.1-1 in report Section 2.1 of this annual report for location of the four areas available for irrigation activity).

3.0 2013 – Land Use – Pleasant Valley Estates, Murray Acres, Broadview Acres, Felice Acres and Valle Verde Residential Subdivisions

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

An assessment of current land use in these four subdivision areas was undertaken in early 2014 to provide an annual review of the present uses, occupancy and status for the various lots within these subdivisions. Over the years, permanent residential homes, modular homes and mobile homes have been established in the subdivision areas, and immediate adjacent areas, as would typify a rural residential neighborhood. A number of lots remain vacant, or are utilized for uses such as horse barns, corrals, equipment storage, etc. In some cases, dwellings are present on several lots throughout the subdivisions but are currently vacant or have been permanently abandoned and in various states of disrepair.

This year, the annual review also included an assessment of the residential areas adjacent to Felice Acres, Pleasant Valley Estates and the Valle Verde residential areas and adjacent lots as was done for 2006 through 2012 surveys.

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

The survey conducted in early 2014 consisted of first obtaining the records and customer database from the Village of Milan water district. This information was reviewed to prepare a separate residential customer database for the subdivisions that would reflect the lot number, customer, water meter customer ID number and whether the customer utilized Milan water during 2013. See Tables E-1 through E-5 for 2013 database information.

A lot-by-lot reconnaissance was made in each of the subdivisions to determine whether each lot was occupied or vacant, contained a residence(s), and which residences are currently occupied. This information was then checked against the database to determine whether each occupied residence is supplied and metered through the Village of Milan water supply system. Results of this reconnaissance effort are summarized on the subdivision plat maps; see attached Figures E-1 through E-5.

Field review of the subdivisions areas, along with follow-up inquiries as required to confirm the status of water use at each property, indicates that occupied residential sites in, or immediately adjacent to the Felice Acres, Broadview Acres, Murray Acres, and Pleasant Valley subdivisions are on metered water service with the Village of Milan; exceptions to this overall status are discussed below.

In the Valle Verde residential area and immediately adjacent to the subdivision, one residence was identified that is not on the Village of Milan water supply system and is therefore obtaining domestic-use water from private well supply. This residence is currently on a domestic well supply and this property owner has stated that he does not want to be hooked up to the Village water supply system.

4.0 New Milan Water Hook-Ups

Homestake (HMC) and the New Mexico Environment Department - Superfund Oversight Section entered into and executed a Memorandum of Agreement (MOA) in January 2009 regarding private well supplies utilized for domestic household use in the area. The MOA established an Area of Concern (AOC) wherein those residences within the area that are not on the Village of Milan water supply for domestic potable water use should be contacted and given the opportunity to be hooked up to that supply with HMC covering the cost of the hookup. Additionally, those residents in the AOC area that arranged for Village hookup after January 2004 would be reimbursed for the related costs if cost records are supplied to HMC. Eight (8) residents in the AOC were identified as eligible for reimbursement of Village potable water supply hookup costs pursuant to terms of the MOA. The current status is as follows:

• Number of residents reimbursed	5
• Number of residents not interested in reimbursement	1
• Number of residents not providing necessary cost detail	2
TOTAL	**8**

The last significant facet of the MOA addresses the concern with regard to an offer by HMC to residential property owners in the AOC to arrange for and pay for plugging and abandonment of private wells in the area. In 2010, HMC mailed notice letters and offers to property owners in the MOA that extends the opportunity to have their well(s) plugged and abandoned. The time period for well owners to respond, as specified in the AOC, was reached during 2010. Six property owners have indicated a desire to have their well(s) plugged; HMC will be advancing discussions with these property owners to get the subject wells plugged and abandoned. Communications are underway with the New Mexico State Engineers Office (OSE) regarding preparation of plug and abandon permits for these six wells; the permits are currently being drafted with the necessary information to secure the permits. Permit filing occurred during the second quarter 2012.

As of December 2012, no residences within the MOA Area of Concern (AOC) are pending with respect to a domestic water supply hook-up to the Village of Milan municipal water supply; all other known and identified residences are currently on the Village municipal supply, except for the one residence in Valle Verde which has stated that he is not interested in being hooked up to the Milan water system. This residential hookup in the Valle Verde area is discussed above in Sec 3.0 of this report.

5.0 Conclusion

The review of land use for HMC properties and the five residential subdivision areas to the south and west of the Grants Reclamation Project site indicates that present land uses in the area have not changed significantly. As a result of the annual survey of the residential areas within the Memorandum of Agreement (MOA) Area of Concern (AOC) during early 2014, no residential properties remain to be addressed in terms of providing a domestic water supply hookup. Survey results indicate that all other water users in the AOC area are supplied by the Village of Milan water supply, except the one Valle Verde residence that has stated he is not interested in being hooked up to the Milan water system.

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

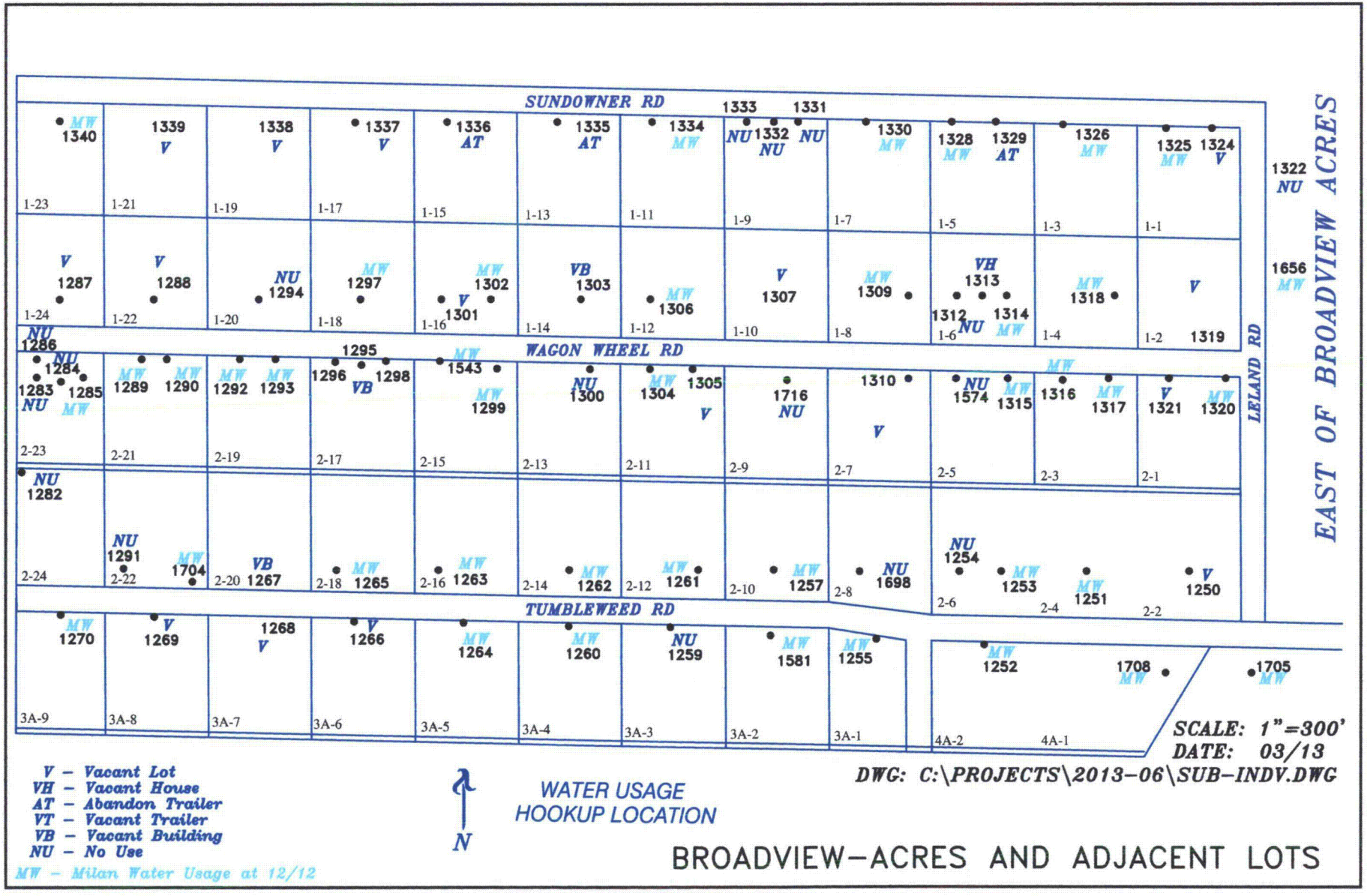


FIGURE E-1. BROADVIEW ACRES-LAND USE STATUS AND WATER USE

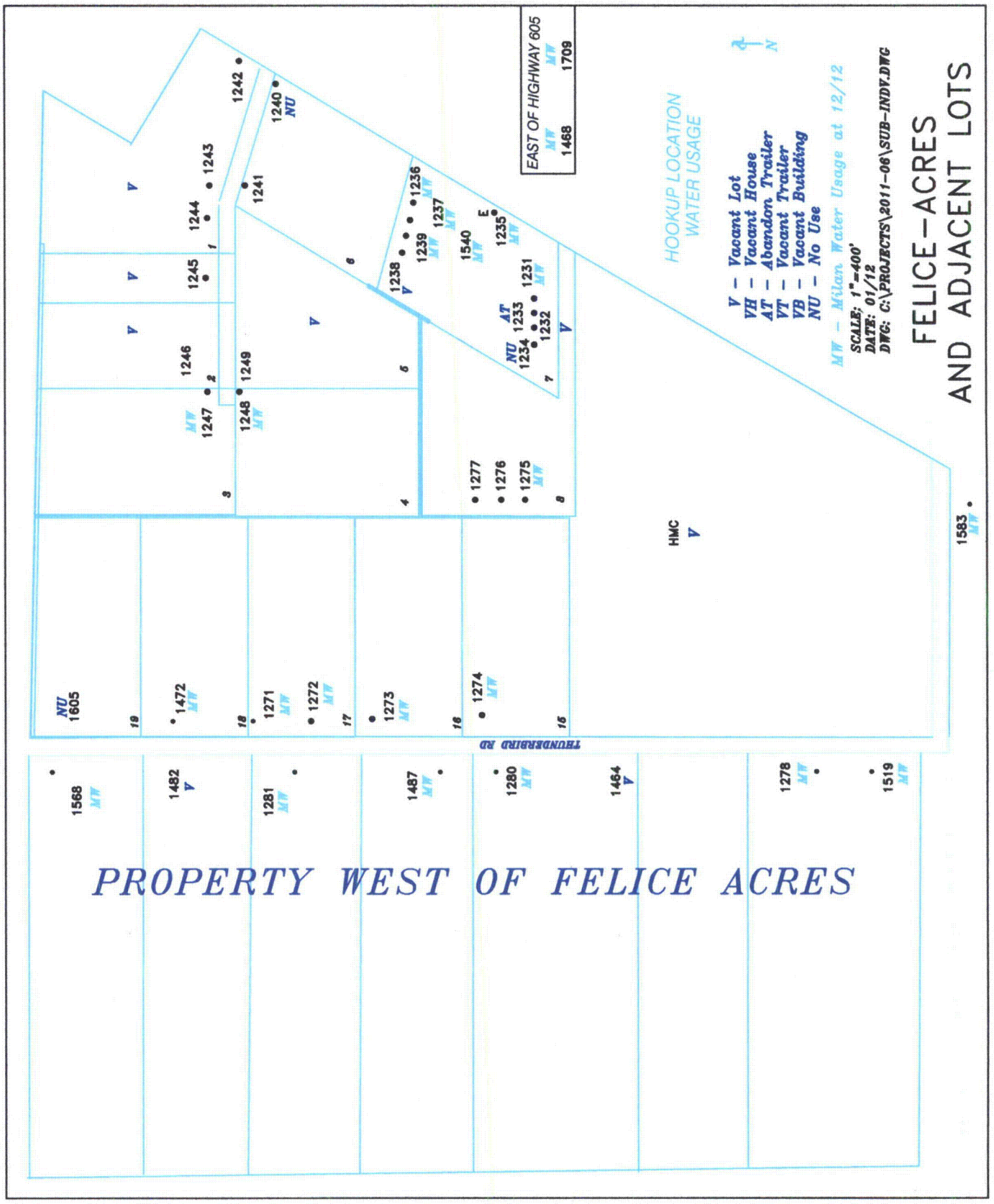


FIGURE E–2. FELICE ACRES – LAND USE STATUS AND WATER USE

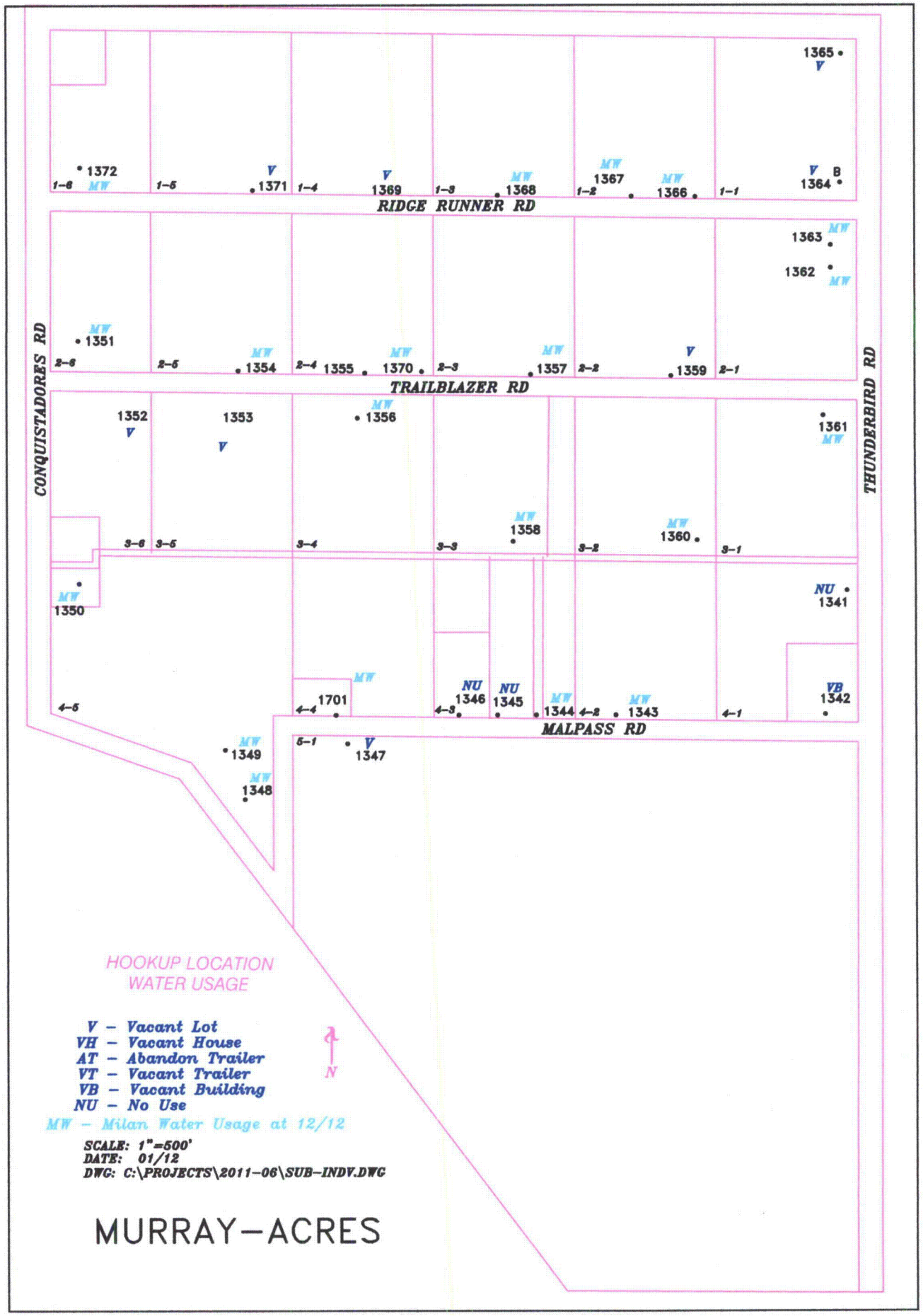


FIGURE E–3. MURRAY ACRES–LAND USE STATUS AND WATER USE

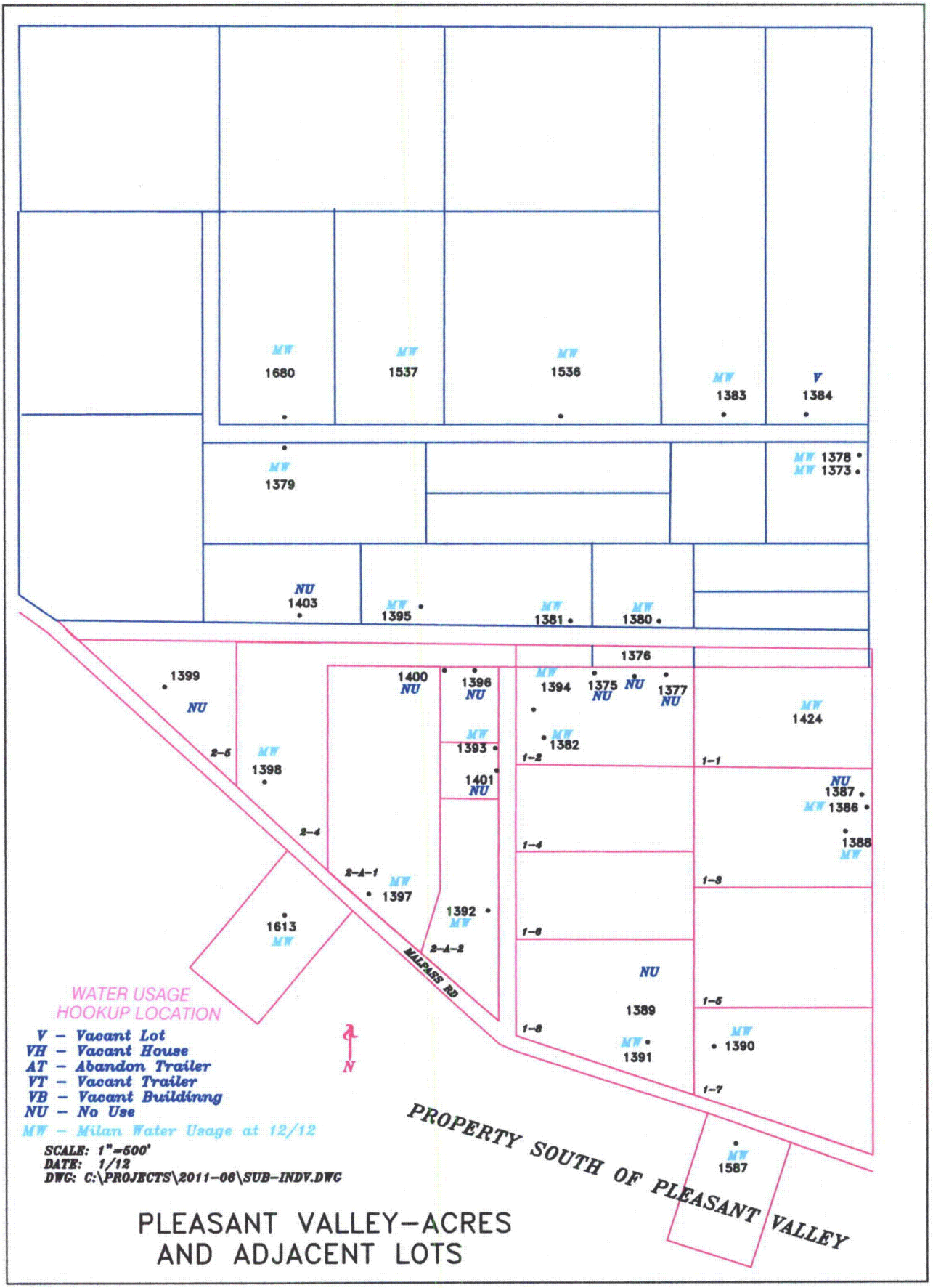


FIGURE E–4. PLEASANT VALLEY ESTATES–
LAND USE STATUS AND WATER USE

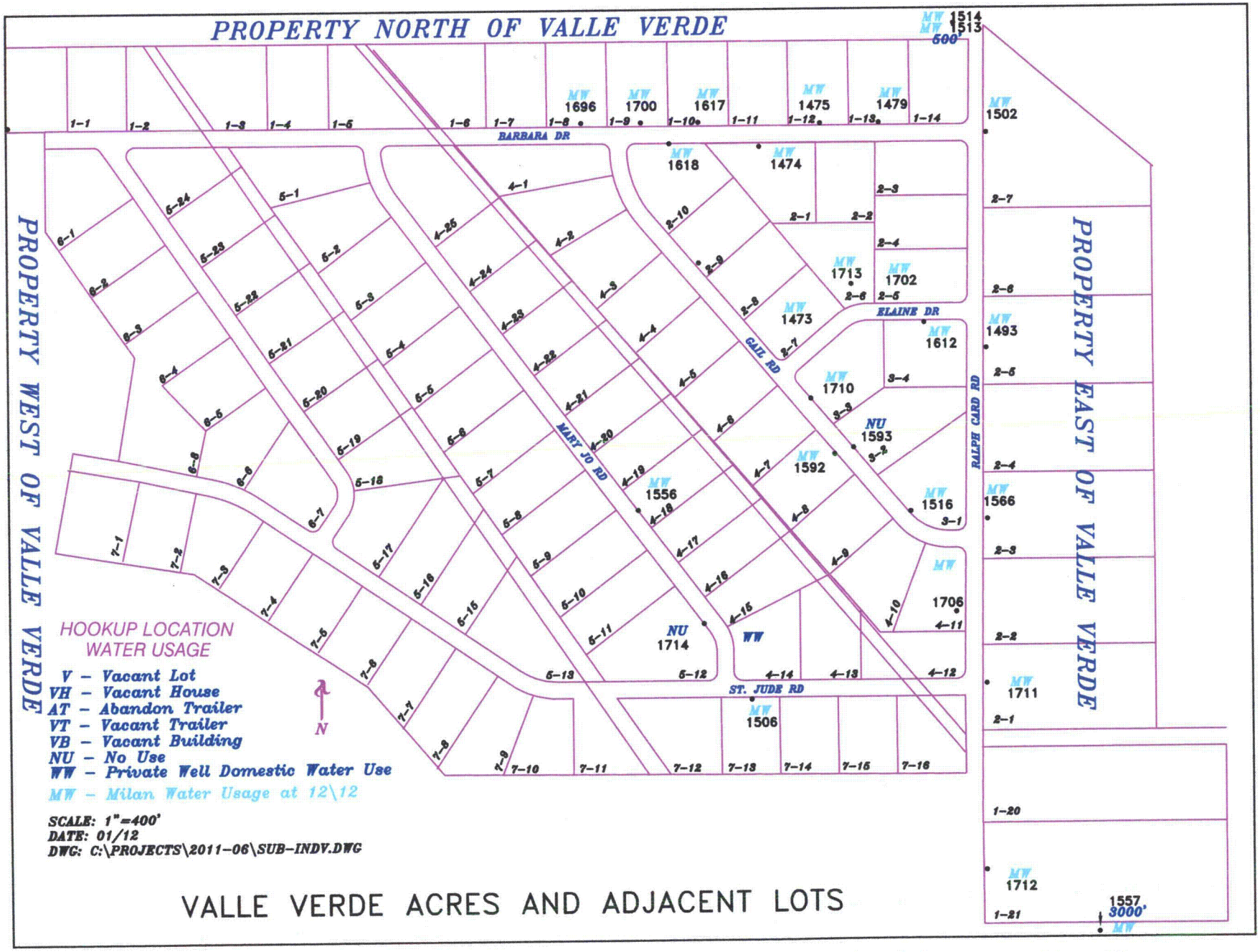


FIGURE E-5. VALLE VERDE ACRES-LAND USE STATUS AND WATER USE

TABLE E-1 WATER USE OF MILAN WATER IN BROADVIEW ACRES AND ADJACENT LOTS

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013 WATER USAGE
1 / 1	1324		
1 / 1	1325	X	X
1 / 2	1319		
1 / 3	1326	X	X
1 / 4	1318	X	X
1 / 5	1328	X	X
1 / 5	1329		
1 / 6	1312		
1 / 6	1313		
1 / 6	1314	X	X
1 / 7	1330	X	X
1 / 8	1309	X	X
1 / 9	1331		
1 / 9	1332		
1 / 9	1333		
1 / 10	1307		
1 / 11	1334	X	X
1 / 12	1306	X	X
1 / 13	1335		
1 / 14	1303		
1 / 15	1336		
1 / 16	1301		
1 / 16	1302	X	X
1 / 17	1337		
1 / 18	1297	X	X
1 / 19	1338		
1 / 20	1294	X	
1 / 21	1339		
1 / 22	1288		
1 / 23	1340	X	X
1 / 24	1287		
2 / 1	1320	X	X
2 / 1	1321		
2 / 2	1250		
2 / 3	1316	X	X
2 / 3	1317	X	X
2 / 4	1251	X	X

TABLE E-1 WATER USE OF MILAN WATER IN BROADVIEW ACRES AND ADJACENT LOTS

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013 WATER USAGE
2 / 5	1315	X	X
2 / 5	1574		
2 / 6	1253	X	X
2 / 6	1254		
2 / 7	1310		
2 / 8	1698		
2 / 9	1308		
2 / 10	1257	X	X
2 / 11	1304	X	X
2 / 11	1305		
2/12	1261	X	X
2 / 13	1300		
2 / 14	1262	X	X
2 / 15	1299	X	X
2 / 15	1543	X	X
2 / 16	1263	X	X
2 / 17	1295		
2 / 17	1296		
2 / 17	1298		
2 / 18	1265	X	X
2 / 19	1292	X	X
2 / 19	1293	X	X
2 / 20	1267		
2 / 21	1717	X	X
2 / 21	1290	X	X
2 / 22	1291	X	
2 / 22	1704	X	X
2 / 23	1283		
2 / 23	1284		
2 / 23	1285	X	X
2 / 23	1286		
2 / 24	1282		X
3A / 1	1255	X	X
3A / 2	1581	X	X
3A / 3	1259		
3A / 4	1260	X	X
3A / 5	1264	X	X

TABLE E-1 WATER USE OF MILAN WATER IN BROADVIEW ACRES AND ADJACENT LOTS

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013 WATER USAGE
3A / 6	1266		
3A / 7	1268		
3A / 8	1269		
3A / 9	1270	X	X
4A / 1	1708	X	X
4A / 2	1252	X	X
	1705	X	X
	1716	X	

EAST OF BROADVIEW ACRES			
	1322		
	1656	X	X

TABLE E-2 WATER USE OF MILAN WATER IN FELICE ACRES AND ADJACENT LOTS

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013 WATER USAGE
1	1242		
1	1243		
1	1244		
2	1245		
2	1246		
3	1247	X	X
4	1248	X	X
5	1249		
6	1240	X	
6	1241		
7	1231	X	X
7	1232		
7	1233		
7	1234	X	
7	1235	X	X
7	1236	X	X
7	1237	X	X
7	1238		
7	1239	X	X
7	1540	X	X
8	1275	X	X
8	1276		
8	1277		
9			
10			
11			
12			
13			
14			
15	1274	X	X
16	1273	X	X
17	1271	X	X
17	1272	X	X
18	1472	X	X
19	1605		

PROPERTY WEST OF FELICE ACRES			
	1519	X	X
	1278	X	X

TABLE E-2 WATER USE OF MILAN WATER IN FELICE ACRES AND ADJACENT LOTS

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013 WATER USAGE
	1279		
	1280	X	X
	1464		
	1487	X	X
	1281	X	X
	1482		
	1568	X	X
PROPERTY SOUTH OF FELICE ACRES			
	1583	X	X
PROPERTY EAST OF FELICE ACRES			
	1468	X	X
	1709	X	X
	1718	X	X
	1719	X	X
	1720	X	X

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

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013WATER USAGE
1 / 1	1364		
1 / 1	1365		
1 / 2	1366	X	X
1 / 2	1367	X	X
1 / 3	1368	X	X
1 / 4	1369		
1 / 5	1371		
1 / 6	1372	X	X
2 / 1	1362	X	X
2 / 1	1363	X	X
2 / 2	1359		
2 / 3	1357	X	X
2 / 4	1355		
2 / 4	1370	X	X
2 / 5	1354	X	X
2 / 6	1351	X	X
3 / 1	1361	X	X
3 / 2	1360	X	X
3 / 3	1358	X	X
3 / 4	1356	X	X
3 / 5	1353		
3 / 6	1352		
4 / 1	1341	X	
4 / 1	1342		
4 / 2	1343	X	X
4 / 3	1344	X	X
4 / 3	1345	X	
4 / 3	1346		X
4 / 4	1701	X	X
4 / 5	1349	X	X
4 / 5	1350	X	X
5 / 1	1347		
	1348	X	X

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

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012 WATER USAGE	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013 WATER USAGE
1 / 1	1424	X	X
1 / 2	1375		
1 / 2	1376		
1 / 2	1377		
1 / 2	1382	X	X
1 / 2	1394	X	X
1 / 3	1386	X	X
1 / 3	1387		
1 / 3	1388	X	X
1 / 3	1424	X	X
1 / 7	1390	X	X
1 / 8	1389		
1 / 8	1391	X	X
2 / 4	1398	X	X
2 / 5	1399		
2 / A1	1397	X	X
2 / A2	1392	X	X
2 / A2	1393	X	X
2 / A2	1396		
2 / A2	1400		
2 / A2	1401		
	1373	X	X
	1378	X	X
	1379	X	X
	1380	X	
	1381	X	X
	1383	X	X
	1384		
	1395	X	X
	1403		
	1536	X	X
	1537	X	X
	1680	X	X
PROPERTY SOUTH OF PLEASANT VALLEY ESTATES			
17 - 2	1587	X	X
11 - 2	1613	X	X

TABLE E-5 WATER USE IN VALLE VERDE AND ADJACENT LOTS

SUBDIVISION BLOCK / LOT	CUSTOMER NUMBER SITE ID	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2012WATER USAGE	PRIVATE RESIDENTIAL WELL WATER 2012	VILLAGE OF MILAN WATER SUPPLY SYSTEM 2013 WATER USAGE	PRIVATE RESIDENTIAL WELL WATER 2013
1 / 8	1696	X		X	
1 / 9	1700	X		X	
1 / 10	1617	X		X	
1 / 12	1475	X		X	
1 / 13	1479	X		X	
2 / 1	1474	X		X	
2/5	1702	X		X	
2 / 6	1713	X		X	
2 / 7	1473	X		X	
2 / 9					
2/10	1618	X		X	
3 / 1	1516	X		X	
3 / 2	1593	X			
3 / 3	1710	X		X	
3 / 4	1612	X		X	
4/11	1706	X		X	
4 / 8	1592	X		X	
4 / 14			X		X
4 / 18	1556	X		X	
5 / 12	1714			X	
7 / 13	1506	X		X	
PROPERTY NORTH OF VALLE VERDE					
	1513	X		X	
	1514	X		X	
PROPERTY EAST OF VALLE VERDE					
1/21	1712	X		X	
2 / 1	1711	X		X	
2 / 5	1493	X		X	
2 / 7	1502	X		X	
2 / 3	1566	X		X	
PROPERTY SOUTH OF VALLE VERDE					
	1557	X		X	

APPENDIX F

TAILINGS PILES RADON FLUX SURVEY / REPORT

Radon Flux Measurements for the HMC Tailings Piles

October 2013

Prepared for:

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

Prepared by:

Environmental Restoration Group, Inc.
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113

Radon Flux Measurements for the HMC Tailings Piles

1. Introduction

Reclamation activities associated with the Large Tailings Pile (LTP) at the Grants Uranium Mill, owned by Homestake Mining Company of California (HMC), were completed in phases. The pile was contoured in 1994 at which time an interim cover was placed on the top of the pile to control the dispersal of tailings by wind and water erosion. Radon barrier was applied to the north, west, and south side slopes, with completion of the work in 1994. Radon flux measurements were made on these side slopes on October 24-25, 1994. Completion of the placement of radon barrier on the east side slope and aprons occurred just prior to making the radon flux measurements on July 24-25, 1995. An evaporation pond was constructed on the Small Tailings Pile (STP) and an interim cover placed on the remainder of the pile. Radon flux measurements were made on the top of the LTP and the interim cover of the Small Tailings Pile (STP) on August 18-19, 1995.

As part of a request for a license amendment extending the milestones in the NRC License, radon flux measurements were repeated in the areas with interim cover on October 21-22, 2003. This license amendment required HMC to repeat these measurements annually.

The Year 2013 annual measurements were made on September 30 – October 1, 2013. The measurements for the LTP resulted in an average flux of 18.93 $pCi/m^2 \cdot s$, below the desired 20 $pCi/m^2 \cdot s$ goal. This report presents the data for the Year 2013 flux measurements.

2. Radon Flux Results

The results of the flux measurements on the LTP and STP are presented in the Appendix as Table A-1 and Table A-2, respectively. One-hundred sample locations were established on the piles as shown in Figure 2-1. One duplicate field measurement was made on the LTP at Location 21 and another duplicate field measurement was made on the STP at location 84. The two results for Location 21 were within 6 percent of each other and the two results for Location 84 were within 10.0 percent of each other.

The distribution of canisters was allocated so that each canister represented an equal area of the total pile surface. Measurements are reported for 64 locations on the LTP and 36 locations on the STP. The average measured flux was 18.93 $pCi/m^2 \cdot s$ and 8.28 $pCi/m^2 \cdot s$ for the LTP and STP, respectively. When calculating average measured flux for analysis duplicates (same canister analyzed twice) or location duplicates (same location measured twice), the results were averaged.

3. Average Pile Flux

Since all but the top of the LTP has rock cover, canisters were placed on the top of the pile only. The September 2013 average measured flux on the top of the pile was 48.00 $pCi/m^2 \cdot s$. This compares to 42.1 $pCi/m^2 \cdot s$ measured in 1995. In the earlier data, the average flux on the sides of the pile was 3.27 $pCi/m^2 \cdot s$, which constitutes 65 percent of the area. If one assumes that the flux on the side slopes remains constant, the average flux for the pile in September 2013 was 18.93 $pCi/m^2 \cdot s$ (0.35*48.00+0.65*3.27).

An evaporation pond is located on top of the STP and therefore that portion of the pile has 0 pCi/m^2•s flux. The areas for the side slopes, southern portion, and evaporation pond are 137,000, 874,000, and 1,331,000 square feet, respectively. These areas equate to a percent of total area for the side slopes, southern portion, and evaporation pond of 5.85 percent, 37.32 percent, and 56.83 percent, respectively. The corresponding average fluxes for these areas were 67.93, 11.54, and 0 pCi/m^2•s, respectively. Using Equation 3-1 below, the flux rate averages for the three portions of the STP were multiplied by their corresponding area ratios to obtain an area-weighted-average flux of 8.28 pCi/m^2•s.

$$Flux_w = 0.0585 * Flux_{side} + 0.3732 * Flux_{south} + 0.5683 * Flux_{pond} \qquad \text{Eq, 3-1}$$

Where: w = weighted average.

The data show that the STP average flux of 8.28 pCi/m^2•s is below the 20 pCi/m^2•s standard in 10 CFR 40 Appendix A. The average flux of 18.93 pCi/m^2•s for the LTP is also below the 20 pCi/m^2•s standard.

4. Quality Assurance

The EPA Method 115 requirements were met for the measurements. For the September 30th canister deployment there was no rainfall reported during the 24 hours prior to the measurements, nor did the temperature fall below 35 degrees Fahrenheit during deployment.

Two independent sources were used to calibrate the spectrometer, using identical geometry conditions to that of the canisters. Agreement between calibration factors was within 7.0 percent of the mean the analyses. The results of these measurements are included in Table 4-1.

The comparative analysis of 10 percent of the canisters analyzed is shown in Table 4-2. Agreements between measurements were within 5 percent and consistent with state-of-the art gamma spectroscopy results.

Four trip blanks were included in the batch and counted without exposing them to radon. The measured flux for all trip blanks were below 0.1 pCi/m^2•s , near the expected 0 pCi/m^2•s value. This result indicates that the canisters had not been exposed while sealed in the plastic bags, confirming the integrity of the bags during deployment.

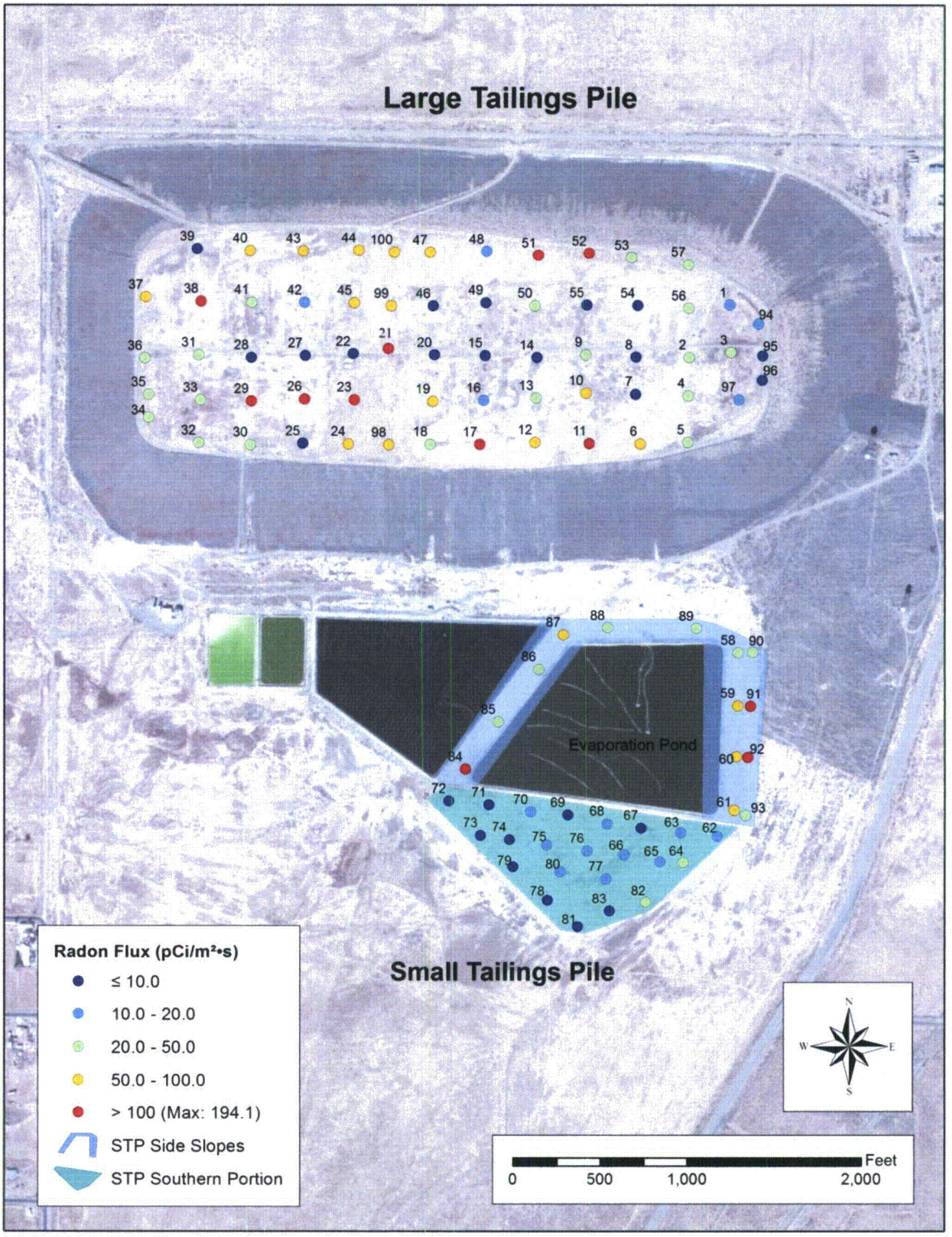
Table 4.1 Quality Assurance Results of Standard Analysis

Standard	Date	Count Time (seconds)	Standard (nCi)	Counts	Average Background Counts	Efficiency ($pCi/m^2 \cdot s$)	Error (1.00 SD)
STD 1a	10/01/13	14:20	1200	80	49200	3146.25	0.01297
STD 3a	10/01/13	14:50	1200	78.83	43289	3146.25	0.01147
STD 1b	10/02/13	11:07	1200	80	49069	3146.25	0.01293
STD 3b	10/02/13	11:30	1200	78.83	43597	3146.25	0.01156
Mean						0.01223	

Table 4.2 Comparison Data for 10-Percent of Samples Analyzed

Canister	First Analysis (A) ($pCi/m^2 \cdot s$)	Second Analysis (B) ($pCi/m^2 \cdot s$)	Average Flux ($pCi/m^2 \cdot s$)	Difference (%)
38	24.1	23.6	23.9	2.2
301	75.6	76.8	76.2	1.6
109	145.8	147.2	146.5	0.9
94	132.8	135.3	134.1	1.8
75	105.2	106.6	105.9	1.4
89	51.2	51.5	51.3	0.6
33	62.6	63.1	62.8	0.7
34	10.0	9.6	9.8	3.8
85	5.0	4.9	4.9	0.3
302	81.3	81.9	81.6	0.7
313	32.3	33.4	32.8	3.5

Figure 2-1 Radon Flux Canister Locations



Appendix A

Analysis Tables

Table A-1

Radon Flux Measurements for HMC Grants Site

Environmental Restoration Group, Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113

Location Number	Duplicate Type	Canister Number	Lab Date (mm/dd/yy)	Start Count Time (24:00)	Deploy Date (mm/dd/yy)	Deploy Time (24:00)	Retrieve Date (mm/dd/yy)	Retreive Time (24:00)	Deployment Duration (sec)	Count Duration (sec)	Sample Counts	BKG Counts	Detector Efficiency (cps/dps)	Canister Activity (pCi)	Flux (pCi/m^2s)	Flux Error (1.00 SD)	LLD (pCi/m^2s)	Remarks
1		43	10/2/2013	8:30	9/30/2013	8:31	10/1/2013	9:32	90060	197	5290	3146.25	1.22E-02	5.35E+04	15.32	0.24	0.3	OK
2		71	10/1/2013	18:52	9/30/2013	8:45	10/1/2013	9:40	89700	60	5128	3146.25	1.22E-02	1.83E+05	47.37	0.69	0.6	OK
3		203	10/1/2013	19:27	9/30/2013	8:38	10/1/2013	9:37	89940	128	5147	3146.25	1.22E-02	8.31E+04	21.54	0.33	0.4	OK
4		200	10/1/2013	15:58	9/30/2013	8:46	10/1/2013	9:42	89760	77	5109	3146.25	1.22E-02	1.41E+05	35.62	0.53	0.5	OK
5		41	10/1/2013	16:02	9/30/2013	8:47	10/1/2013	9:43	89760	71	5091	3146.25	1.22E-02	1.53E+05	38.63	0.57	0.5	OK
6		91	10/1/2013	16:00	9/30/2013	8:50	10/1/2013	9:45	89700	60	8635	3146.25	1.22E-02	3.12E+05	79.01	0.87	0.6	OK
7		28	10/1/2013	18:04	9/30/2013	8:51	10/1/2013	9:45	89640	608	5076	3146.25	1.22E-02	1.27E+04	3.26	0.08	0.2	OK
8		251	10/1/2013	17:28	9/30/2013	8:52	10/1/2013	9:46	89640	618	5025	3146.25	1.22E-02	1.22E+04	3.12	0.07	0.2	OK
9		38	10/1/2013	22:24	9/30/2013	8:56	10/1/2013	9:46	89400	115	5016	3146.25	1.22E-02	9.06E+04	24.13	0.37	0.4	OK
9	Count Dup	38	10/1/2013	22:25	9/30/2013	8:56	10/1/2013	9:46	89400	118	5039	3146.25	1.22E-02	8.86E+04	23.60	0.36	0.4	OK
10		301	10/1/2013	19:39	9/30/2013	8:58	10/1/2013	9:48	89400	77	10296	3146.25	1.22E-02	2.90E+05	75.55	0.77	0.5	OK
10	Count Dup	301	10/1/2013	19:40	9/30/2013	8:58	10/1/2013	9:48	89400	77	10459	3146.25	1.22E-02	2.94E+05	76.78	0.77	0.5	OK
11		263	10/1/2013	16:14	9/30/2013	9:00	10/1/2013	9:49	89340	60	15955	3146.25	1.22E-02	5.82E+05	147.95	1.19	0.6	OK
12		261	10/1/2013	19:19	9/30/2013	9:01	10/1/2013	9:51	89400	60	8038	3146.25	1.22E-02	2.90E+05	75.48	0.87	0.6	OK
13		23	10/1/2013	21:51	9/30/2013	9:04	10/1/2013	9:50	89160	102	5017	3146.25	1.22E-02	1.03E+05	27.35	0.42	0.5	OK
14		97	10/1/2013	18:17	9/30/2013	9:05	10/1/2013	9:49	89040	439	5000	3146.25	1.22E-02	1.94E+04	5.02	0.10	0.2	OK
15		48	10/1/2013	19:30	9/30/2013	9:07	10/1/2013	9:48	88860	480	5569	3146.25	1.22E-02	1.98E+04	5.20	0.10	0.2	OK
16		9	10/1/2013	21:56	9/30/2013	9:09	10/1/2013	9:51	88920	151	5369	3146.25	1.22E-02	7.28E+04	19.40	0.30	0.4	OK
17		29	10/2/2013	8:39	9/30/2013	9:10	10/1/2013	10:01	89460	60	18084	3146.25	1.22E-02	6.60E+05	189.53	1.43	0.6	OK
18		1	10/2/2013	8:34	9/30/2013	9:12	10/1/2013	10:00	89280	82	5015	3146.25	1.22E-02	1.29E+05	37.18	0.56	0.6	OK
19		61	10/2/2013	8:36	9/30/2013	9:14	10/1/2013	9:59	89100	90	8931	3146.25	1.22E-02	2.13E+05	61.50	0.68	0.5	OK
20		310	10/2/2013	8:41	9/30/2013	9:16	10/1/2013	9:56	88800	393	5004	3146.25	1.22E-02	2.23E+04	6.47	0.13	0.2	OK
21		109	10/2/2013	8:49	9/30/2013	9:18	10/1/2013	10:09	89460	60	13946	3146.25	1.22E-02	5.08E+05	145.81	1.26	0.6	OK
21	Count Dup	109	10/2/2013	8:50	9/30/2013	9:18	10/1/2013	10:09	89460	60	14072	3146.25	1.22E-02	5.12E+05	147.16	1.26	0.6	OK
21D	Loc Dup	312	10/1/2013	16:45	9/30/2013	9:18	10/1/2013	10:09	89460	60	16702	3146.25	1.22E-02	6.09E+05	154.97	1.22	0.6	OK
22		73	10/1/2013	20:52	9/30/2013	9:21	10/1/2013	10:08	89220	1200	5688	3146.25	1.22E-02	4.68E+03	1.23	0.05	0.1	OK
23		17	10/1/2013	16:04	9/30/2013	9:24	10/1/2013	10:07	88980	60	17225	3146.25	1.22E-02	6.29E+05	159.87	1.23	0.6	OK

Reviewed by _____

Table A-1

Radon Flux Measurements for HMC Grants Site

ERG Environmental Restoration Group, Inc
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113

Location Number	Duplicate Type	Canister Number	Lab Date (mm/dd/yy)	Start Count Time (24:00)	Deploy Date (mm/dd/yy)	Deploy Time (24:00)	Retrieve Date (mm/dd/yy)	Retreive Time (24:00)	Deployment Duration (sec)	Count Duration (sec)	Sample Counts	BKG Counts	Detector Efficiency (cps/dps)	Canister Activity (pCi)	Flux (pCi/m^2s)	Flux Error (1.00 SD)	LLD (pCi/m^2s)	Remarks
24		250	10/2/2013	8:54	9/30/2013	9:27	10/1/2013	10:06	88740	60	8687	3146.25	1.22E-02	3.14E+05	90.96	1.00	0.7	OK
25		108	10/1/2013	16:19	9/30/2013	9:28	10/1/2013	10:14	89160	268	5033	3146.25	1.22E-02	3.57E+04	9.08	0.16	0.3	OK
26		94	10/1/2013	16:11	9/30/2013	9:31	10/1/2013	10:14	88980	60	14340	3146.25	1.22E-02	5.22E+05	132.85	1.13	0.6	OK
26	Count Dup	94	10/1/2013	16:12	9/30/2013	9:31	10/1/2013	10:14	88980	60	14597	3146.25	1.22E-02	5.32E+05	135.27	1.14	0.6	OK
27		31	10/1/2013	15:30	9/30/2013	9:32	10/1/2013	10:11	88740	909	5152	3146.25	1.22E-02	6.73E+03	1.71	0.05	0.1	OK
28		11	10/1/2013	20:37	9/30/2013	9:36	10/1/2013	10:17	88860	750	5407	3146.25	1.22E-02	1.01E+04	2.67	0.07	0.2	OK
29		309	10/1/2013	20:51	9/30/2013	9:38	10/1/2013	10:16	88680	61	13374	3146.25	1.22E-02	4.79E+05	126.47	1.11	0.6	OK
30		65	10/1/2013	16:24	9/30/2013	9:40	10/1/2013	10:15	88500	75	5222	3146.25	1.22E-02	1.48E+05	37.90	0.56	0.5	OK
31		24	10/1/2013	21:37	9/30/2013	9:45	10/1/2013	10:19	88440	60	5055	3146.25	1.22E-02	1.80E+05	48.03	0.71	0.6	OK
32		87	10/1/2013	18:24	9/30/2013	9:41	10/1/2013	10:21	88800	75	5029	3146.25	1.22E-02	1.42E+05	36.86	0.55	0.5	OK
33		110	10/1/2013	21:54	9/30/2013	9:44	10/1/2013	10:20	88560	76	5032	3146.25	1.22E-02	1.41E+05	37.45	0.56	0.5	OK
34		305	10/1/2013	18:49	9/30/2013	9:57	10/1/2013	10:24	88020	118	5122	3146.25	1.22E-02	9.39E+04	24.87	0.47	0.4	OK
35		50	10/1/2013	18:26	9/30/2013	9:56	10/1/2013	10:24	88080	133	5060	3146.25	1.22E-02	7.83E+04	20.41	0.32	0.4	OK
36		300	10/2/2013	9:11	9/30/2013	9:54	10/1/2013	10:25	88260	100	5677	3146.25	1.22E-02	1.20E+05	34.81	0.50	0.5	OK
37		63	10/1/2013	16:34	9/30/2013	10:01	10/1/2013	10:26	87900	60	6731	3146.25	1.22E-02	2.42E+05	62.35	0.79	0.6	OK
38		75	10/1/2013	16:37	9/30/2013	10:06	10/1/2013	10:30	87840	60	11241	3146.25	1.22E-02	4.08E+05	105.18	1.01	0.6	OK
38	Count Dup	75	10/1/2013	16:39	9/30/2013	10:06	10/1/2013	10:30	87840	60	11391	3146.25	1.22E-02	4.14E+05	106.63	1.02	0.6	OK
39		2	10/1/2013	17:03	9/30/2013	10:05	10/1/2013	10:29	87840	1200	5288	3146.25	1.22E-02	3.94E+03	1.02	0.04	0.1	OK
40		5	10/1/2013	16:36	9/30/2013	10:10	10/1/2013	10:35	87900	60	5625	3146.25	1.22E-02	2.01E+05	51.81	0.72	0.6	OK
41		257	10/1/2013	22:40	9/30/2013	10:08	10/1/2013	10:32	87840	102	5021	3146.25	1.22E-02	1.08E+05	27.77	0.42	0.5	OK
42		37	10/1/2013	15:48	9/30/2013	10:15	10/1/2013	10:41	87960	164	5023	3146.25	1.22E-02	6.19E+04	15.81	0.25	0.3	OK
43		260	10/1/2013	20:24	9/30/2013	10:13	10/1/2013	10:40	88020	180	25780	3146.25	1.22E-02	3.11E+05	82.13	0.53	0.3	OK
44		52	10/2/2013	10:26	9/30/2013	10:18	10/1/2013	10:44	87960	75	10604	3146.25	1.22E-02	3.07E+05	90.11	0.90	0.6	OK
45		83	10/1/2013	16:17	9/30/2013	10:16	10/1/2013	10:42	87960	60	5963	3146.25	1.22E-02	2.14E+05	54.80	0.74	0.6	OK
46		102	10/1/2013	21:29	9/30/2013	10:25	10/1/2013	10:48	87780	405	5001	3146.25	1.22E-02	2.15E+04	5.74	0.11	0.2	OK
47		255	10/1/2013	22:11	9/30/2013	10:26	10/1/2013	10:50	87840	60	9676	3146.25	1.22E-02	3.51E+05	93.97	0.98	0.6	OK
48		40	10/2/2013	8:11	9/30/2013	10:28	10/1/2013	10:51	87780	191	6663	3146.25	1.22E-02	6.44E+04	18.61	0.27	0.4	OK

Reviewed by _____

Table A-1

Radon Flux Measurements for HMC Grants Site

Environmental Restoration Group, Inc
8809 Washington St. NE, Suite 150
Albuquerque, NM 87113

Location Number	Duplicate Type	Canister Number	Lab Date (mm/dd/yy)	Start Count Time (24:00)	Deploy Date (mm/dd/yy)	Deploy Time (24:00)	Retrieve Date (mm/dd/yy)	Retreive Time (24:00)	Deployment Duration (sec)	Count Duration (sec)	Sample Counts	BKG Counts	Detector Efficiency (cps/dps)	Canister Activity (pCi)	Flux (pCi/m^2s)	Flux Error (1.00 SD)	LLD (pCi/m^2s)	Remarks
49		46	10/2/2013	10:05	9/30/2013	10:30	10/1/2013	10:53	87780	416	5065	3146.25	1.22E-02	2.11E+04	6.19	0.12	0.2	OK
50		314	10/1/2013	17:24	9/30/2013	10:31	10/1/2013	10:54	87780	78	5412	3146.25	1.22E-02	1.48E+05	38.15	0.55	0.5	OK
51		68	10/1/2013	21:49	9/30/2013	10:34	10/1/2013	10:55	87660	60	10914	3146.25	1.22E-02	3.96E+05	106.03	1.04	0.6	OK
52		39	10/1/2013	22:34	9/30/2013	10:35	10/1/2013	10:56	87660	60	10365	3146.25	1.22E-02	3.76E+05	101.17	1.02	0.6	OK
53		58	10/1/2013	21:39	9/30/2013	10:41	10/1/2013	10:57	87360	72	5548	3146.25	1.22E-02	1.64E+05	44.09	0.62	0.6	OK
54		81	10/2/2013	9:48	9/30/2013	10:39	10/1/2013	10:59	87600	938	5207	3146.25	1.22E-02	6.47E+03	1.90	0.06	0.2	OK
55		59	10/1/2013	21:13	9/30/2013	10:37	10/1/2013	10:58	87660	720	5030	3146.25	1.22E-02	9.64E+03	2.57	0.07	0.2	OK
56		304	10/1/2013	22:09	9/30/2013	10:45	10/1/2013	11:02	87420	106	5010	3146.25	1.22E-02	9.87E+04	26.51	0.41	0.5	OK
57		36	10/1/2013	16:43	9/30/2013	10:43	10/1/2013	11:01	87480	124	5026	3146.25	1.22E-02	8.38E+04	21.60	0.34	0.4	OK
94		254	10/1/2013	16:59	9/30/2013	8:32	10/1/2013	9:33	90060	194	5067	3146.25	1.22E-02	5.19E+04	13.21	0.22	0.3	OK
95		101	10/1/2013	16:06	9/30/2013	8:34	10/1/2013	9:35	90060	284	5008	3146.25	1.22E-02	3.32E+04	8.38	0.15	0.3	OK
96		78	10/2/2013	8:20	9/30/2013	8:35	10/1/2013	9:35	90000	542	5001	3146.25	1.22E-02	1.40E+04	4.17	0.09	0.2	OK
97		70	10/1/2013	22:37	9/30/2013	8:36	10/1/2013	9:36	90000	161	5089	3146.25	1.22E-02	6.30E+04	16.72	0.27	0.4	OK
98		67	10/1/2013	20:32	9/30/2013	9:26	10/1/2013	10:05	88740	60	9292	3146.25	1.22E-02	3.36E+05	88.74	0.94	0.6	OK
99		35	10/1/2013	19:21	9/30/2013	10:24	10/1/2013	10:46	87720	73	12182	3146.25	1.22E-02	3.63E+05	95.40	0.89	0.5	OK
100		89	10/1/2013	18:02	9/30/2013	10:21	10/1/2013	10:45	87840	60	5502	3146.25	1.22E-02	1.97E+05	51.17	0.72	0.6	OK
100	Count Dup	89	10/1/2013	18:03	9/30/2013	10:21	10/1/2013	10:45	87840	60	5532	3146.25	1.22E-02	1.98E+05	51.46	0.72	0.6	OK

Reviewed by _____

Table A-2

Radon Flux Measurements for HMC Grants Site

ERG Environmental Restoration Group, Inc
8809 Washington St NE Suite 150
Albuquerque NM 87113

Location Number	Duplicate Type	Canister Number	Lab Date (mm/dd/yy)	Start Count Time (24:00)	Deploy Date (mm/dd/yy)	Deploy Time (24:00)	Retrieve Date (mm/dd/yy)	Retreive Time (24:00)	Deployment Duration (sec)	Count Duration (sec)	Sample Counts	BKG Counts	Detector Efficiency (cps/dps)	Canister Activity (pCi)	Flux (pCi/m^{2}s)	Flux Error (1.00 SD)	LLD (pCi/m^{2}s)	Remarks
58		10	10/1/2013	20:30	9/30/2013	10:56	10/1/2013	11:09	87180	60	5124	3146.25	1.22E+02	1.83E+05	48.63	0.71	0.6	OK
59		19	10/1/2013	22:36	9/30/2013	10:58	10/1/2013	11:10	87120	60	5563	3146.25	1.22E+02	1.99E+05	53.80	0.75	0.6	OK
60		33	10/1/2013	21:26	9/30/2013	11:01	10/1/2013	11:12	87060	60	6502	3146.25	1.22E+02	2.34E+05	62.61	0.81	0.6	OK
60	Count Dup	33	10/1/2013	21:27	9/30/2013	11:01	10/1/2013	11:12	87060	60	6546	3146.25	1.22E+02	2.35E+05	63.06	0.81	0.6	OK
61		64	10/1/2013	16:30	9/30/2013	11:02	10/1/2013	11:14	87120	60	5850	3146.25	1.22E+02	2.10E+05	54.08	0.74	0.6	OK
62		45	10/1/2013	21:45	9/30/2013	11:06	10/1/2013	11:15	86940	165	5017	3146.25	1.22E+02	6.14E+04	16.51	0.27	0.4	OK
63		311	10/1/2013	15:51	9/30/2013	11:09	10/1/2013	11:16	86820	210	5018	3146.25	1.22E+02	4.70E+04	12.10	0.20	0.3	OK
64		262	10/1/2013	18:00	9/30/2013	11:10	10/1/2013	11:24	87240	75	5148	3146.25	1.22E+02	1.46E+05	37.96	0.56	0.5	OK
65		6	10/2/2013	8:16	9/30/2013	11:11	10/1/2013	11:19	86880	217	5013	3146.25	1.22E+02	4.53E+04	13.18	0.22	0.3	OK
66		79	10/1/2013	19:23	9/30/2013	11:16	10/1/2013	11:26	87000	160	5406	3146.25	1.22E+02	6.89E+04	18.15	0.28	0.4	OK
67		34	10/1/2013	22:12	9/30/2013	11:14	10/1/2013	11:21	86820	258	5003	3146.25	1.22E+02	3.71E+04	10.00	0.17	0.3	OK
67	Count Dup	34	10/1/2013	22:18	9/30/2013	11:14	10/1/2013	11:21	86820	267	5007	3146.25	1.22E+02	3.56E+04	9.63	0.17	0.3	OK
68		306	10/1/2013	21:41	9/30/2013	11:37	10/1/2013	11:25	85680	249	5011	3146.25	1.22E+02	3.87E+04	10.52	0.18	0.3	OK
69		105	10/2/2013	9:20	9/30/2013	11:40	10/1/2013	11:40	86400	901	5003	3146.25	1.22E+02	6.48E+03	1.91	0.06	0.2	OK
70		104	10/1/2013	16:26	9/30/2013	11:41	10/1/2013	11:41	86400	184	5014	3146.25	1.22E+02	5.44E+04	14.09	0.23	0.3	OK
71		86	10/2/2013	9:14	9/30/2013	11:46	10/1/2013	11:46	86400	314	5009	3146.25	1.22E+02	2.95E+04	8.65	0.16	0.3	OK
72		12	10/2/2013	9:39	9/30/2013	11:47	10/1/2013	11:47	86400	501	5006	3146.25	1.22E+02	1.63E+04	4.80	0.10	0.2	OK
73		88	10/2/2013	9:03	9/30/2013	11:45	10/1/2013	11:45	86400	498	5005	3146.25	1.22E+02	1.64E+04	4.82	0.10	0.2	OK
74		22	10/2/2013	10:28	9/30/2013	11:43	10/1/2013	11:43	86400	380	5410	3146.25	1.22E+02	2.57E+04	7.61	0.14	0.3	OK
75		93	10/2/2013	8:59	9/30/2013	11:32	10/1/2013	11:39	86820	173	5012	3146.25	1.22E+02	5.82E+04	17.01	0.28	0.4	OK
76		307	10/1/2013	19:11	9/30/2013	11:35	10/1/2013	11:30	86100	160	5149	3146.25	1.22E+02	6.53E+04	17.35	0.27	0.4	OK
77		4	10/1/2013	19:14	9/30/2013	11:24	10/1/2013	11:27	86580	237	5024	3146.25	1.22E+02	4.11E+04	10.85	0.19	0.3	OK
78		85	10/1/2013	18:54	9/30/2013	11:29	10/1/2013	11:34	86700	450	5014	3146.25	1.22E+02	1.88E+04	4.96	0.10	0.2	OK
78	Count Dup	85	10/1/2013	19:02	9/30/2013	11:29	10/1/2013	11:34	86700	464	5153	3146.25	1.22E+02	1.87E+04	4.94	0.10	0.2	OK
79		66	10/2/2013	10:15	9/30/2013	11:30	10/1/2013	11:44	87240	610	5001	3146.25	1.22E+02	1.23E+04	3.62	0.09	0.2	OK
80		98	10/1/2013	22:29	9/30/2013	11:26	10/1/2013	11:30	86640	221	5021	3146.25	1.22E+02	4.44E+04	12.02	0.20	0.3	OK
81		56	10/1/2013	22:00	9/30/2013	11:21	10/1/2013	11:32	87060	540	5030	3146.25	1.22E+02	1.48E+04	3.97	0.09	0.2	OK

Reviewed by _____

Table A-2

Radon Flux Measurements for HMC Grants Site

ERG Environmental Restoration Group Inc
8809 Washington St NE, Suite 150
Albuquerque, NM 87113

Location Number	Duplicate Type	Canister Number	Lab Date (mm/dd/yy)	Start Count Time (24 00)	Deploy Date (mm/dd/yy)	Deploy Time (24 00)	Retrieve Date (mm/dd/yy)	Retreive Time (24 00)	Deployment Duration (sec)	Count Duration (sec)	Sample Counts	BKG Counts	Detector Efficiency (cps/dps)	Canister Activity (pCi)	Flux (pCi/m^2s)	Flux Error (1 00 SD)	LLD (pCi/m^2s)	Remarks
82		55	10/2/2013	8 56	9/30/2013	11 17	10/1/2013	11 35	87480	147	5004	3146 25	1 22E-02	6 94E+04	20 15	0 32	0 4	OK
83		80	10/1/2013	16 49	9/30/2013	11 19	10/1/2013	11 32	87180	524	5006	3146 25	1 22E-02	1 53E+04	3 95	0 09	0 2	OK
84		49	10/1/2013	15 56	9/30/2013	11 50	10/1/2013	11 50	86400	60	15166	3146 25	1 22E-02	5 53E+05	142 40	1 17	0 6	OK
84D	Loc Dup	256	10/1/2013	16 32	9/30/2013	11 50	10/1/2013	11 50	86400	60	16506	3146 25	1 22E-02	6 02E+05	155 82	1 23	0 6	OK
85		18	10/2/2013	10 42	9/30/2013	11 54	10/1/2013	11 55	86460	97	5014	3146 25	1 22E-02	1 08E+05	32 15	0 49	0 5	OK
86		21	10/2/2013	10 44	9/30/2013	11 55	10/1/2013	11 56	86460	95	5013	3146 25	1 22E-02	1 11E+05	32 86	0 50	0 5	OK
87		302	10/2/2013	9 36	9/30/2013	11 56	10/1/2013	11 57	86460	60	7667	3146 25	1 22E-02	2 77E+05	81 29	0 96	0 7	OK
87	Count Dup	302	10/2/2013	9 37	9/30/2013	11 56	10/1/2013	11 57	86460	60	7722	3146 25	1 22E-02	2 79E+05	81 90	0 96	0 7	OK
88		313	10/2/2013	10 37	9/30/2013	11 58	10/1/2013	12 00	86520	100	5196	3146 25	1 22E-02	1 09E+05	32 26	0 48	0 5	OK
88	Count Dup	313	10/2/2013	10 39	9/30/2013	11 58	10/1/2013	12 00	86520	110	5906	3146 25	1 22E-02	1 13E+05	33 40	0 47	0 5	OK
89		27	10/2/2013	10 35	9/30/2013	12 01	10/1/2013	12 02	86460	84	5183	3146 25	1 22E-02	1 31E+05	38 64	0 57	0 6	OK
90		53	10/1 2013	20 34	9/30 2013	10 55	10/1/2013	11 08	87180	136	5024	3146 25	1 22E-02	7 58E+04	20 18	0 32	0 4	OK
91		1	10/1/2013	17 26	9/30/2013	10 57	10/1/2013	11 10	87180	60	12846	3146 25	1 22E-02	4 67E+05	121 38	1 09	0 6	OK
92		54	10/1/2013	16 47	9/30/2013	11 00	10/1/2013	11 13	87180	60	20560	3146 25	1 22E-02	7 51E+05	194 14	1 37	0 6	OK
93		301	10/2/2013	8 52	9/30/2013	11 03	10/1/2013	11 14	87060	106	5009	3146 25	1 22E-02	9 86E+04	28 80	0 44	0 5	OK

Reviewed by _____

Appendix B

Deployment/Retrieval and Counting Logs

Deployment

9/30/13

Location	Can	Time	Exp
1	43	831	16
94	254	832	16
95	101	834	14
96	78	835	14
97	70	836	16
3	203	838	16
2	71	845	20
4	200	846	19
5	41	847	18
6	91	850	23
7	28	851	28
8	251	852	20
9	38	856	21
10	301	858	22
11	263	900	28
12	261	901	26
13	23	904	36
14	97	905	24
15	48	907	24
16	9	909	26
17	29	910	27
18	1	912	26
19	61	914	160
20	0018	916	18
21	109	918	26
21D	~~301~~ 312	918	26
22	73	921	21
23	17	924	28
98	67	926	27
24	250	927	23
25	108	928	25
26	94	931	52
27	31	932	24
28	11	936	24
29	309	938	33
30	65	940	23
32	57	941	18
33	110	944	50
31	24	945	145
36	300	954	15
35	50	956	18
34	305	957	14
37	63	1001	18
39	2	1005	24
38	74/75	1006	32
41	257	1008	33
40	5	1010	27
43	260	1013	28
42	37	1015	43
45	83	1016	26
44	52	1018	23

Location	Can	Time	Exp
100	89	1021	29
99	35	1024	26
46	102	1025	23
47	255	1026	3
48	40	1028	22
49	46	1030	25
50	314	1031	27
51	108	1034	26
52	39	1035	28
53	59	1037	22
54	81	1039	24
53	58	1041	24
57	36	1043	20
56	304	1045	21
90	53	1055	23
58	10	1056	36
91	3	1057	~~18~~ 45 US
59	19	1058	34
92	54	1100	43
60	33	1101	30
61	104	1102	42
93	303	1103	60
62	45	1106	32
63	311	1109	24
64	262	1110	18
65	6	1111	18
67	34	1114	27
66	79	1116	16
82	55	1117	23
83	80	1119	14
81	56	1121	15
77	4	1124	15
80	98	1126	16
78	85	1129	14
79	66	1130	14
75	93	1132	22
76	307	1135	20
68	306	1137	24
69	105	1140	25
70	104	1141	27
74	22	1143	17
73	88	1145	19
71	86	1146	22
72	12	1147	20
84	49	1150	300
84D	256	1150	300
85	18	1154	38
86	21	1155	34
87	302	1156	125
88	313	1158	48
89	27	1201	36

Deployment

TB

~~30~~ not used (2)

103 ✓

84 ✓

~~8~~ not used (8)

47 ✓

7 ✓

Retrieval 10/1/13

Location	Can	Deployed	Retrieved
~~1~~	43	8:31	9:32
94	254	8:32	9:33
~~95~~	101	8:34	9:35
~~96~~	78	8:35	9:35
~~97~~	70	8:36	936
~~3~~	203	8:38	937
~~2~~	71	8:45	940
~~4~~	200	8:46	942
~~5~~	41	8:47	943
~~6~~	91	8:50	945
~~7~~	28	8:51	945
~~8~~	251	8:52	946
~~9~~	38	8:56	946
~~10~~	301	8:58	948
~~11~~	263	9:00	949
~~12~~	261	9:01	951
~~13~~	23	9:04	950
~~14~~	97	9:05	949
~~15~~	48	9:07	948
~~16~~	9	9:09	951
~~17~~	29	9:10	1001
~~18~~	1	9:12	~~959~~ 1000
~~19~~	61	9:14	959
~~20~~ 310 ~~18~~		9:16	956
~~21~~	109	9:18	1004
~~21D~~	312	9:18	1009
~~22~~	73	9:21	1000
~~23~~	17	9:24	1007
~~98~~	67	9:26	~~105~~ 1005
~~24~~	250	9:27	1006
~~25~~	108	9:28	1014
~~26~~	94	9:31	1014
~~27~~	31	9:32	1011
~~28~~	11	9:36	1017
~~29~~	309	9:38	1016
~~30~~	65	9:40	1015
~~32~~	57	9:41	1021
~~33~~	110	9:44	1020
~~31~~	24	9:45	1019
~~36~~	300	9:54	1025
~~35~~	50	9:56	1024
~~34~~	305	9:57	1024
~~37~~	63	10:01	1026
~~39~~	2	10:05	1029
38	74 (75)	10:06	1030
~~41~~	257	10:08	1032
~~40~~	5	10:10	1035
~~43~~	260	10:13	1040
~~42~~	37	10:15	1041
~~45~~	83	10:16	1042
~~44~~	52	10:18	1044

Location	Location	Can	Deployed	Retrieved	
~~100~~	100	89	10:21	1045	
~~99~~	99	35	10:24	1046	
~~46~~	46	102	10:25	1048	
~~47~~	47	255	10:26	1050	
~~48~~	48	40	10:28	1051	
~~49~~	49	46	10:30	1053	
~~50~~	50	314	10:31	1054	
~~51~~	51	68	10:34	1055	
~~52~~	52	39	10:35	1056	
~~55~~	55	59	10:37	1058	
~~54~~	54 81	~~84~~	10:39	1059	can 81
~~53~~	53	58	10:41	1057	
~~57~~	57	36	10:43	1101	
~~56~~	56	304	10:45	1102	
~~90~~	90	53	10:55	1108	
~~58~~	58	10	10:56	1109	
~~91~~	91	3	10:57	1110	
~~59~~	59	19	10:58	1110	
~~92~~	92	54	11:00	1113	
~~60~~	60	33	11:01	1112	
~~61~~	61	64	11:02	1114	
~~93~~	93	303	11:03	1114	
~~62~~	62	45	11:06	1115	
~~63~~	63	311	11:09	1116	
~~64~~	64	262	11:10	1124	
~~65~~	65	6	11:11	1119	
~~67~~	67	34	11:14	1121	
~~66~~	66	79	11:16	1126	
~~82~~	82	55	11:17	1135	
~~83~~	83	80	11:19	1132	
~~81~~	81	56	11:21	1132	
~~77~~	77	4	11:24	1127	
~~80~~	80	98	11:26	1130	
~~78~~	78	85	11:29	1134	
~~79~~	79	66	11:30	1144	
~~75~~	75	93	11:32	1139	
~~76~~	76	307	11:35	1130	
~~68~~	68	306	11:37	1125	
~~69~~	69	105	11:40	1140	
~~70~~	70	104	11:41	1141	
~~74~~	74	22	11:43	1143	
~~73~~	73	88	11:45	1145	
~~71~~	71	86	11:46	1146	
~~72~~	72	12	11:47	1147	
~~84~~	84	49	11:50	1150	
~~84D~~	84D	256	11:50	1150	
~~85~~	85	18	11:54	1155	
~~86~~	86	21	11:55	1156	
~~87~~	87	302	11:56	1157	
~~88~~	88	313	11:58	1200	
~~89~~	89	27	12:01	1202	

(1)

Radon Flux Measurements

Site _____

Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(aCi)	Flux pCi/m2s	Flux Error 1 00S D	LLD pCi/m2s	Remarks
STD #1	10/1	14 20						1200	49200									
STD #3		14 50						1200	43289									
BKG 1		15 10						1200	3185									
21		15 31	09/30	9:32	10/1	10:11		909	5152									27
37		15 48		10:15		10:41		164	5023									42
311		15:51		11:09		11:16		210	5018									63
49		15:56		11:50		11:50		60	15166									84
200		15:58		8:46		9:42		77	5109								(if)	~~200~~ 4
91		16:00		8:50		9:45		60	8635									6
41		16:02		8:47		9:43		71	5091									5
17		16:04		9:24		10:07		60	17225									23
101		16:06		8:34		9:35		284	5008									95
94		16:11		9:31		10:14		60	14340									26
94 B		16:12		9:31		10:14		60	14597									26
263		16:14		9:00		9:49		60	15955									11
83		16:17		10:16		10:42		60	5963									45
108		16:19		9:28		10:14		268	5033									25
65		16:24		9:40		10:15		75	5222									30
104		16:26		11:41		11:41		184	5014									70
64		16:30		11:02		11:14		60	5850									61
256		16:32		11:50		11:50		60	16506			←	16506					84 D
63		16:34		10:01		10:26		60	6731									37
5		16:36		10:10		10:35		60	5625									40
75		16:37		10:06		10:30		60	11241									38
75 B		16:39		10:06		10:30		60	11391									38

(2)

Radon Flux Measurements

Site HMC - 2013

Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(aCi)	Flux pCi/m2s	Flux Error 1.00S D	LLD pCi/m2s	Remarks
36	10/1	16:43	9/30	10:43	10/1	11:01	~~124~~	124	5026									57
312		16:45		9:18		10:09		60	16702									21 0
54		16:47		11:00		11:13		60	20560									92
80		16:49		11:19		11:32		524	5006									83
254		16:59		8:32		9:33		194	5067									94
2		17:03		10:05		10:29		1200	5288									39
314		17:24		10:31		10:54		78	5412									50
3		17:26		10:57		11:10		60	12846									91
251		17:28		8:52		9:46		618	5025									8
47		17:39						1200	3141									
262		18:00	(6) ~~10~~ 11:10			11:24		75	5148									64
89		18:02		10:21		10:45		60	5502									100
89 B		18:03		10:21		10:45		60	5532									100
28		18:04		8:51		9:45		608	5076									7
97		18:17		9:05		9:49		439	5000									14
57		18:24		9:41		10:21		75	5029									32
50		18:26		9:56		10:24		133	5060									35
7		18:29		~~9:57~~	(4)	~~10:24~~		1200	3192									~~37~~
305		18:49		9:57		10:24		118	5322									34
71		18:52		8:45		9:40		60	~~5042~~		5128	(8)						2
85		18:54		11:29		11:34		450	5014									78
85 B		19:02		11:29		11:34		464	5153									78
307		19:11		11:35		11:30		160	5149									76
4		19:14		11:24		11:27		237	5024									77
261		19:19		9:01		9:51		60	8038									12

Radon Flux Measurements

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Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(pCi)	Flux pCi/m2s	Flux Error 1.00S D	LLD pCi/m2s	Remarks
35	10/1	19:21	09/30	10:24	10/1	10:46		73	12182								99	~~99~~
79		19:23		11:16		11:26		160	5406									66
203		19:27		8:38		9:37		128	5147									3
48		19:30		9:07		9:48		480	5569									15
301		19:39		8:58		9:48		77	10296									10
301 B		19:40		8:58		9:48		77	10459									10
84		19:43		12:00		12:00		1200	3102									TB 1
103		20:03		12:00		12:00		1200	3120									TB 2
260		20:24		10:13		10:40		180	25780									43
10		20:30		10:56		11:09		60	5124									58
67		20:32		9:26		10:05		60	9292									98
53		20:34		10:55		11:08		136	5024									90
11		20:37		9:36		10:17		750	5407									28
309		20:51		9:38		10:16		61	13374									29
73		20:52		9:21		10:08		1200	5688									22
59		21:13		10:37		10:58		720	5030									55
33		21:26		11:01		11:12		60	6502									60
33 B		21:27		11:01		11:12		60	6546									60
102		21:29		10:25		10:48		405	5001									46
24		21:37		9:45		10:19		60	5055									31
58		21:39		10:41		10:57		72	5548									53
306		21:41		11:37		11:25		249	5011									68
45		21:45		11:06		11:15		165	5017									62
68		21:49		10:34		10:55		60	10914									51
23		21:51		9:04		9:50		102	5017									13

Radon Flux Measurements

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Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(aC3)	Flux pCi/m2s	Flux Error 1.00 S D	LLD pCi/m2s	Remarks
110	10/1	21:54	9/30	9:44	10/1	10:20		76	5032									33
9		21:56		9:09		~~9:35~~ 9:51		151	5369									16
56		22:00		11:21		11:32		540	5030									81
304		22:09		10:45		11:02		106	5010									56
255		22:11		10:26		10:50		60	9676									47
34		22:12		11:14		11:21		258	5003									67
34 B		22:18		11:14		11:21		267	5007									67
38		22:24		8:56		9:46		115	5016									9
38 B		22:25		8:56		9:46		118	5039									9
98		22:29		11:26		11:30		221	5021									80
39		22:34		10:35		10:56		60	10365									52
19		22:36		10:58		11:10		60	5563								59	~~597~~ (2)
70		22:37		8:36		9:36		161	5009									97
257		22:40		10:08		10:32		102	5021									41
BKG 2		22:43		—		—		1200	3099							BKG		—
BKG 3	10/2	07:40		—		—		1200	3051							BKG		~~52~~
40		08:11		10:28		10:51		191	6063									48
6		08:16		11:11		11:19		217	5013									65
78		08:20		8:35		9:35		542	5001									96
43		08:30		8:31		9:32		197	5290									1
1		08:34		9:12		10:00		82	5015									18
61		08:36		9:14		9:59		90	8931									19
29		08:39		9:10		10:01		60	18084									17
310		08:41		9:16		9:56		393	5004									20
109		08:49		9:18		10:09		60	13946									21
109 B		08:50		9:18		10:09		60	14072									21

(2)

Radon Flux Measurements

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Canister Number	Lab Date	Start Count Time	Deploy Date	Deploy Time	Retrieve Date	Retrieve Time	Collection Time (sec)	Count Time (sec)	Peak Counts	Percent Error	Bkg counts	Percent Error	Detector Efficiency	Canister Activity(pCi)	Flux pCi/m2s	Flux Error 1.00 S.D.	LLD pCi/m2s	Remarks
303	10/2	08:52	4/30	11:03	10/1	11:14		106	5009									93
250		08:54		9:27		10:06		60	8687									24
55		08:56		11:17		11:35		147	5004									82
93		08:59		11:32		11:39		173	5012									75
88		09:03		11:45		11:45		498	5005									73
300		09:11		9:54		10:25		100	5677									36
86		09:14		11:46		11:46		314	5009									71
105		09:20		11:40		11:40		901	5003									69
302		09:36		11:56		11:57		60	7667									87
302 B		09:37		11:56		11:57		60	7722									87
12		09:39		11:47		11:47		501	5006									72
81		09:48		10:39		10:59		938	5207									54
46		10:05		10:30		10:53		416	5065									49
66		10:15		11:30		11:44		610	5001									79
52		10:26		10:18		10:44		75	10604									44
22		10:28		11:43		11:43		380	5410									74
27		10:35		12:01		12:02		84	5183									89
313		10:37		11:58		12:00		100	5196									88
313 B		10:39		11:58		12:00		110	5906									88
18		10:42		11:54		11:55		97	5014									85
21		10:44		11:55		11:56		95	5013									86
BKG 4		10:47		1200		1200		1200	3250							BKG		—
STD #1		11:07		1200		1200		1200	49089									
STD #3		11:31		1200		1200		1200	43597									