

presents data for the 2010 Water Year, along with the driest water year (1977), the calculated average water year, the wettest year (1983), and the 2010 Water Year for comparison.

Table 3.1-4 provides the daily pan evaporation measured at Station CM_STA LDV-EV during the 2010 Water Year, and Table 3.1-5 shows monthly data going back to the 1969 Water Year.

3.2 Groundwater Elevation and Quality Monitoring Program

3.2.1 Program Description

The Groundwater Elevation and Quality Monitoring Program includes the measurement of groundwater levels in monitoring and production wells, and the collection and analyses of groundwater samples. These hydrologic data are needed to assess groundwater supplies (i.e., quantity, quality, and trends). The program focuses on the Main Basin, where groundwater is pumped for municipal uses. Other Zone 7 programs utilize the data collected in this program, and the results are used in water resources management planning and decision making.

There were a total of 236 wells in the Zone 7 groundwater monitoring program during the 2010 Water Year (shown on Figure 3.2-1). Each well in the program was monitored and/or sampled to fulfill one or more specific objective. Table 3.2-1 lists all of the wells in the program, the objective(s) of each monitoring well, and the frequency of monitoring or sampling for each objective. The objectives listed in the table are described fully in the GWMP and are described briefly below:

Water Level Monitoring – water level measurements are taken from various wells in the basin at varying frequencies.

- **Semi-Annual (SA)** - groundwater basin semi-annual water level measurements during seasonal extremes (spring highs and fall lows).
- **Quarterly (Q)** – created in the 2007 Water Year to reduce the number of wells measured monthly.
- **Monthly (M)** – monthly water level measurements used to identify when seasonal extremes occur and in turn used to trigger the semi-annual water level measurement events.

Del Valle Water Rights (WR) – monitoring of water levels and quality required for Arroyo Valle water rights.

Groundwater Basin Quality – annual sampling of groundwater for major minerals and metals. Additional sampling and testing may be performed by an outside contractor or property owner if not sampled by Zone 7 staff.

Municipal Supply Well (Mu) – monitoring of municipal wells for water levels and quality.

Key Wells (Key) – index wells in each of the largest subbasins of the Main Basin. Since the Amador Sub-basin is the largest and most significant subbasin, it is split into the Amador West and Amador East Sub-basins. Starting in 2008, this objective was expanded to monitor conditions in both the upper and lower aquifers in each subbasin (see Section 3.2.2).

Salt Management Plan (SMP) – monitoring to identify salt quantity and migration in groundwater.

Well construction details for each of the wells in the program are shown in Table 3.2-2.

3.2.2 Program Changes and Notes for 2010 Water Year

The following bulleted items are items that have changed from the 2009 Water Year or are items of note for the 2010 Water Year:

Program Improvements - in a continuing effort to optimize the groundwater monitoring program, staff changed the monitoring frequency of ten wells from quarterly to semi-annual monitoring for groundwater levels.

Key Well Program – For the 2010 Water Year, three of the key wells have been replaced; two of which were replaced by new wells that were drilled specifically for the Key Well Program:

- 3S/1E 11G 1 replaced 3S/1E 12G 1 for the Amador West Upper Key Well:
Former Key Well 12G1 water levels have remained relatively constant over time giving rise to the conclusion that it was completed in shallow perched aquifer, and not providing data representative of the Upper Amador Subbasin. Well 11G1, however, is completed in a deeper portion of the upper aquifer, and its water levels appear to be more representative of the water level conditions found in other upper aquifer monitoring wells in this subbasin.
- 3S/1E 20C 8 replaced 3S/1E 17D 4 for the Bernal Lower Key Well:
Former Key Well 17D4 was located in the Hopyard Wellfield and influenced by the pumping of Hop 6 and Hop 9. Well 20C8 was constructed in the southern Bernal Subbasin adjacent to Upper Key Well 20C7 and provides reliable data for monitoring the vertical gradient between the upper and lower zones.
- 3S/2E 8H 3 replaced 3S/2E 8G 1 for the Mocho 2 Lower Key Well:
Former Key Well 8G1 was a municipal supply well owned and operated by Cal Water Service. Collection of static water level measurements was sporadic due to the occasional pump operation. Also, since the casing was perforated over a long interval (i.e., across multiple aquifers) the data it provided was less desirable for basin evaluations. New Well 8H3 provides reliable water level data from a dedicated monitoring well constructed with perforations across a distinct aquifer.

The following table lists the monitoring wells used for the Key Well Program in the 2010 Water Year:

Table: Key Wells for 2010 Water Year

SubBasin	Key Well Name	Aquifer	Previous Name	Well Number
Bernal	Key_Bern_U	Upper	Fairgrounds Key	3S/1E 20C 7
	Key_Bern_L	Lower		3S/1E 20C 8
Amador-West	Key_AmW_U	Upper	Mohr Ave Key	3S/1E 9P 5
	Key_AmW_L	Lower		3S/1E 9P10
Amador-East	Key_AmE_U	Upper		3S/1E 11G 1
	Key_AmE_L	Lower	Hagemann Key	3S/1E 12K 2
Mocho II	Key_Mo2_U	Upper	Livermore Key	3S/2E 8K 2
	Key_Mo2_L	Lower		3S/2E 8H 3

Arroyo De La Laguna Wells - Groundwater elevations remained high (above 280 ft) in the Bernal Upper Key Well (formerly the Fairgrounds Key Well) throughout the year; therefore, additional wells near the Arroyo De La Laguna were monitored to determine the volume of groundwater that overflowed from the basin. The overflow volume was calculated as part of Zone 7's hydrologic inventory (Section 4.2.3).

DSRSD Samples – Zone 7 continued its data sharing agreement with DSRSD to obtain water levels and quality results from several of DSRSD's wells (listed in table below) installed to monitor the impacts, if any, from their wastewater treatment and sludge disposal operations in Pleasanton.

Table: DSRSD Wells Included in 2010 Program

Well Number	DSRSD Well	Aquifer
3S/1E 6N 2	MW-3	Upper
3S/1E 6N 3	MW-4	Upper
3S/1E 6N 6	NE-76	Upper
3S/1E 7D 1	SW-75	Upper
3S/1E 7D 3	SE-70	Upper
3S/1W 1J 1	MW-1	Upper
3S/1W 12A 9	NW-75	Upper

Water levels were monitored by DSRSD and supplied to Zone 7. The results are shown on Table 3.2-3 and discussed in Section 3.2.3.2. Groundwater samples from the wells were taken by DSRSD, the results of which were supplied to Zone 7. During one of these sampling events, DSRSD supplied Zone 7 with split samples that were submitted to the Zone 7 laboratory. The results are shown in Table 3.2-4 and discussed in Section 3.2.4.2

High Salts in Mocho Wellfield – During the 2010 Water Year TDS and hardness concentrations continued to increase in Mocho 3, but decreased slightly in Mochos 1, 2, and 4. In addition to the water quality in both shallow and deep wells, the groundwater elevations, rainfall and municipal water production in this area are being analyzed to determine the reason for the rapid salt concentration

increases seen in Mochos 3 and 4 in recent years. The results of this investigation are discussed below in Section 3.2.4.4.

DWR Samples – Historically DWR has asked for split samples from some of Zone 7’s program wells as part of their Water and Environment Monitoring Program. However, due to DWR budget cuts, they suspended this program starting in the 2009 Water Year.

3.2.3 Groundwater Levels for 2010 Water Year

3.2.3.1 Overview

In general, the 2010 Upper Main Basin groundwater levels mirrored the 2009 Upper levels throughout the water year (+/- 12 feet), and ended the year at approximately the same levels they ended the 2009 Water Year, except for in Mocho II Subbasin where they ended the year slightly higher than in 2009 along the Arroyo Mocho. The Lower Main Basin groundwater levels also tracked last year’s levels (+/- 14 feet), ending the year with groundwater levels slightly lower than the previous year’s in the Bernal and eastern Amador Subbasins and slightly higher in the Mocho II and western Amador Subbasins. The greatest difference was observed in the Mocho II Subbasin where parts of the subbasin experienced 15 to 30 feet of groundwater rise. The groundwater elevations and gradients for the upper and lower aquifers are discussed in detail in Sections 3.2.3.2 and 3.2.3.3 below. Groundwater quality of the upper and lower aquifers is described in Sections 3.2.4.2 and 3.2.4.3, respectively.

Table 3.2-3 contains a tabulation of spring and fall groundwater elevations for all program wells and includes a comparison with water levels of the previous fall. Figure 3.2-2 shows long-term hydrographs from each of the eight Key Wells. Figure 3.2-3 shows graphs of groundwater elevations and subbasin inflow/outflow volumes over the last two years. In general, water levels in the Key Wells changed as follows from the 2009 Water Year:

**Table: Groundwater Elevation Change in Key Wells
Since Fall of 2009 Water Year**

Subbasin	Upper Aquifer	Lower Aquifer
Bernal	Up 1’	Down 5’
Amador West	Down 1’	Up 6’
Amador East	Up 4’	Down 6’
Mocho II	Up 16’	Up 10’

Water levels in the Key Wells in subbasins pumped by Zone 7 (Bernal and Amador West) indicated that water levels were 45 to 110 ft above historical lows at the end of the 2010 Water Year (see Section 4.2.4 for a discussion on operational storage, which is based on groundwater elevation above historical lows).

3.2.3.2 Upper Aquifer Zone

Figure 3.2-4 and Figure 3.2-5 show groundwater contours in the upper aquifer for the Spring and Fall 2010 water measurement events, respectively. Both of these figures include water levels from mining area

ponds, located in the central and southern portions of the Amador Subbasin, which are believed to be in equilibrium with the upper aquifer. The mining companies are actively pumping into or pumping from some of these ponds, creating a groundwater mound or depression, respectively (Section 3.5). Also much of the upper aquifer gravels in the mining area have been excavated and backfilled with relatively impervious fine-grained soil. These areas are indicated on the figures as gray-shaded areas.

As is usually the case, 2010 water levels varied with seasonal recharge and extraction; generally the highest water levels were found during the wettest times of the year. The gradient in the Upper Aquifer was generally towards the Bernal Subbasin in the western portion of the Valley and eventually to the south where groundwater flows out of the Main Basin. The gradient in the upper aquifer generally ranged from 0.005 to 0.025 with isolated areas of flatter or steeper gradients, especially near subbasin boundaries.

For the first half of the 2010 Water Year (Fall 2009 to Spring 2010), varied significantly (-37 to +19 ft) throughout the Main Basin. For the second half of the 2010 Water Year (Spring 2009 to Fall 2010), water levels in the Main Basin generally dropped up to 8 ft. However, as is usually the case, water levels in the mining area varied significantly (-2 ft to +47 ft) depending on mining activities. For the entire 2010 Water Year (Fall 2009 to Fall 2010), water levels changed locally from -6 ft to +11 ft depending on proximity to streams, shallow groundwater pumping, and mining activities; however overall water levels stayed relatively constant over the entire Main Basin.

For the entire water year, water levels in wells near the Arroyo De La Laguna remained below the elevation at which basin overflow occurs (approximately 295 feet above MSL). Therefore, there was no basin overflow from the upper aquifer into the Arroyo De La Laguna during the 2010 Water Year.

3.2.3.3 Lower Aquifer Zone

Figure 3.2-6 and Figure 3.2-7 show groundwater contours in the lower aquifer of the Main Basin for Spring and Fall 2010, respectively. These maps show a depression around several municipal or domestic wells that were pumping around the time of the Spring and Fall measurements. The groundwater gradient within the Mocho II Subbasin and within the Amador/Bernal Subbasins in the Lower Aquifer ranges from 0.001 to 0.05 with groundwater flowing generally westward along the longitudinal axis of the Livermore-Amador Valley. Typically, the lowest elevations correspond to the municipal pumping wellfields in those subbasins.

There are two major subsurface structural features that act as partial barriers to the lateral movement of groundwater in the Lower Aquifer.

1. Groundwater elevations in the Mocho II Subbasin were 85 to 100 ft higher than those across the boundary (i.e., the Livermore Fault) with the Amador Subbasin.
2. Groundwater elevations in the Dublin/Camp/Bishop Subbasins were 20 to 40 ft higher than those across the Main Basin Boundary to the south (a.k.a., the Parks Boundary).

For the first half of the 2010 Water Year (Fall 2009 to Spring 2010), water levels rose (up to about 50 ft) due to recharge from the upper aquifer and reduced municipal pumping that occurs during the winter

months. For the second half of the water year (Spring to Fall 2010), water levels dropped (up to 36 ft) throughout the lower aquifer of the Main Basin due to the municipal pumping that occurred during the summer months. Overall for the water year (Fall 2009 to Fall 2010), water levels generally rose, especially in the Mocho II Subbasin (up to 30 ft). However, water levels dropped slightly (less than 6 ft) in southern portions of the Amador and Bernal Subbasins primarily from Pleasanton pumping.

Figure 3.2-8 shows the difference between groundwater elevations measured in the lower aquifer in Fall 2010 and historical lows. At the end of the water year, water levels in the central and western Main Basin remained 40 to 95 ft above historical lows. Further to the southwest, in the central and southern portions of the Bernal Subbasin, water levels remain at greater than 100 feet above historical lows. Only SFPUC is using this part of the basin for municipal supply (supplying Castlewood). In the eastern part of the Main Basin (Mocho II Subbasin), where California Water Service wells are located, the end of year groundwater levels were 80 to 130 feet above their respective historical lows (see Section 4.2.4 for a discussion on operational storage, which is based on groundwater elevation above historical lows). Zone 7's objective of maintaining groundwater levels above historical lows in all parts of the Main Basin was met in 2010.

3.2.4 Groundwater Quality for 2010 Water Year

3.2.4.1 Overview

Other than localized contamination from toxic sites (discussed in Section 5.3.3), the three main constituents of concern for meeting the Livermore Basin groundwater quality objectives are total dissolved solids (TDS), nitrate, and boron. Hardness is also a parameter of concern for Zone 7's delivered water quality objectives. Although routinely analyzed for, hardness is not tracked separately from TDS because it is generally proportional to the TDS of the Main Basin's groundwater. The groundwater quality objectives for these three constituents in Livermore-Amador Main Basin are:

- TDS: Ambient or 500 mg/L, whichever is lower. (1,000 mg/L in Fringe Basins)
- Nitrate (as NO₃): 45mg/L
- Boron (an Agricultural Supply limit): 2.0 mg/L

Concentrations and gradients of these constituents are presented in the following figures and tables:

- Table 3.2-4 contains the groundwater quality data collected from network wells during the 2010 Water Year.
- Figure 3.2-9 and Figure 3.2-12 show maps of total dissolved solids (TDS) concentrations for the upper and lower aquifers, respectively.
- Figure 3.2-10 and Figure 3.2-13 show maps of nitrate concentrations for the upper and lower aquifers, respectively.

- Figure 3.2-11 and Figure 3.2-14 show maps of boron concentrations for the upper and lower aquifers, respectively.
- Figure 3.2-15 and Figure 3.2-16 show historical graphs of TDS concentrations in the Key Wells.
- Figure 3.2-17 to Figure 3.2-20 show groundwater hydro-chemographs (with water level, TDS, nitrate, and boron) from wells in each of the major subbasins.

In general, concentrations for these constituents remained the same as the 2009 concentrations. The specific results for the constituents are discussed below by aquifer zone.

3.2.4.2 Upper Aquifer Zone

TDS

In the upper aquifer, TDS concentrations depend primarily on location relative to a source of recharge water, the water quality of the recharge water, and groundwater depth. Over the last 30 years there has been a general upward trend in TDS concentrations, particularly in the western portion of the Main Basin. Concentrations in the eastern and central portions of the valley, particularly near the high recharge reaches of the Arroyo Mocho and Arroyo del Valle (see Section 3.3), have stayed relatively low, especially during times of significant stream recharge.

The TDS content in groundwater is lowest in the areas adjacent to the artificial stream recharge reaches on the Arroyo Valle, southeast of the mining area, at generally less than 500 mg/L of TDS. There are three main regions where TDS concentrations exceed 1,000 mg/L (Figure 3.2-9):

1. In the southern portion of the Dublin Subbasin, extending through the central portion of the Bernal Subbasin. This high TDS area is most likely due to the combination of the concentrating effects of urban irrigation, the current and historical wastewater treatment land use, and/or the leaching of lacustrine sediments that occur in that area.
2. Along the northern to northeastern portion of the groundwater basin extending the full length of the Camp-Amador Subbasin boundary. This feature is most likely due to poor quality water from the marine sediments to the east and north recharging along the Arroyo Las Positas. Irrigation, with recycled water in particular, is another source of high TDS water that is recharging the upper aquifer in this region.
3. For the 2010 Water Year (and occasionally in the past) two wells along the southwestern boundary of the Main Basin (3S/1E 20Q 2 and 20P 2) have TDS concentrations above 1,000 mg/L. The reason for this is unknown, but the TDS may enter the Main Basin from runoff and/or subsurface inflow from the neighboring Livermore Uplands to the south.

The TDS concentration in mining area pond C1 appears to be slightly higher than those in surrounding ponds. This is likely due to the salt-concentrating effects of evaporation in combination with low infiltration of the surrounding, lower-salt groundwater.

NITRATE

Nitrate does exist in the upper aquifer at concentrations above 45 mg/L (the Maximum Contaminant Level or MCL, as specified by the EPA) (orange and red areas in Figure 3.2-10) in the following locations:

1. There is a plume that extends from the western portion of the Mocho I and eastern portion of the Mocho II Subbasins to the northeastern portion of the Amador Subbasin. Portions of this nitrate plume date back to at least the 1960s, however, over the last few years this plume has developed into two zones with concentrations above the MCL: in the Mocho I Subbasin up to 57 mg/L and one in the Mocho II Subbasin up to 73.5 mg/L (up from 59.8 mg/L last year). Its causes are believed to be both natural (i.e., buried native vegetation) and artificial (i.e., existing and historical wastewater disposal, and fertilizer and livestock manure leaching). There are over 100 septic tanks still in use near the proximal end of the plume.
2. Southern portion of the Mocho I Subbasin south of Tesla Road (maximum concentration 91.67 mg/L in 2010, 123.11 mg/L in 2009). This high nitrate concentration is believed to be related to the overlying agricultural land use.
3. May Subbasin near May School Rd (maximum concentration 119.13 mg/L in 2010, 174.49 mg/L in 2009). This is the highest nitrate concentration detected in the basin. In 2008 as part of a one-time water quality study in this area, Zone 7 sampled and analyzed several domestic wells in the area to determine the extent of nitrate contamination. These results (presented in the 2008 annual report, *Zone 7, 2009*) suggested that the nitrate appeared to be relatively localized with the highest concentration in the vicinity of 2S/2E 28D 2. The source of high nitrate was not identified; however it likely comes from agricultural land use in that area.
4. Camp Subbasin in the eastern portion of Dublin (maximum concentration 64.66 mg/L in 2010, 60.67 mg/L in 2009). This may be a remnant of past dairy operations in the area that were discontinued long ago.
5. Southern portion of the Mocho II Subbasin along Mines Road. Last year the nitrate concentration in 3S/2E 26J 2 had dropped below the MCL to 24.76 mg/L, however during the 2010 Water Year it increased to 88.57 mg/L. This high nitrate concentration is believed to be related to the overlying agricultural land use.

In 2009, nitrate in 3S/1E 22D 2 (in the southern portion of the Amador West Subbasin) was measured to be above the MCL (47.39 mg/L), however, the concentration dropped to 40.17 mg/L in this well during 2010.

BORON

While there is no MCL for boron, there is a CDPH notification level of 1 mg/L, and it does typically become a problem for irrigated crops when it exceeds 1 or 2 mg/L, depending on the crop. Boron exists at elevated concentrations (up to 30 mg/L) in the upper aquifer in the following areas of the groundwater basin (Figure 3.2-11):

1. There is a plume of elevated boron concentrations that extends along the Dublin-Bernal and Camp-Amador boundaries. The highest localized concentration of boron in this area was detected near the center of this area in 3S/1E 4J 5 at a concentration of 16 mg/L in 2010 (15.2 mg/L in 2009).
2. Boron was also detected in the eastern portion of the valley in the May, Spring, Mocho I, and Mocho II Subbasins. The highest concentration detected was in the northern portion of this area in 2S/2E 27P 2 at 30 mg/L in 2010 (26.0 mg/L in 2009).

During a one-time study in 2008 (see discussion above under ‘Nitrate’), boron was detected in one well (2S/2E 21R 3) in the North Livermore area at 7.47 mg/L; however, since this well is not in Zone 7’s annual monitoring program, this well has not been sampled since 2008.

The source of boron is unknown but may be from natural alkali/marine sediments. It should be noted that the boron detected in the western portion of the basin is primarily along the Arroyo Las Positas and lower Arroyo Mocho. It is likely that some of the source of this boron may be from the high-boron groundwater in the eastern portion of the Valley that has surfaced into the Arroyo Las Positas in the North Livermore area and flowed downstream to the Arroyo Mocho, recharging into the Amador Subbasin along the way.

3.2.4.3 Lower Aquifer Zone

TDS

Water quality in the majority of the lower aquifer of the Main Basin is generally of good quality, containing less than 500 mg/L TDS; however, in the Bernal Subbasin and around the margins of the Amador and Mocho II Subbasins, the lower aquifer contains groundwater with higher TDS concentrations (up to about 971 mg/L in 2010, see Figure 3.2-12; up to 975 mg/L in 2009). This is most likely due to deep percolation of high TDS water from the upper aquifer and subsurface inflow of high TDS water from marine sediments in the north.

Over the last few years, TDS concentrations have been increasing anomalously in wells located in and around the Mocho Wellfield. Zone 7 staff is investigating whether these increases are due to poorly constructed wells in the area or consequences of natural ‘leaky’ aquitards that separate the upper aquifers with poorer water quality and the lower aquifers which are being pumped. Additional sampling and water level measurements were conducted in 2009 and 2010 to investigate the cause for the increase. The results are discussed below in Section 3.2.4.4.

NITRATE

Nitrate was only detected above the MCL in the eastern portion of the Mocho II Subbasin (Figure 3.2-13). While smaller in extent, the general location of this plume mirrors the nitrate plume in the upper aquifer, suggesting that some of the nitrate in the upper aquifer has migrated into the lower aquifer. For the 2010 Water Year, the highest concentration of nitrate in the lower aquifer was 53.14 mg/L (53.59 mg/L in 2009).

BORON

In general, boron is not a problem in the lower aquifer where detections are typically less than 1 mg/L. However, boron was detected above 2 mg/L in three lower aquifer wells in the 2010 Water Year as follows (Figure 3.2-14):

1. Boron was detected in one well in the eastern portion of the Mocho II Subbasin: 2.3 mg/L in monitoring well 3S/2E 23E 2 (2.40 mg/L in 2009).
2. Boron was also detected above 2 mg/L in two monitoring wells near the Hopyard 9 Well in the northern portion of the Bernal Basin: 2.4 mg/L in 3S/1E 17D 4 (2.57 mg/L in 2009) and 2.5 mg/L in 3S/1E 17D11 (2.46 mg/L in 2009).

The source of boron is unconfirmed, but may be from natural alkali/marine sediments.

3.2.4.4 Increasing Salts Near Mocho Wellfield

During the 2008 and 2009 Water Years, TDS and hardness concentrations increased in several deep monitoring wells and the municipal wells in the Mocho Wellfield. Figure 3.2-21, which shows TDS and hardness concentrations in the four Mocho municipal wells, illustrates how TDS and hardness concentrations increased dramatically in Mochos 3 and 4 as compared to those in Mochos 1 and 2 in 2008. The figure also shows that historically, especially from 1983 to 1985, before Mochos 3 and 4 were constructed, TDS and hardness concentrations in Mochos 1 and 2 have been higher than they are now, but have decreased throughout the latter part of the 1980s, and have remained fairly constant since then. With the exception of Mocho 3, the TDS and hardness concentrations in the Mocho municipal wells have stabilized or decreased since 2008.

Zone 7's ongoing investigation efforts include:

- Analyzing drawdown data that is being collected from Upper Aquifer monitoring wells and from nearby abandoned wells as the Mocho wells are routinely operated;
- Comparing individual characteristic constituents of the water being produced from the Mocho wells with those found in upper aquifer monitoring wells; and
- Preparing detailed stratigraphic cross-sections through the area of interest to identify whether discontinuities exist in the confining layer(s) that is believed to separate the Upper Aquifer Zone from the Lower Aquifer Zones.

The preliminary conclusion is that higher TDS groundwater in the overlying upper aquifer zone, which the Mocho Wells were designed to exclude, is migrating vertically to the lower aquifer via one or more potential pathways. This preliminary conclusion is based on:

- Higher TDS concentrations in the lower aquifer appear to be limited to Mochos 3 and 4, and are not exhibiting a plume-like distribution, and

- Historically, higher TDS concentrations appear to occur when there is a downward vertical gradient (i.e., when the groundwater elevation in the upper aquifer is higher than the lower aquifer) (Figure 3.2-21).

Potential pathways for the vertical migration being investigated are:

- Direct conduits caused by improperly sealed abandoned wells in the immediate area of the Mochos 3 and 4 sites;
- Poor annular seals in Mocho Wells 3 and 4;
- Increased leakage through the semi-confining layer(s) which separate the Upper Aquifer Zone from the Lower Aquifer Zone caused by the induced head difference across it when the wells are pumping.

Completion of the investigation is anticipated for Summer 2011. The results and conclusions will be summarized in a technical memorandum and addressed in the Annual Report of the Groundwater Management Program for Water Year 2011. Also planned for 2011, is the destruction (sealing) of all abandoned and improperly sealed wells in the immediate vicinity of the Mocho Wellfield..

3.3 Surface Water Monitoring Program

3.3.1 Program Description

The objectives of Zone 7's Surface Water Monitoring Program are to:

- **Surface Water Flow Monitoring** – Quantify inflow and outflow of surface water entering and leaving the groundwater basin. Also, to quantify the portions recharging the groundwater basin's aquifers and the amounts being discharged from the groundwater basin by the gravel quarries' dewatering operations;
- **Surface Water Quality Monitoring** - Provide a record of water quality for the basin's recharge and discharge waters with which the groundwater basin's annual salt loading is calculated;
- **Del Valle Water Rights** - Satisfy the requirements of Zone 7's and Alameda County Water District's 'water rights' for the Arroyo Valle. This involves quarterly sampling and continuous flow monitoring at two surface water stations; and
- **NPDES Permitting** - Monitor Zone 7's treated water discharges at the Del Valle Water Treatment Plant (DVWTP), Patterson Pass Water Treatment Plant (PPWTP) (as required by National Pollutant Discharge Elimination System (NPDES) No. CAG382001, Order No. R2-2003-0062). Samples are taken above and below existing treatment plant discharge points during the first significant rainfall event of the season.

Table 3.2-1
Zone 7 Water Agency - Groundwater Monitoring Program
Program Wells with Measurement Frequency
2010 Water Year

SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
2S/1E 32E 1	End of Arnold Rd	Camp	U	SA		A				T-HAC-1	
2S/1E 32N 1	Camp Parks	Camp	U	SA		A				T-HAC-2	
2S/1E 32Q 1	Summer Glen Dr	Camp	U	SA		A				32Q1	
2S/1E 33L 1	Gleason Dr @ Tassajara	Camp	U	SA		A				33L1	
2S/1E 33P 2	Central Pkwy at Emerald Glen	Camp	U	SA		A				33P2	
2S/1E 33R 1	Central Pkwy @ Grafton	Camp	U	SA		A				T-DUB-1	
2S/1W 15F 1	BOLLINGER	Bishop	U	SA		A					
2S/1W 26C 2	PINE VALLEY	Dublin	U	SA		A					
2S/1W 36E 3	Kolb Park	Dublin	U	SA		A				36E3	
2S/1W 36F 1	Dublin High shallow	Dublin	L	SA		A					
2S/1W 36F 2	Dublin High mid	Dublin	L	SA		A					
2S/1W 36F 3	Dublin High deep	Dublin	L	SA		A					
2S/2E 27C 2	Dagnino Rd	Spring	U	SA							
2S/2E 27P 2	hartford ave east	Spring	U	SA		A					
2S/2E 28D 2	May School	May	U	SA		A				T-MAY-1	
2S/2E 28J 2	FCC Well	May	L	SA		A					
2S/2E 28Q 1	hartford ave	May	U	SA		A				T-MAY-2	
2S/2E 32K 2	jenson's N liv. Ave	Cayetano	U	SA		A					
2S/2E 34E 1	mud city	May	U	SA		A				T-MAY-3	
2S/2E 34Q 2	Hollyhock & Crocus	Spring	U	SA		A				T-SPR-2	
3S/1E 1F 2	Constitution Dr	Mocho II	U	SA		A				T-AIR-1	
3S/1E 1H 3	Collier Canyon g1	Mocho II	U	SA		Q				1H3	
3S/1E 1J 3	Triad Vineyard	Mocho II	L	SA							
3S/1E 1L 1	Kitty Hawk	Camp	U	SA		A				T-AIR-2	
3S/1E 1P 2	airport gas g5	Amador	U	SA		A				T-AIR-3	
3S/1E 1P 3	New airport well	Amador	L	SA		Q					
3S/1E 1R 2	Kittyhawk and Airway	Mocho II	U	SA		Q					
3S/1E 2J 2	Maint. Bldg	Camp	U	SA		A				T-GLF-2	
3S/1E 2J 3	Doolan Rd East	Camp	U	SA		A				T-GLF-1	
3S/1E 2K 2	Doolan Rd West	Camp	U	SA		A				2K2	
3S/1E 2M 3	Friesman Rd North	Camp	U	SA		A				T-FRI-1	
3S/1E 2N 2	Friesman Rd Mid	Camp	U	SA		A				T-FRI-2	
3S/1E 2N 6	Friesman Rd South	Amador	U	SA		A				T-FRI-3	
3S/1E 2P 3	Crosswinds Church	Camp	L	SA		A					
3S/1E 2Q 1	LPGC #1	Amador	U	SA		A				T-GLF-3	
3S/1E 2R 1	Beebs	Amador	U	SA		Q					
3S/1E 3G 2	fallon rd	Camp	U	SA		A					
3S/1E 4A 1	SMP-DUB-2	Camp	U	SA		A				T-DUB-2	
3S/1E 4J 5	Pimlico shallow	Camp	U	SA		A				T-DUB-3	
3S/1E 4J 6	Pimlico deep	Camp	U	SA		A				T-DUB-4	
3S/1E 4Q 2	gulfstream	Amador	U	SA		A					
3S/1E 5K 6	Rosewood shallow	Camp	U	SA		A					
3S/1E 5K 7	Rosewood deep	Camp	L	SA		A					
3S/1E 5L 3	Oracle	Camp	U	SA		A				T-HAC-3	

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SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/1E 5P 6	Owens Park	Camp	U	SA		A				T-HAC-4	
3S/1E 6F 3	Dublin Ct	Dublin	U	SA		A				6F3	
3S/1E 6G 5	Nissan Repair	Dublin	L	SA							
3S/1E 6N 2	DSRSD MW-3	Dublin	U	SA		A					
3S/1E 6N 3	DSRSD MW-4	Dublin	U	SA		A					
3S/1E 6N 6	DSRSD NE-76	Dublin	U	SA		A					
3S/1E 7B 2	Hopyard rd	Dublin	L	SA		A					
3S/1E 7B12	Hacienda Arch	Dublin	U	SA		A				T-CHA-1	
3S/1E 7D 1	DSRSD SW-75	Dublin	U	SA		A					
3S/1E 7D 2	DSRSD SW-40	Dublin	U								√
3S/1E 7D 3	DSRSD SE-70	Dublin	U	SA		A					
3S/1E 7D 4	DSRSD SE-35	Dublin	U								√
3S/1E 7G 7	Chabot Well	Dublin	U	SA		A				T-CHA-2	
3S/1E 7J 5	Thomas Hart School	Dublin	U	SA		A				T-CHA-3	
3S/1E 7M 2	DSRSD Sub	Dublin	U	SA		A				7M2	
3S/1E 7R 8	Mocho Canal North at Willow	Bernal	U	SA		A				T-CHA-4	
3S/1E 8B 1	Lizard Well	Amador	U	SA		A				T-HAC-5	
3S/1E 8G 4	Apache	Amador	U	SA		A				T-HAC-6	
3S/1E 8H 9	Mocho 4 Nested Shallow	Amador	L	M		A					
3S/1E 8H10	Mocho 4 Nested Middle	Amador	L	M		A					
3S/1E 8H11	Mocho 4 Nested deep	Amador	D	M		A					
3S/1E 8H13	Mocho 3 mon	Amador	D	M		A					
3S/1E 8H18	Mocho 4	Amador	L	R		Q	√				
3S/1E 8K 1	sutter gate	Amador	U	SA		A					
3S/1E 8N 1	sports park	Bernal	U	SA		A					
3S/1E 9B 1	Stoneridge	Amador	L	R		Q	√				
3S/1E 9G 1	3775 trenery - Kamp	Amador	U	SA		A					
3S/1E 9H10	NW Lake I Shallow	Amador	U	SA							
3S/1E 9H11	NW Lake I Deep	Amador	L	SA							
3S/1E 9J 7	SW Lake I Shallow	Amador	U	SA		A					
3S/1E 9J 8	SW Lake I Middle	Amador	L	SA		A					
3S/1E 9J 9	SW Lake I Deep	Amador	L	SA		A					
3S/1E 9M 2	Mocho 1	Amador	L			Q	√				
3S/1E 9M 3	Mocho 2	Amador	L	M		Q	√				
3S/1E 9M 4	Mocho 3	Amador	L	R		Q	√				
3S/1E 9P 5	Key_AmW_U (Mohr Key)	Amador	U	M		A			√		
3S/1E 9P 9	Mohr Ave Shallow	Amador	L	M		A					
3S/1E 9P10	Key_AmW_L	Amador	L	M		A			√		
3S/1E 9P11	Mohr Ave Deep	Amador	L	M		A					
3S/1E 10A 1	Rancho El Charro	Amador	L	SA							
3S/1E 10A 2	El C harro Rd	Amador	U	SA		A					
3S/1E 10B 8	Kaiser Rd Shallow	Amador	L	SA		A					
3S/1E 10B 9	Kaiser Rd Middle 1	Amador	L	SA		A					
3S/1E 10B10	Kaiser Rd Middle 2	Amador	L	SA		A					
3S/1E 10B11	Kaiser Rd Deep	Amador	D	SA		A					
3S/1E 10D 2	Stoneridge Shallow	Amador	L	SA		A					
3S/1E 10D 3	Stoneridge Middle 1	Amador	L	SA		A					
3S/1E 10D 4	Stoneridge Middle 2	Amador	L	SA		A					
3S/1E 10D 5	Stoneridge Deep	Amador	D	SA		A					
3S/1E 10D 7	North Lake I Shallow	Amador	U	SA							
3S/1E 10D 8	North Lake I Cluster 2	Amador	L	SA							

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SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/1E 10K 2	NorthWest Cope Lake	Amador	L	SA		A					
3S/1E 10K 3	COL 1	Amador	L	SA		A					
3S/1E 10N 2	South Lake I Shallow	Amador	U	SA							
3S/1E 10N 3	South Lake I Deep	Amador	L	SA							
3S/1E 11B 1	Airport West	Amador	U	SA		Q				11B1	
3S/1E 11C 3	LAVWMA ROW	Amador	U	SA		A				T-GLF-4	
3S/1E 11G 1	Key_AmE_U	Amador	U	M		A			√		
3S/1E 11G 2	Rancho Charro Middle 1	Amador	L	M		A					
3S/1E 11G 3	Rancho Charro Middle 2	Amador	L	M		A					
3S/1E 11G 4	Rancho Charro Deep	Amador	D	M		A					
3S/1E 11M 2	COL2 Monitoring	Amador	L	SA		A					
3S/1E 11M 3	COL 2	Amador	L	SA		A					
3S/1E 11P 6	New Jamieson Residence	Amador	L	SA		A					
3S/1E 12A 2	Airport South	Amador	U	SA		Q				12A2	
3S/1E 12D 2	LWRP G6	Amador	U			Q					
3S/1E 12G 1	Oaks Park Shallow	Amador	U	M		Q					
3S/1E 12H 4	LWRP Shallow	Amador	L	SA		A					
3S/1E 12H 5	LWRP Middle 1	Amador	L	SA		A					
3S/1E 12H 6	LWRP Middle 2	Amador	L	SA		A					
3S/1E 12H 7	LWRP Deep	Amador	D	SA		A					
3S/1E 12K 2	Key_AmE_L	Amador	L	R		A			√		
3S/1E 12K 3	Oaks Park Mid	Amador	L	M		A					
3S/1E 12K 4	Oaks Park Deep	Amador	D	M		A					
3S/1E 13P 1	cal rock	Amador	L	SA		A					
3S/1E 14B 1	Industrial Asphalt	Amador	L	SA		A					
3S/1E 14D 2	South Cope Lake	Amador	L	SA		A					
3S/1E 14K 2	lone star ind	Amador	L	SA							
3S/1E 15F 3	kaiser #8	Amador	L	SA							
3S/1E 15J 3	shadow cliff	Amador	L	SA		A					
3S/1E 15M 3	Bush/Valley South	Amador	L	SA		A					
3S/1E 16A 2	Pleas 8	AmWest	L	M		A	√				
3S/1E 16A 4	Bush/Valley Mid	Amador	L	SA		A					
3S/1E 16B 1	Bush/Valley North	Amador	D	SA		A					
3S/1E 16C 2	Santa Rita Valley Shallow	Amador	L	SA		A					
3S/1E 16C 3	Santa Rita Valley Middle	Amador	L	SA		A					
3S/1E 16C 4	Santa Rita Valley Deep	Amador	L	SA		A					
3S/1E 16E 4	black ave - cultural	Amador	U	SA		A					
3S/1E 16L 2	Pleas 3 - MW	Amador	U	M		A					
3S/1E 16L 5	Pleas 5	Amador	L	M		A	√				
3S/1E 16L 7	Pleas 6	Amador	L	M		A	√				
3S/1E 16P 5	Vervais Monitor	Amador	U	R	x	SA		x			
3S/1E 16R 1	Stanley Berry Farm	Amador	L	SA							
3S/1E 17B 4	Casterson	Amador	L	SA		A					
3S/1E 17D 3	Hopyard Nested Shallow	Bernal	L	M		A					
3S/1E 17D 4	Hopyard Nested Middle 1	Bernal	L	M		A					
3S/1E 17D 5	Hopyard Nested Middle 2	Bernal	L	M		A					
3S/1E 17D 6	Hopyard Nested Middle 3	Bernal	L	M		A					
3S/1E 17D 7	Hopyard Nested Deep	Bernal	D	M		A					
3S/1E 17D10	Hopyard 7	Bernal	L	SA							
3S/1E 17D11	Hopyard 9 Monitoring Well	Bernal	L	SA		A					
3S/1E 17D12	Hopyard 9	Bernal	L	R		Q	√				

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SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/1E 18A 5	Pleas 7	Bernal	L	M		A	√				
3S/1E 18A 6	Hopyard 6	Bernal	L	R		Q	√				
3S/1E 18E 4	Valley Trails II	Bernal	U	SA		A					
3S/1E 18J 2	camino segura	Bernal	U	SA		A					
3S/1E 18N 1	merritt	Bernal	L	SA							
3S/1E 19A10	SFWD South (B)	Bernal	L			A	√				
3S/1E 19A11	SFWD North (A)	Bernal	L	SA		A	√				
3S/1E 19C 4	del valle & laguna	Bernal	U	SA		A					
3S/1E 19K 1	680/bernal	Bernal	U	SA		A					
3S/1E 20B 2	Fairgrounds Potable	Bernal	L	SA		A	√				
3S/1E 20C 3	Fairgrounds Potable Backup	Bernal	L	SA		A	√				
3S/1E 20C 7	Key_Bern_U	Bernal	U	R	x	SA		x	√		
3S/1E 20C 8	Key_Bern_L	Bernal	L	M		A			√		
3S/1E 20C 9	Fair Nested Deep	Bernal	L	M		A					
3S/1E 20J 4	civic center	Bernal	U	SA		A					
3S/1E 20M11	S.F "M"LINE	Bernal	U	SA		A					
3S/1E 20Q 2	20Q2	Bernal	U	SA		A				T-PLE-3	
3S/1E 22D 2	vineyard trailer	Amador	U	SA		A				T-BER-3	
3S/1E 23J 1	1627 vineyard trailer	Amador	U	SA		A					
3S/1E 24Q 1	Ruby Hills	Amador	L	SA							
3S/1E 25C 3	Katz Winery Mansion	Amador	U	SA		A					
3S/1E 29M 4	f.c. channel	Castle	U	M	x	A					
3S/1E 29P 2	castlewood dr	Bernal	U	SA		A					
3S/1W 1B 9	DSRSD Shallow	Dublin	L	SA		A					
3S/1W 1B10	DSRSD Middle	Dublin	L	SA		A					
3S/1W 1B11	DSRSD Deep	Dublin	L	SA		A				1B11	
3S/1W 1J 1	DSRSD MW-1	Dublin	U	SA		A					
3S/1W 2A 2	McNamara's	Dublin	U	SA		A				2A2	
3S/1W 12A 9	DSRSD NW-75	Dublin	U	SA		A					
3S/1W 12A10	DSRSD NW-40	Dublin	U			A					
3S/1W 12B 2	Stoneridge Mall Rd	Dublin	U	SA		A					
3S/1W 12J 1	DSRSD South	Dublin	U	SA		A					
3S/1W 13J 1	muirwood dr	Castle	U	SA		A					
3S/2E 1F 2	Brisa at Circuit City	Spring	U	SA		A					
3S/2E 2B 2	south front rd	Spring	U	SA		A					
3S/2E 3A 1	Bluebell	Spring	U	SA		A				T-SPR-1	
3S/2E 3K 3	first & S. front rd	Mocho I	U	SA		A				3K3	
3S/2E 5N 1	1037 portola - trailer	Mocho II	L	SA		A					
3S/2E 7C 2	york way - jaws - G4	Mocho II	U	SA		Q					
3S/2E 7H 2	dakota	Mocho II	U	SA		A					
3S/2E 7N 1	kittyhawk south	Amador	U	SA		A					
3S/2E 7P 3	CWS STA 24	Amador	L	M		A	√				
3S/2E 7R 2	CWS STA 31 Monitoring	Mocho II	D	M							
3S/2E 7R 3	CWS STA 31	Mocho II	L	M		A	√				
3S/2E 8F 1	CWS STA 10	Mocho II	L	M		A	√				
3S/2E 8G 1	CWS STA 19; Key_Mo2_L	Mocho II	L	M		A	√				
3S/2E 8H 2	North k	Mocho II	U	SA		A					
3S/2E 8H 3	Key_Mo2_L	Mocho II	L	M		A			√		
3S/2E 8H 4	N Liv Ave Deep	Mocho II	L	M		A					
3S/2E 8K 2	Key_Mo2_U (Livermore Key)	Mocho II	U	R		A			√		
3S/2E 8N 2	CWS STA 14	Mocho II	L	M		A	√				

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SITE INFORMATION				Levels		Quality			Levels and Quality		
State Name	Well Name	Subbasin	Aq	Freq	WR	Freq	Mu	WR	Key	SMP	Oth
3S/2E 8P 1	CWS STA 8	Mocho II	L	M		A	√				
3S/2E 8Q14	CMT-1 Z7	Mocho II	U	SA		A					
3S/2E 9L 1	CWS STA 17	Mocho II	L	M							
3S/2E 9P 1	CWS STA 12	Mocho II	L	M		A	√				
3S/2E 9Q 1	CWS STA 9	Mocho II	L	M		A	√				
3S/2E 9Q 4	school st	Mocho II	U	SA		A					
3S/2E 10F 3	hexcel	Mocho I	U	SA		A					
3S/2E 10Q 1	almond	Mocho II	U	SA		A					
3S/2E 10Q 2	LLNL P-703	Mocho II	L	SA		A					
3S/2E 11C 1	joan way	Mocho I	U	SA		A				11C1	
3S/2E 12C 4	LLNL W-486	Spring	U	SA		A					
3S/2E 12J 3	LLNL W-017A	Spring	L	SA		A					
3S/2E 14A 3	S. vasco @east ave	Mocho I	U	SA		A					
3S/2E 14B 1	5763 east ave	Mocho I	L	SA		SA					
3S/2E 15E 2	Retzlaff Winery	Mocho II	L	SA		A					
3S/2E 15Q 6	Concannon	Mocho II	L	SA		A					
3S/2E 15R 5		Mocho II									√
3S/2E 15R17	Buena Vista Shallow	Mocho II	U	SA		A					
3S/2E 15R18	Buena Vista Deep	Mocho II	L	SA		A					
3S/2E 16A 3	Memory Gardens	Mocho II	L	SA		A					
3S/2E 16B 1	CWS STA 5	Mocho II	L	M		A	√				
3S/2E 16C 1	CWS STA 15	Mocho II	L	M		A	√				
3S/2E 16E 4	pepper tree	Mocho II	U	SA		A					
3S/2E 17E 2	Mocho Street	Mocho II	U	SA		A					
3S/2E 18B 1	CWS STA 20	Amador	L	M		A	√				
3S/2E 18E 1	E. stanley	Amador	U	SA		A					
3S/2E 19D 7	Isabel Shallow	Amador	L	SA		A					
3S/2E 19D 8	Isabel Middle 1	Amador	L	SA		A					
3S/2E 19D 9	Isabel Middle 2	Amador	L	SA		A					
3S/2E 19D10	Isabel Deep	Amador	L	SA		A					
3S/2E 20M 1	Alden Lane	Amador	L	SA		A					
3S/2E 22B 1	grapes	Mocho II	U	SA		A					
3S/2E 23E 1	Mines Nested Shallow	Mocho II	U	SA		A					
3S/2E 23E 2	Mines Nested Deep	Mocho II	L	SA		A					
3S/2E 24A 1	S. greenville	Mocho I	U	SA		A				24A1	
3S/2E 26J 2	mines rd	Mocho II	U	SA		A					
3S/2E 29F 4	usgs wetmore	Amador	U	M	x	SA		x			
3S/2E 30D 2	vineyard	Amador	U	R	x	A				T-VIN-3	
3S/2E 30G 1	genesis farms	Amador	L	SA							
3S/2E 33G 1	crohare	Amador	U	M	x	SA		x			
3S/2E 33G 5	33G 5	Amador									√
3S/3E 7D 2	7D 2	Spring	U	SA		A					
3S/3E 7M 2	lupin way	Spring	L	SA							
TOTALS:	All Wells: 240	In Program: 236		232	6	216	26	4	8	51	4

Salt Management Plan (SMP) Designations

T-AIR = Airport Transect
T-BER = Bernal Transect
T-CHA = Chabot Transect
T-DUB = East Dublin Transect
T-FRI = Friesman Transect

T-HAC = Hacienda Transect
T-HV = Happy Valley Transect
T-LIV = South Livermore Transect
T-MAY = May Transect
T-PLE = Pleasanton Transect

T-RH = Ruby Hill Transect
T-SPR = Springtown Transect
T-VIN = Vineyard Transect
T-WEN = Wente Transect

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Table 3.2-2
Zone 7 Water Agency - Groundwater Monitoring Program
Well Construction Details - 2010 Water Year

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
2S/1E 32E 1	monitor	End of Arnold Rd	ZONE 7	Camp	Upper	392.56	70	2	55 - 70
2S/1E 32N 1	monitor	Camp Parks	ZONE 7	Camp	Upper	360.79	44	2.5	35 - 41
2S/1E 32Q 1	monitor	Summer Glen Dr	ZONE 7	Camp	Upper	367.55	45	2	30 - 45
2S/1E 33L 1	monitor	Gleason Dr @ Tassajara	ZONE 7	Camp	Upper	389.46	80	2	65 - 80
2S/1E 33P 2	monitor	Central Pkwy at Emerald Glen P	ZONE 7	Camp	Upper	370.05	55	2	45 - 55
2S/1E 33R 1	monitor	Central Pkwy @ Grafton	ZONE 7	Camp	Upper	358.5	60	2	40 - 60
2S/1W 15F 1	monitor	BOLLINGER	ZONE 7	Bishop	Upper	439.44	60	2.5	50.3 - 55.3
2S/1W 26C 2	monitor	PINE VALLEY	ZONE 7	Dublin	Upper	406.53	50	2.5	40 - 45
2S/1W 36E 3	monitor	Kolb Park	ZONE 7	Dublin	Upper	346.51	60	2.5	50 - 55
2S/1W 36F 1	nested	Dublin High shallow	DSRSD	Dublin	Lower	342.71	190	2	140 - 180
2S/1W 36F 2	nested	Dublin High mid	DSRSD	Dublin	Lower	342.71	320	2	270 - 310
2S/1W 36F 3	nested	Dublin High deep	DSRSD	Dublin	Lower	342.71	520	2	440 - 510
2S/2E 27C 2	supply	Dagnino Rd	JACK PIECEFIELD	Spring	Upper	542.14	108	8	41 - 56
2S/2E 27P 2	monitor	hartford ave east	ZONE 7	Spring	Upper	505.43	68	4	35 - 63
2S/2E 28D 2	monitor	May School	ZONE 7	May	Upper	555.15	55	2.5	45 - 50
2S/2E 28J 2	supply	FCC Well	FCC	May	Lower	518.84	230	6	50 - 230
2S/2E 28Q 1	monitor	hartford ave	ZONE 7	May	Upper	513.04	28	2.5	17.6 - 22.6
2S/2E 32K 2	monitor	jenson's N liv. Ave	ZONE 7	Cayetano	Upper	507.43	43	2.5	33 - 38
2S/2E 34E 1	monitor	mud city	ZONE 7	May	Upper	499.73	49	2.5	40 - 45
2S/2E 34Q 2	monitor	Hollyhock & Crocus	ZONE 7	Spring	Upper	507.24	50	2	25 - 50
3S/1E 1F 2	monitor	Constitution Dr	ZONE 7	Mocho II	Upper	428.44	40	2	25 - 40
3S/1E 1H 3	monitor	Collier Canyon g1	ZONE 7	Mocho II	Upper	422.8	80	2.5	70 - 75
3S/1E 1J 3	irrigation	Triad Vineyard	TKG INTERNATIONAL	Mocho II	Lower	417.88	300	9	270 - 290
3S/1E 1L 1	monitor	Kitty Hawk	ZONE 7	Camp	Upper	403.04	70	2	60 - 70
3S/1E 1P 2	monitor	airport gas g5	ZONE 7	Amador	Upper	389.64	50	2.5	40 - 45
3S/1E 1P 3	muni	New airport well	CITY OF LIVERMORE	Amador	Lower	394.44	480	12	245 - 460
3S/1E 1R 2	monitor	Kittyhawk and Airway	ZONE 7	Mocho II	Upper	398.59	56	8	49 - 55
3S/1E 2J 2	monitor	Maint. Bldg	ZONE 7	Camp	Upper	380.89	41	2	31 - 41
3S/1E 2J 3	monitor	Doolan Rd East	ZONE 7	Camp	Upper	406.35	65	2	55 - 65
3S/1E 2K 2	monitor	Doolan Rd West	ZONE 7	Camp	Upper	397.04	46	2.5	36.5 - 41.5
3S/1E 2M 3	monitor	Friesman Rd North	ZONE 7	Camp	Upper	365.04	50	2	35 - 50
3S/1E 2N 2	supply	Friesman Rd Mid	Crosswinds Church	Camp	Upper	363.24	80	6	0 - 0
3S/1E 2N 6	monitor	Friesman Rd South	ZONE 7	Amador	Upper	366.14	55	2	40 - 55
3S/1E 2P 3	potable	Crosswinds Church	Crosswinds Church	Camp	Lower	371.73	380	10	340 - 372
3S/1E 2Q 1	monitor	LPGC #1	ZONE 7	Amador	Upper	369.92	45	2	35 - 45
3S/1E 2R 1	monitor	Beebs	ZONE 7	Amador	Upper	376.29	33	2.5	21 - 26
3S/1E 3G 2	monitor	fallon rd	ZONE 7	Camp	Upper	354.24	50	2.5	40 - 45
3S/1E 4A 1	monitor	SMP-DUB-2	ZONE 7	Camp	Upper	350.67	49.5	2	29.5 - 49.5
3S/1E 4J 5	monitor	Pimlico shallow	ZONE 7	Camp	Upper	345.2	47	2	22 - 47
3S/1E 4J 6	monitor	Pimlico deep	ZONE 7	Camp	Upper	345.55	110	2	68 - 110
3S/1E 4Q 2	monitor	gulfstream	ZONE 7	Amador	Upper	345.42	90	2.5	80 - 85
3S/1E 5K 6	monitor	Rosewood shallow	ZONE 7	Camp	Upper	346.05	75	4	40 - 70
3S/1E 5K 7	monitor	Rosewood deep	ZONE 7	Camp	Lower	346.19	150	4	134 - 144
3S/1E 5L 3	monitor	Oracle	ZONE 7	Camp	Upper	339.43	40	2	15 - 40
3S/1E 5P 6	monitor	Owens Park	ZONE 7	Camp	Upper	336.65	35	2	25 - 35
3S/1E 6F 3	monitor	Dublin Ct	ZONE 7	Dublin	Upper	329.82	36	2.5	27 - 32
3S/1E 6G 5	supply	Nissan Repair	VALLEY NISSAN/VOLVO	Dublin	Lower	332.22	200	8	103 - 178
3S/1E 6N 2	monitor	DSRSD MW-3	DSRSD	Dublin	Upper	335.2	67	4	42 - 67

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
3S/1E 6N 3	monitor	DSRSD MW-4	DSRSD	Dublin	Upper	340.74	72		49 - 72
3S/1E 6N 6	monitor	DSRSD NE-76	DSRSD	Dublin	Upper	333.58	75	2	50 - 70
3S/1E 7B 2	monitor	Hopyard rd	ZONE 7	Dublin	Lower	327.77	152	4	143 - 149
3S/1E 7B12	monitor	Hacienda Arch	ZONE 7	Dublin	Upper	327.82	70	2	50 - 70
3S/1E 7D 1	monitor	DSRSD SW-75	DSRSD	Dublin	Upper	330.09	75	2	54 - 74
3S/1E 7D 2	monitor	DSRSD SW-40	DSRSD	Dublin	Upper	330	40	2	20 - 35
3S/1E 7D 3	monitor	DSRSD SE-70	DSRSD	Dublin	Upper	332.28	70	2	45 - 65
3S/1E 7D 4	monitor	DSRSD SE-35	DSRSD	Dublin	Upper	332.55	35	2	20 - 35
3S/1E 7G 7	monitor	Chabot Well	ZONE 7	Dublin	Upper	327.33	55	2	35 - 55
3S/1E 7J 5	monitor	Thomas Hart School	ZONE 7	Dublin	Upper	326.78	50	2	30 - 50
3S/1E 7M 2	monitor	DSRSD Sub	ZONE 7	Dublin	Upper	328.4	88	4	70 - 85
3S/1E 7R 8	monitor	Mocho Canal North at Willow	ZONE 7	Bernal	Upper	326.63	52	2	42 - 52
3S/1E 8B 1	monitor	Lizard Well	ZONE 7	Amador	Upper	338.28	148	4	55 - 82
3S/1E 8G 4	monitor	Apache	ZONE 7	Amador	Upper	341.47	85	2	60 - 85
3S/1E 8H 9	nested	Mocho 4 Nested Shallow	DSRSD	Amador	Lower	338.53	240	2	210 - 230
3S/1E 8H10	nested	Mocho 4 Nested Middle	DSRSD	Amador	Lower	339.26	440	2	290 - 430
3S/1E 8H11	nested	Mocho 4 Nested deep	DSRSD	Amador	Deep	339.26	720	2	520 - 720
3S/1E 8H13	monitor	Mocho 3 mon	ZONE 7	Amador	Deep	338.96	800	2	570 - 790
3S/1E 8H18	muni	Mocho 4	ZONE 7	Amador	Lower	341.94	745	20	515 - 730
3S/1E 8K 1	monitor	sutter gate	ZONE 7	Amador	Upper	332.37	99	2.5	89 - 94
3S/1E 8N 1	monitor	sports park	ZONE 7	Bernal	Upper	323.68	72	2.5	62 - 67
3S/1E 9B 1	muni	Stoneridge	ZONE 7	Amador	Lower	349.23	810	20	250 - 800
3S/1E 9G 1	supply	3775 trenery - Kamp	MRS. KAMP	Amador	Upper	352.36	160	9	77 - 149
3S/1E 9H10	nested	NW Lake I Shallow	ZONE 7	Amador	Upper	352.89	145	2	120 - 140
3S/1E 9H11	nested	NW Lake I Deep	ZONE 7	Amador	Lower	353.04	190	2	165 - 185
3S/1E 9J 7	nested	SW Lake I Shallow	ZONE 7	Amador	Upper	357.36	505	2	120 - 140
3S/1E 9J 8	nested	SW Lake I Middle	ZONE 7	Amador	Lower	357.55	505	2	280 - 300
3S/1E 9J 9	nested	SW Lake I Deep	ZONE 7	Amador	Lower	357.68	505	2	480 - 500
3S/1E 9M 2	muni	Mocho 1	ZONE 7	Amador	Lower	343.95	530	16	150 - 510
3S/1E 9M 3	muni	Mocho 2	ZONE 7	Amador	Lower	347.47	575	18	250 - 570
3S/1E 9M 4	muni	Mocho 3	ZONE 7	Amador	Lower	342.89	498	20	315 - 493
3S/1E 9P 5	monitor	Key_AmW_U (Mohr Key)	ZONE 7	Amador	Upper	349.4	105	2.5	95 - 100
3S/1E 9P 9	nested	Mohr Ave Shallow	ZONE 7	Amador	Lower	349.59	210	2	185 - 205
3S/1E 9P10	nested	Key_AmW_L	ZONE 7	Amador	Lower	349.51	310	2	285 - 305
3S/1E 9P11	nested	Mohr Ave Deep	ZONE 7	Amador	Lower	349.44	425	2	405 - 420
3S/1E 10A 1	supply	Rancho El Charro	JAMIESON COMPANY	Amador	Lower	364.65	253	10	103 - 240
3S/1E 10A 2	monitor	El C harro Rd	ZONE 7	Amador	Upper	367.35	88	4	70 - 80
3S/1E 10B 8	nested	Kaiser Rd Shallow	DSRSD	Amador	Lower	353.6	200	2	100 - 190
3S/1E 10B 9	nested	Kaiser Rd Middle 1	DSRSD	Amador	Lower	353.49	294	2	244 - 284
3S/1E 10B10	nested	Kaiser Rd Middle 2	DSRSD	Amador	Lower	353.52	600	2	400 - 590
3S/1E 10B11	nested	Kaiser Rd Deep	DSRSD	Amador	Deep	353.52	810	2	660 - 800
3S/1E 10D 2	nested	Stoneridge Shallow	DSRSD	Amador	Lower	349.32	212	2	182 - 212
3S/1E 10D 3	nested	Stoneridge Middle 1	DSRSD	Amador	Lower	349.28	322	2	262 - 312
3S/1E 10D 4	nested	Stoneridge Middle 2	DSRSD	Amador	Lower	349.3	616	2	366 - 606
3S/1E 10D 5	nested	Stoneridge Deep	DSRSD	Amador	Deep	349.32	790	2	710 - 780
3S/1E 10D 7	nested	North Lake I Shallow	ZONE 7	Amador	Upper	361.06	215	2	118 - 138
3S/1E 10D 8	nested	North Lake I Cluster 2	ZONE 7	Amador	Lower	361.02	215	2	190 - 210
3S/1E 10K 2	monitor	NorthWest Cope Lake	ZONE 7	Amador	Lower	358.68	590.6	4	195.5 - 585.6
3S/1E 10K 3	muni	COL 1	ZONE 7	Amador	Lower	354	530	18	205 - 530
3S/1E 10N 2	nested	South Lake I Shallow	ZONE 7	Amador	Upper	360.31	195	2	125 - 145
3S/1E 10N 3	nested	South Lake I Deep	ZONE 7	Amador	Lower	360.18	195	2	170 - 190
3S/1E 11B 1	monitor	Airport West	ZONE 7	Amador	Upper	369.35	43	2.5	33 - 38

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
3S/1E 11C 3	monitor	LAVWMA ROW	ZONE 7	Amador	Upper	364.82	55	2	35 - 55
3S/1E 11G 1	nested	Key_AmE_U	DSRSD	Amador	Upper	371.62	120	2	100 - 110
3S/1E 11G 2	nested	Rancho Charro Middle 1	DSRSD	Amador	Lower	371.61	350	2	230 - 340
3S/1E 11G 3	nested	Rancho Charro Middle 2	DSRSD	Amador	Lower	371.64	590	2	380 - 580
3S/1E 11G 4	nested	Rancho Charro Deep	DSRSD	Amador	Deep	371.68	790	2	620 - 780
3S/1E 11M 2	monitor	COL2 Monitoring	ZONE 7	Amador	Lower	365.96	700	4.5	199 - 699
3S/1E 11M 3	muni	COL 2	ZONE 7	Amador	Lower	364	684	18	345 - 684
3S/1E 11P 6	potable	New Jamieson Residence	DOUG JAMIESON	Amador	Lower	376.67	400	5	240 - 380
3S/1E 12A 2	monitor	Airport South	ZONE 7	Amador	Upper	401.35	69	2.5	63.7 - 68.7
3S/1E 12D 2	monitor	LWRP G6	ZONE 7	Amador	Upper	384.45	44.6		36 - 41
3S/1E 12G 1	monitor	Oaks Park Shallow	ZONE 7	Amador	Upper	404.47	73	2.5	63 - 68
3S/1E 12H 4	nested	LWRP Shallow	CITY OF LIVERMORE	Amador	Lower	407.75	270	2	185 - 260
3S/1E 12H 5	nested	LWRP Middle 1	CITY OF LIVERMORE	Amador	Lower	407.78	400	2	360 - 390
3S/1E 12H 6	nested	LWRP Middle 2	CITY OF LIVERMORE	Amador	Lower	407.75	480	2	410 - 468
3S/1E 12H 7	nested	LWRP Deep	CITY OF LIVERMORE	Amador	Deep	407.67	684	2	609 - 674
3S/1E 12K 2	nested	Key_AmE_L	ZONE 7	Amador	Lower	406.29	300	2	210 - 295
3S/1E 12K 3	nested	Oaks Park Mid	ZONE 7	Amador	Lower	406.83	475	2	355 - 470
3S/1E 12K 4	nested	Oaks Park Deep	ZONE 7	Amador	Deep	406.71	475	2	550 - 570
3S/1E 13P 1	supply	cal rock	JAIMESON COMPANY	Amador	Lower	399.98	652	14	94 - 652
3S/1E 14B 1	industrial	Industrial Asphalt	VULCAN MATERIALS	Amador	Lower	384.2	435	8	200 - 410
3S/1E 14D 2	monitor	South Cope Lake	ZONE 7	Amador	Lower	371.83	740	16	170 - 740
3S/1E 14K 2	supply	lone star ind	LONESTAR	Amador	Lower	391.73	508	16	120 - 480
3S/1E 15F 3	supply	kaiser #8	KAISER	Amador	Lower	368.99	640	14	195 - 615
3S/1E 15J 3	supply	shadow cliff	EAST BAY REGIONAL PARK	Amador	Lower	344.59	196	8	154 - 184
3S/1E 15M 3	monitor	Bush/Valley South	ZONE 7	Amador	Lower	362.88	600	2	280 - 590
3S/1E 16A 2	muni	Pleas 8	CITY OF PLEASANTON	AmWest	Lower	358.2	510	20	200 - 495
3S/1E 16A 4	monitor	Bush/Valley Mid	ZONE 7	Amador	Lower	359.36	603	2	260 - 580
3S/1E 16B 1	monitor	Bush/Valley North	ZONE 7	Amador	Deep	355.81	805	2	605 - 800
3S/1E 16C 2	nested	Santa Rita Valley Shallow	ZONE 7	Amador	Lower	344.38	190	2	165 - 185
3S/1E 16C 3	nested	Santa Rita Valley Middle	ZONE 7	Amador	Lower	344.27	305	2	280 - 300
3S/1E 16C 4	nested	Santa Rita Valley Deep	ZONE 7	Amador	Lower	344.16	375	2	355 - 370
3S/1E 16E 4	monitor	black ave - cultural	ZONE 7	Amador	Upper	351.69	105	2.5	95 - 100
3S/1E 16L 2	monitor	Pleas 3 - MW	CITY OF PLEASANTON	Amador	Upper	355.86	151	12	56 - 136
3S/1E 16L 5	muni	Pleas 5	CITY OF PLEASANTON	Amador	Lower	358.05	685	18	149 - 650
3S/1E 16L 7	muni	Pleas 6	CITY OF PLEASANTON	Amador	Lower	354.47	647	18	165 - 647
3S/1E 16P 5	monitor	Vervais Monitor	ZONE 7	Amador	Upper	354.51	75	2.5	64 - 69
3S/1E 16R 1	supply	Stanley Berry Farm	R.L. IRBY	Amador	Lower	362.5	239	10	70 - 226
3S/1E 17B 4	supply	Casterson	LLOYD HAINES	Amador	Lower	337.69	248	8	0 - 248
3S/1E 17D 3	nested	Hopyard Nested Shallow	ZONE 7	Bernal	Lower	325.13	108	4	92 - 98
3S/1E 17D 4	nested	Hopyard Nested Middle 1	ZONE 7	Bernal	Lower	325.14	236	4	206 - 226
3S/1E 17D 5	nested	Hopyard Nested Middle 2	ZONE 7	Bernal	Lower	325.13	308	4	266 - 286
3S/1E 17D 6	nested	Hopyard Nested Middle 3	ZONE 7	Bernal	Lower	325.12	408	4	378 - 398
3S/1E 17D 7	nested	Hopyard Nested Deep	ZONE 7	Bernal	Deep	325.13	684	4	654 - 674
3S/1E 17D10	monitor	Hopyard 7	ZONE 7	Bernal	Lower	328.13	425	24	185 - 415
3S/1E 17D11	monitor	Hopyard 9 Monitoring Well	ZONE 7	Bernal	Lower	324.84	603	2	340 - 505
3S/1E 17D12	muni	Hopyard 9	ZONE 7	Bernal	Lower	327.9	315	18	235 - 310
3S/1E 18A 5	muni	Pleas 7	CITY OF PLEASANTON	Bernal	Lower	329.05	454	18	120 - 440
3S/1E 18A 6	muni	Hopyard 6	ZONE 7	Bernal	Lower	326.74	500	18	158 - 490
3S/1E 18E 4	monitor	Valley Trails II	ZONE 7	Bernal	Upper	320.21	83	4	69 - 79
3S/1E 18J 2	monitor	camino segura	ZONE 7	Bernal	Upper	323.02	71	2.5	61 - 66
3S/1E 18N 1	supply	merritt	RALPH MERRITT	Bernal	Lower	319.43	708	12	229 - 610
3S/1E 19A10	muni	SFWD South (B)	SFWD	Bernal	Lower	337.02	331		189 - 327

<i>Site</i>	<i>Type</i>	<i>Other Name</i>	<i>Owner</i>	<i>Basin</i>	<i>Aquifer</i>	<i>RP</i>	<i>Dp</i>	<i>Di</i>	<i>Perf</i>
3S/1E 19A11	muni	SFWD North (A)	SFWD	Bernal	Lower	334.27	330	18	196 - 320
3S/1E 19C 4	monitor	del valle & laguna	ZONE 7	Bernal	Upper	322.23	78	4	68 - 73
3S/1E 19K 1	monitor	680/bernal	ZONE 7	Bernal	Upper	321.54	57.6	2.5	47.6 - 52.6
3S/1E 20B 2	muni	Fairgrounds Potable	ALAMEDA COUNTY	Bernal	Lower	342.62	500	12	218 - 500
3S/1E 20C 3	muni	Fairgrounds Potable Backup	ALAMEDA FAIRGROUNDS	Bernal	Lower	340.31	110		74 - 107
3S/1E 20C 7	monitor	Key_Bern_U	ZONE 7	Bernal	Upper	338.66	153	2	65 - 145
3S/1E 20C 8	nested	Key_Bern_L	ZONE 7	Bernal	Lower	338.67	315	2	295 - 315
3S/1E 20C 9	nested	Fair Nested Deep	ZONE 7	Bernal	Lower	338.78	515	2	495 - 515
3S/1E 20J 4	monitor	civic center	ZONE 7	Bernal	Upper	331.62	72	2.5	62 - 67
3S/1E 20M11	monitor	S.F "M"LINE	ZONE 7	Bernal	Upper	325.73	71	2.5	61 - 66
3S/1E 20Q 2	monitor	20Q2	CITY OF PLEASANTON	Bernal	Upper	325.82	65	10	45 - 53
3S/1E 22D 2	monitor	vineyard trailer	ZONE 7	Amador	Upper	368.05	72	2.5	62 - 67
3S/1E 23J 1	monitor	1627 vineyard trailer	D. SAFRENO	Amador	Upper	428.2	120	8	0 - 120
3S/1E 24Q 1	supply	Ruby Hills	RUBY HILLS	Amador	Lower	427.5	440	14	200 - 400
3S/1E 25C 3	monitor	Katz Winery Mansion	RUBY HILLS	Amador	Upper	454.16	146	2	70 - 140
3S/1E 29M 4	monitor	f.c. channel	ZONE 7	Castle	Upper	310.94	57	2.5	47 - 52
3S/1E 29P 2	monitor	castlewood dr	ZONE 7	Bernal	Upper	302.82	42	2.5	32 - 37
3S/1W 1B 9	nested	DSRSD Shallow	DSRSD	Dublin	Lower	333.56	162	2	122 - 152
3S/1W 1B10	nested	DSRSD Middle	DSRSD	Dublin	Lower	333.57	414	2	274 - 404
3S/1W 1B11	nested	DSRSD Deep	DSRSD	Dublin	Lower	333.74	560	2	480 - 550
3S/1W 1J 1	monitor	DSRSD MW-1	DSRSD	Dublin	Upper	334.36	70		44 - 64
3S/1W 2A 2	monitor	McNamara's	ZONE 7	Dublin	Upper	369.4	47	2.5	37 - 42
3S/1W 12A 9	monitor	DSRSD NW-75	DSRSD	Dublin	Upper	332.14	74	2	49 - 69
3S/1W 12A10	monitor	DSRSD NW-40	DSRSD	Dublin	Upper	331.99	40	2	20 - 35
3S/1W 12B 2	monitor	Stoneridge Mall Rd	ZONE 7	Dublin	Upper	342.89	39.5	4	20 - 50
3S/1W 12J 1	monitor	DSRSD South	ZONE 7	Dublin	Upper	329.31	62	2.5	52 - 57
3S/1W 13J 1	monitor	muirwood dr	ZONE 7	Castle	Upper	343.94	48	2.5	39 - 44
3S/2E 1F 2	monitor	Brisa at Circuit City	ZONE 7	Spring	Upper	572.99	68.6	2.5	59 - 64
3S/2E 2B 2	monitor	south front rd	ZONE 7	Spring	Upper	539.45	46	2.5	36.9 - 41.9
3S/2E 3A 1	monitor	Bluebell	ZONE 7	Spring	Upper	517.63	54	2.5	44 - 49
3S/2E 3K 3	monitor	first & S. front rd	ZONE 7	Mocho I	Upper	522.83	60	2.5	50 - 55
3S/2E 5N 1	supply	1037 portola - trailer	TRAILER RANCH	Mocho II	Lower	440	210	10	0 - 210
3S/2E 7C 2	monitor	york way - jaws - G4	ZONE 7	Mocho II	Upper	420.84	49	2.5	39 - 44
3S/2E 7H 2	monitor	dakota	CITY OF LIVERMORE	Mocho II	Upper	442.85	54	2	44 - 54
3S/2E 7N 1	monitor	kittyhawk south	ZONE 7	Amador	Upper	421.06	130	4	76 - 130
3S/2E 7P 3	muni	CWS STA 24	CAL WATER SERVICE	Amador	Lower	431.46	510	16	300 - 490
3S/2E 7R 2	monitor	CWS STA 31 Monitoring	CAL WATER SERVICE	Mocho II	Deep	446	805	2	750 - 805
3S/2E 7R 3	muni	CWS STA 31	CAL WATER SERVICE	Mocho II	Lower	446	583	16	410 - 528
3S/2E 8F 1	muni	CWS STA 10	CAL WATER SERVICE	Mocho II	Lower	456.24	576	16	143 - 433
3S/2E 8G 1	muni	CWS STA 19; Key_Mo2_L	CAL WATER SERVICE	Mocho II	Lower	465.05	465	16	120 - 455
3S/2E 8H 2	monitor	North k	ZONE 7	Mocho II	Upper	469.61	46	2.5	36 - 41
3S/2E 8H 3	nested	Key_Mo2_L	ZONE 7	Mocho II	Lower	477.25	195	2	170 - 190
3S/2E 8H 4	nested	N Liv Ave Deep	ZONE 7	Mocho II	Lower	476.97	385	2	360 - 380
3S/2E 8K 2	monitor	Key_Mo2_U (Livermore Key)	ZONE 7	Mocho II	Upper	464.78	74	2.5	64 - 69
3S/2E 8N 2	muni	CWS STA 14	CAL WATER SERVICE	Mocho II	Lower	453.64	526	10	140 - 515
3S/2E 8P 1	muni	CWS STA 8	CAL WATER SERVICE	Mocho II	Lower	468.2	273	10	122 - 263
3S/2E 8Q14	monitor	CMT-1 Z7	B&C GAS	Mocho II	Upper	471.96	147	1.7	142 - 147
3S/2E 9L 1	muni	CWS STA 17	CAL WATER SERVICE	Mocho II	Lower	499.39	516	16	136 - 496
3S/2E 9P 1	muni	CWS STA 12	CAL WATER SERVICE	Mocho II	Lower	501.28	515	16	192 - 492
3S/2E 9Q 1	muni	CWS STA 9	CAL WATER SERVICE	Mocho II	Lower	518.15	572	14	180 - 492
3S/2E 9Q 4	monitor	school st	ZONE 7	Mocho II	Upper	504.35	80	2.5	70 - 75
3S/2E 10F 3	monitor	hexcel	ZONE 7	Mocho I	Upper	534.84	45	2.5	35 - 40

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3S/2E 10Q 1	monitor	almond	ZONE 7	Mocho II	Upper	555.36	43.5	2.5	33.5 - 33.8
3S/2E 10Q 2	monitor	LLNL P-703	LLNL	Mocho II	Lower	549.33	325	4.5	298 - 325
3S/2E 11C 1	monitor	joan way	ZONE 7	Mocho I	Upper	557.1	66.2	2.5	56.2 - 61.2
3S/2E 12C 4	monitor	LLNL W-486	LLNL	Spring	Upper	591.46	108	4.5	100 - 108
3S/2E 12J 3	monitor	LLNL W-017A	LLNL	Spring	Lower	628.84	160	5	127 - 157
3S/2E 14A 3	monitor	S. vasco @east ave	ZONE 7	Mocho I	Upper	601.87	110	2.5	100 - 105
3S/2E 14B 1	domestic	5763 east ave	LAS POSITAS SWIM CLUB	Mocho I	Lower	593.36	300	9	146 - 234
3S/2E 15E 2	irrigation	Retzlaff Winery	BOB TAYLOR	Mocho II	Lower	549.69	192	8	104 - 189
3S/2E 15Q 6	irrigation	Concannon	CONCANNON	Mocho II	Lower	577.26	301	12	220 - 301
3S/2E 15R 5	supply		GEORGE MUELLER	Mocho II		595	200	0	0 - 0
3S/2E 15R17	nested	Buena Vista Shallow	ZONE 7	Mocho II	Upper	592.41	63	2	38 - 58
3S/2E 15R18	nested	Buena Vista Deep	ZONE 7	Mocho II	Lower	592.47	138	2	113 - 133
3S/2E 16A 3	irrigation	Memory Gardens	MEMORY GARDENS	Mocho II	Lower	527.06	240	10	91 - 240
3S/2E 16B 1	muni	CWS STA 5	CAL WATER SERVICE	Mocho II	Lower	520.22	410	14	140 - 390
3S/2E 16C 1	muni	CWS STA 15	CAL WATER SERVICE	Mocho II	Lower	510.97	584	16	150 - 523
3S/2E 16E 4	monitor	pepper tree	ZONE 7	Mocho II	Upper	506.26	45	2.5	35 - 40
3S/2E 17E 2	supply	Mocho Street	JOHN & BARBARA STEIGER	Mocho II	Upper	467.71	94	6	0 - 94
3S/2E 18B 1	muni	CWS STA 20	CAL WATER SERVICE	Amador	Lower	438.56	497	16	190 - 465
3S/2E 18E 1	monitor	E. stanley	ZONE 7	Amador	Upper	423.86	133.8	2.5	123.8 - 128.8
3S/2E 19D 7	nested	Isabel Shallow	ZONE 7	Amador	Lower	415.07	180	2	100 - 180
3S/2E 19D 8	nested	Isabel Middle 1	ZONE 7	Amador	Lower	415.04	260	2	210 - 260
3S/2E 19D 9	nested	Isabel Middle 2	ZONE 7	Amador	Lower	414.98	390	2	280 - 390
3S/2E 19D10	nested	Isabel Deep	ZONE 7	Amador	Lower	414.89	470	2	420 - 470
3S/2E 20M 1	supply	Alden Lane	ALDEN LANE NURSERY	Amador	Lower	478.79	184	12	0 - 184
3S/2E 22B 1	monitor	grapes	ZONE 7	Mocho II	Upper	585.88	31.9	2.5	21.9 - 26.9
3S/2E 23E 1	nested	Mines Nested Shallow	ZONE 7	Mocho II	Upper	613.36	40	2	20 - 35
3S/2E 23E 2	nested	Mines Nested Deep	ZONE 7	Mocho II	Lower	613.23	110	2	95 - 105
3S/2E 24A 1	monitor	S. greenville	ZONE 7	Mocho I	Upper	717.7	46.3	2.5	36.3 - 41.3
3S/2E 26J 2	monitor	mines rd	ZONE 7	Mocho II	Upper	689.92	44	2.5	34 - 39
3S/2E 29F 4	monitor	usgs wetmore	ZONE 7	Amador	Upper	457.5	36	2.5	26 - 31
3S/2E 30D 2	monitor	vineyard	ZONE 7	Amador	Upper	431.6	44	4	24 - 39
3S/2E 30G 1	domestic	genesis farms	GENISIS FARMS	Amador	Lower	453.69	390	12	150 - 370
3S/2E 33G 1	monitor	crohare	ZONE 7	Amador	Upper	511.52	17	2.5	9 - 14
3S/2E 33G 5	irrigation	33G 5	CHARLES CROHARE	Amador		620	320	5	105 - 300
3S/3E 7D 2	monitor	7D 2	ZONE 7	Spring	Upper	622.84	74	2.5	64 - 69
3S/3E 7M 2	supply	lupin way	LEON MOORE	Spring	Lower	628.64	199	6	171 - 188

RP = Reference Point Elevation (in feet above MSL)

Dp = Depth of well (in feet below ground surface)

Di = Diameter of well casing (in inches)

Perf = Preferred interval (in feet below ground surface)

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2010 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2009		Spring 2010		Fall 2010		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 09 to Spring 10	Spring 10 to Fall 10	
2S/1E 32E 1	70	U	Camp	34.6	358.0	33.2	359.4	35.0	357.6	1.4	-1.8	-0.4
2S/1E 32Q 1	45	U	Camp	24.9	342.6	24.5	343.1	24.9	342.7	0.4	-0.4	0.0
2S/1E 33L 1	80	U	Camp	49.2	340.3	48.8	340.7	50.0	339.4	0.4	-1.2	-0.8
2S/1E 33P 2	55	U	Camp	30.7	339.3	30.8	339.3	31.4	338.7	-0.1	-0.6	-0.7
2S/1E 33R 1	60	U	Camp	19.3	338.7	19.4	339.1	20.1	338.5	0.4	-0.7	-0.3
2S/1W 15F 1	60	U	Bishop	10.5	428.9	50.4	389.0	10.5	428.9	-39.9	39.9	0.0
2S/1W 26C 2	50	U	Dublin	25.5	380.7	22.2	384.3	25.1	381.4	3.6	-2.9	0.7
2S/1W 36E 3	60	U	Dublin	4.9	341.6	2.5	344.0	7.8	338.8	2.4	-5.3	-2.8
2S/1W 36F 1	190	L	Dublin	24.4	318.3	13.7	329.0	22.4	320.3	10.7	-8.7	2.0
2S/1W 36F 2	320	L	Dublin	37.5	305.2	25.9	316.8	30.0	312.7	11.6	-4.1	7.6
2S/1W 36F 3	520	L	Dublin	67.6	275.1	102.2	240.5	114.2	228.6	-34.6	-12.0	-46.6
2S/2E 27C 2	108	U	Spring	15.9	526.2	16.3	525.9	16.7	525.5	-0.4	-0.4	-0.7
2S/2E 27P 2	68	U	Spring	3.3	502.2	1.3	504.1	3.0	502.4	2.0	-1.7	0.3
2S/2E 28D 2	55	U	May	28.0	527.2	28.3	526.9	28.7	526.4	-0.3	-0.4	-0.8
2S/2E 28J 2	230	L	May	4.4	514.5	3.0	515.8	4.4	514.5	1.3	-1.3	0.0
2S/2E 28Q 1	28	U	May	6.6	506.5	3.7	509.4	7.1	506.0	2.9	-3.4	-0.5
2S/2E 32K 2	43	U	Cayetano	8.9	498.6	8.1	499.3	9.5	498.0	0.7	-1.3	-0.6
2S/2E 34E 1	49	U	May	5.9	493.9	3.4	496.3	5.5	494.2	2.5	-2.1	0.3
2S/2E 34Q 2	50	U	Spring	3.4	503.9	2.2	505.0	2.9	504.3	1.2	-0.7	0.5
3S/1E 1F 2	40	U	Mocho II	19.7	408.8	18.5	409.9	18.0	410.4	1.2	0.5	1.6
3S/1E 1H 3	80	U	Mocho II	29.9	392.9	25.5	397.3	27.2	395.6	4.4	-1.8	2.6
3S/1E 1J 3	300	L	Mocho II	47.4	370.5	NM	-	44.0	373.9	-	-	3.4
3S/1E 1L 1	70	U	Camp	54.1	348.9	53.7	349.4	53.3	349.7	0.5	0.3	0.8
3S/1E 1P 2	50	U	Amador	22.3	367.3	20.9	368.8	23.5	366.1	1.4	-2.6	-1.2
3S/1E 1P 3	480	L	Amador	120.5	274.0	108.7	285.7	113.7	280.7	11.8	-5.0	6.8
3S/1E 1R 2	56	U	Mocho II	19.6	379.0	14.2	384.4	NM	-	5.3	-	-
3S/1E 2J 2	41	U	Camp	16.2	364.7	11.6	369.3	15.8	365.1	4.6	-4.3	0.4
3S/1E 2J 3	65	U	Camp	28.2	378.2	26.3	380.1	27.2	379.2	1.9	-0.9	1.0
3S/1E 2K 2	46	U	Camp	28.9	368.1	26.8	370.2	28.4	368.6	2.1	-1.6	0.5
3S/1E 2M 3	50	U	Camp	19.8	345.3	18.2	346.8	19.6	345.4	1.6	-1.4	0.2
3S/1E 2N 2	80	U	Camp	20.5	342.7	19.1	344.2	20.4	342.8	1.5	-1.4	0.1
3S/1E 2N 6	55	U	Amador	32.0	334.2	31.1	335.0	32.3	333.9	0.9	-1.2	-0.3
3S/1E 2P 3	380	L	Camp	102.0	269.8	68.0	303.7	101.9	269.9	34.0	-33.9	0.1
3S/1E 2Q 1	45	U	Amador	20.3	349.6	17.9	352.1	21.0	348.9	2.4	-3.1	-0.7
3S/1E 2R 1	33	U	Amador	20.2	356.1	15.1	361.2	19.9	356.4	5.0	-4.7	0.3
3S/1E 3G 2	50	U	Camp	16.1	338.1	12.8	341.5	15.0	339.2	3.3	-2.2	1.1
3S/1E 4A 1	50	U	Camp	17.0	333.7	16.8	333.9	17.6	333.1	0.2	-0.8	-0.6
3S/1E 4J 5	47	U	Camp	15.6	329.6	14.8	330.4	16.3	328.9	0.8	-1.5	-0.7
3S/1E 4J 6	110	U	Camp	18.5	327.0	18.3	327.2	19.4	326.2	0.2	-1.1	-0.9
3S/1E 4Q 2	90	U	Amador	49.5	295.9	51.7	293.7	52.9	292.5	-2.2	-1.2	-3.4
3S/1E 5K 6	75	U	Camp	13.6	332.5	12.4	333.7	13.3	332.8	1.2	-0.9	0.3
3S/1E 5K 7	150	L	Camp	18.8	327.4	18.1	328.1	19.1	327.1	0.7	-1.0	-0.3
3S/1E 5L 3	40	U	Camp	12.7	326.7	12.5	327.0	12.8	326.6	0.3	-0.3	-0.1
3S/1E 5P 6	35	U	Camp	11.1	325.5	10.1	326.6	10.6	326.1	1.1	-0.5	0.5
3S/1E 6F 3	36	U	Dublin	5.2	324.6	4.4	325.4	5.2	324.6	0.8	-0.8	0.0
3S/1E 6G 5	200	L	Dublin	10.4	321.8	19.2	313.0	20.5	311.7	-8.8	-1.3	-10.1
3S/1E 6N 2	67	U	Dublin	13.6	321.6	7.9	327.3	13.6	321.6	5.6	-5.7	0.0
3S/1E 7B 2	152	L	Dublin	9.9	317.9	8.8	319.0	9.7	318.1	1.1	-0.9	0.2
3S/1E 7B12	70	U	Dublin	11.7	316.1	10.7	317.1	11.4	316.4	1.0	-0.7	0.3
3S/1E 7G 7	55	U	Dublin	13.1	314.2	11.7	315.6	12.6	314.8	1.4	-0.8	0.6
3S/1E 7J 5	50	U	Dublin	14.9	311.9	14.5	312.2	15.0	311.8	0.3	-0.5	-0.1
3S/1E 7M 2	88	U	Dublin	17.9	310.5	15.1	313.3	17.1	311.3	2.8	-2.0	0.8
3S/1E 7R 8	52	U	Bernal	38.1	288.5	34.5	292.2	37.3	289.3	3.6	-2.8	0.8
3S/1E 8B 1	148	U	Amador	46.8	291.5	45.5	292.8	48.3	290.0	1.3	-2.8	-1.5
3S/1E 8G 4	85	U	Amador	49.9	291.6	49.8	291.7	51.6	289.9	0.1	-1.8	-1.7
3S/1E 8H 9	240	L	Amador	OBS	-	56.1	282.4	67.0	271.6	-	-10.8	-
3S/1E 8H10	440	L	Amador	80.8	258.5	59.6	279.7	71.0	268.2	21.2	-11.5	9.8
3S/1E 8H11	720	D	Amador	126.1	213.2	65.4	273.9	75.3	264.0	60.7	-9.9	50.8
3S/1E 8H13	800	D	Amador	119.0	219.9	64.6	274.4	74.8	264.2	54.5	-10.2	44.2
3S/1E 8H18	745	L	Amador	NM	-	70.1	271.8	79.6	262.3	-	-9.5	-
3S/1E 8K 1	99	U	Amador	49.6	282.8	43.0	289.4	46.8	285.6	6.6	-3.8	2.8
3S/1E 8N 1	72	U	Bernal	35.8	287.9	31.9	291.8	35.8	287.9	3.9	-3.9	0.0
3S/1E 9B 1	810	L	Amador	NM	-	NM	-	85.7	263.6	-	-	-
3S/1E 9G 1	160	U	Amador	59.6	292.8	96.5	255.9	78.3	274.1	-36.9	18.2	-18.7
3S/1E 9H10	145	U	Amador	58.6	294.3	60.4	292.5	62.5	290.4	-1.8	-2.0	-3.8
3S/1E 9H11	190	L	Amador	68.9	284.2	64.3	288.7	69.3	283.8	4.5	-4.9	-0.4
3S/1E 9J 7	505	U	Amador	64.1	293.2	65.3	292.1	67.1	290.3	-1.2	-1.8	-3.0
3S/1E 9J 8	505	L	Amador	82.9	274.7	69.6	288.0	78.5	279.1	13.3	-8.9	4.4
3S/1E 9J 9	505	L	Amador	101.1	256.5	76.4	281.3	96.6	261.1	24.8	-20.2	4.5
3S/1E 9M 3	575	L	Amador	NM	-	NM	-	NM	-	-	-	-
3S/1E 9M 3	575	L	Amador	NM	-	NM	-	NM	-	-	-	-
3S/1E 9M 4	498	L	Amador	85.9	257.0	64.0	278.9	76.0	266.9	22.0	-12.0	10.0

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2010 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2009		Spring 2010		Fall 2010		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 09 to Spring 10	Spring 10 to Fall 10	
2S/1E 32E 1	70	U	Camp	34.6	358.0	33.2	359.4	35.0	357.6	1.4	-1.8	-0.4
2S/1E 32Q 1	45	U	Camp	24.9	342.6	24.5	343.1	24.9	342.7	0.4	-0.4	0.0
3S/1E 9P 5	105	U	Amador	60.1	289.3	58.7	290.7	61.3	288.1	1.5	-2.6	-1.2
3S/1E 9P 9	210	L	Amador	67.0	282.6	60.1	289.5	65.5	284.1	6.8	-5.4	1.5
3S/1E 9P10	310	L	Amador	78.6	271.0	62.6	287.0	72.5	277.0	16.0	-9.9	6.1
3S/1E 9P11	425	L	Amador	94.0	255.4	66.7	282.8	84.5	264.9	27.3	-17.8	9.5
3S/1E 10A 1	253	L	Amador	67.5	297.2	66.0	298.7	NM	-	1.6	-	-
3S/1E 10A 2	88	U	Amador	56.1	308.8	63.1	304.3	57.3	310.1	-4.5	5.9	1.3
3S/1E 10B 8	200	L	Amador	66.0	287.6	61.2	292.5	65.3	288.3	4.9	-4.1	0.7
3S/1E 10B 9	294	L	Amador	75.2	278.3	64.0	289.5	72.9	280.6	11.2	-8.9	2.3
3S/1E 10B10	600	L	Amador	93.1	260.4	71.9	281.6	91.3	262.2	21.2	-19.4	1.8
3S/1E 10B11	810	D	Amador	111.3	242.3	78.7	274.8	100.0	253.5	32.5	-21.3	11.3
3S/1E 10D 2	212	L	Amador	65.1	283.7	58.4	290.9	64.1	285.2	7.3	-5.7	1.6
3S/1E 10D 3	322	L	Amador	74.5	274.1	61.3	288.0	71.4	277.9	13.9	-10.2	3.8
3S/1E 10D 4	616	L	Amador	87.5	261.2	66.7	282.6	86.2	263.1	21.4	-19.5	1.9
3S/1E 10D 5	790	D	Amador	112.1	236.5	74.3	275.0	101.1	248.2	38.5	-26.8	11.7
3S/1E 10D 7	215	U	Amador	65.0	296.1	68.1	293.0	69.6	291.5	-3.1	-1.4	-4.6
3S/1E 10D 8	215	L	Amador	76.7	284.3	70.0	291.0	76.5	284.5	6.6	-6.5	0.2
3S/1E 10K 2	591	L	Amador	81.8	276.9	70.8	287.9	82.1	276.6	11.0	-11.3	-0.2
3S/1E 10K 3	530	L	Amador	NM	-	NM	-	NM	-	-	-	-
3S/1E 10N 2	195	U	Amador	65.7	294.6	67.8	292.5	69.8	290.5	-2.1	-2.1	-4.1
3S/1E 10N 3	195	L	Amador	74.1	286.1	69.3	290.9	74.9	285.3	4.7	-5.6	-0.8
3S/1E 11B 1	43	U	Amador	32.7	336.7	29.7	339.6	32.7	336.7	3.0	-2.9	0.0
3S/1E 11C 3	55	U	Amador	31.8	333.0	30.3	334.5	31.8	333.1	1.5	-1.5	0.1
3S/1E 11G 1	120	U	Amador	63.5	308.2	59.8	311.9	59.5	312.1	3.7	0.3	3.9
3S/1E 11G 2	350	L	Amador	91.7	280.0	89.4	282.2	92.8	278.8	2.3	-3.4	-1.1
3S/1E 11G 3	590	L	Amador	108.4	263.3	96.4	275.3	100.4	271.2	12.0	-4.1	7.9
3S/1E 11G 4	790	D	Amador	127.6	244.1	91.8	279.9	95.5	276.2	35.9	-3.7	32.2
3S/1E 11M 2	700	L	Amador	85.9	280.1	75.8	290.2	90.7	275.3	10.1	-15.0	-4.8
3S/1E 11M 3	684	L	Amador	NM	-	NM	-	NM	-	-	-	-
3S/1E 11P 6	400	L	Amador	99.3	277.4	87.8	288.9	104.2	272.5	11.5	-16.4	-4.9
3S/1E 12A 2	69	U	Amador	43.0	358.4	35.2	366.1	36.3	365.0	7.8	-1.1	6.7
3S/1E 12G 1	73	U	Amador	63.5	341.0	59.8	344.7	59.9	344.6	3.7	-0.1	3.6
3S/1E 12H 4	270	L	Amador	122.3	285.5	117.9	289.9	120.3	287.5	4.4	-2.4	2.0
3S/1E 12H 5	400	L	Amador	150.9	256.9	123.4	284.4	127.5	280.3	27.5	-4.0	23.5
3S/1E 12H 6	480	L	Amador	154.6	253.2	123.1	284.7	128.3	279.5	31.5	-5.2	26.3
3S/1E 12H 7	684	D	Amador	182.1	225.6	152.3	255.4	181.1	226.6	29.8	-28.8	1.0
3S/1E 12K 2	300	L	Amador	115.7	290.6	116.3	290.0	121.6	284.7	-0.6	-5.3	-5.9
3S/1E 12K 3	475	L	Amador	140.6	266.3	118.7	288.2	122.9	284.0	21.9	-4.2	17.7
3S/1E 12K 4	475	D	Amador	156.4	250.3	123.7	283.0	142.7	264.0	32.7	-19.0	13.7
3S/1E 13P 1	652	L	Amador	103.2	296.8	101.1	298.9	102.7	297.3	2.1	-1.7	0.4
3S/1E 14B 1	435	L	Amador	116.0	268.2	102.2	282.0	120.9	263.3	13.8	-18.7	-4.9
3S/1E 14D 2	740	L	Amador	100.4	271.4	84.0	287.9	97.0	274.8	16.4	-13.1	3.4
3S/1E 14K 2	508	L	Amador	116.4	275.3	104.3	287.4	115.7	276.1	12.1	-11.4	0.8
3S/1E 15F 3	640	L	Amador	110.4	258.6	158.4	210.6	106.0	263.0	-48.0	52.5	4.5
3S/1E 15J 3	196	L	Amador	85.8	258.8	59.1	285.5	79.6	265.0	26.7	-20.5	6.2
3S/1E 15M 3	600	L	Amador	113.8	249.1	81.2	281.7	103.8	259.1	32.6	-22.6	9.9
3S/1E 16A 2	510	L	AmWest	93.0	265.2	77.3	281.0	NM	-	15.8	-	-
3S/1E 16A 4	603	L	Amador	114.0	245.3	85.3	274.1	102.3	257.1	28.8	-17.0	11.7
3S/1E 16B 1	805	D	Amador	115.2	240.6	80.8	275.1	93.8	262.1	34.4	-13.0	21.4
3S/1E 16C 2	190	L	Amador	74.6	269.8	59.6	284.8	68.7	275.7	15.0	-9.1	5.9
3S/1E 16C 3	305	L	Amador	95.2	249.1	64.6	279.7	82.1	262.2	30.5	-17.5	13.1
3S/1E 16C 4	375	L	Amador	104.3	239.9	66.6	277.5	87.4	256.8	37.7	-20.8	16.9
3S/1E 16E 4	105	U	Amador	59.5	292.2	52.3	299.4	57.8	293.9	7.2	-5.6	1.6
3S/1E 16L 2	151	U	Amador	71.5	284.4	59.9	295.9	NM	-	11.6	-	-
3S/1E 16L 5	685	L	Amador	73.8	284.2	64.3	293.8	NM	-	9.6	-	-
3S/1E 16L 7	647	L	Amador	80.1	274.4	62.9	291.6	NM	-	17.2	-	-
3S/1E 16P 5	75	U	Amador	49.0	305.5	42.2	312.3	49.6	305.0	6.8	-7.3	-0.6
3S/1E 16R 1	239	L	Amador	92.7	269.8	69.4	293.1	83.5	279.0	23.3	-14.1	9.2
3S/1E 17B 4	248	L	Amador	NM	-	44.7	293.0	50.8	286.9	-	-6.1	-
3S/1E 17D 3	108	L	Bernal	39.3	285.8	33.5	291.7	39.4	285.8	5.9	-5.9	-0.1
3S/1E 17D 4	236	L	Bernal	39.4	285.8	33.3	291.8	39.4	285.7	6.1	-6.1	-0.1
3S/1E 17D 5	308	L	Bernal	39.2	286.0	33.2	292.0	39.3	285.8	6.0	-6.1	-0.1
3S/1E 17D 6	408	L	Bernal	37.7	287.4	32.4	292.8	37.6	287.5	5.4	-5.3	0.1
3S/1E 17D 7	684	D	Bernal	22.8	302.3	21.9	303.3	22.2	302.9	0.9	-0.4	0.6
3S/1E 17D10	425	L	Bernal	42.0	286.2	35.7	292.4	41.7	286.4	6.3	-6.0	0.3
3S/1E 17D11	603	L	Bernal	37.1	287.8	31.8	293.0	36.8	288.0	5.3	-5.0	0.3
3S/1E 17D12	315	L	Bernal	43.3	284.6	37.2	290.7	43.3	283.4	6.1	-7.3	-1.2
3S/1E 18A 5	454	L	Bernal	43.9	285.1	37.7	291.4	NM	-	6.3	-	-
3S/1E 18A 6	500	L	Bernal	42.4	284.4	36.3	290.4	42.5	284.3	6.0	-6.1	-0.1
3S/1E 18E 4	83	U	Bernal	32.7	287.6	28.0	292.3	32.4	287.8	4.7	-4.5	0.2
3S/1E 18J 2	71	U	Bernal	34.7	288.1	30.0	292.8	34.3	288.8	4.7	-4.0	0.7

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2010 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2009		Spring 2010		Fall 2010		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 09 to Spring 10	Spring 10 to Fall 10	
2S/1E 32E 1	70	U	Camp	34.6	358.0	33.2	359.4	35.0	357.6	1.4	-1.8	-0.4
2S/1E 32Q 1	45	U	Camp	24.9	342.6	24.5	343.1	24.9	342.7	0.4	-0.4	0.0
3S/1E 18N 1	708	L	Bernal	33.9	285.5	27.5	291.9	32.9	286.5	6.4	-5.4	1.0
3S/1E 19A11	330	L	Bernal	47.1	287.2	40.7	293.6	46.5	287.8	6.4	-5.9	0.6
3S/1E 19C 4	78	U	Bernal	33.6	288.6	28.3	294.0	33.2	289.1	5.4	-4.9	0.5
3S/1E 19K 1	58	U	Bernal	35.0	286.5	29.2	292.4	35.7	285.8	5.8	-6.5	-0.7
3S/1E 20B 2	500	L	Bernal	NM	-	52.2	290.5	NM	-	-	-	-
3S/1E 20C 3	110	L	Bernal	NM	-	47.3	293.0	NM	-	-	-	-
3S/1E 20C 7	153	U	Bernal	50.8	287.9	46.0	292.7	49.7	288.9	4.8	-3.8	1.1
3S/1E 20C 8	315	L	Bernal	53.3	285.4	47.0	291.7	58.0	280.7	6.3	-11.0	-4.7
3S/1E 20C 9	515	L	Bernal	54.4	284.4	47.3	291.5	55.3	283.5	7.0	-8.0	-1.0
3S/1E 20J 4	72	U	Bernal	40.3	291.3	36.0	295.6	39.8	291.9	4.3	-3.7	0.5
3S/1E 20M11	71	U	Bernal	34.6	291.1	29.3	296.4	33.9	291.9	5.3	-4.6	0.8
3S/1E 20Q 2	65	U	Bernal	21.2	304.6	19.0	306.8	21.3	304.5	2.2	-2.3	0.0
3S/1E 22D 2	72	U	Amador	53.1	315.0	51.2	316.9	50.7	317.4	1.9	0.5	2.4
3S/1E 23J 1	120	U	Amador	78.5	349.7	76.8	351.4	80.1	348.1	1.7	-3.3	-1.7
3S/1E 24Q 1	440	L	Amador	163.8	263.7	43.5	384.0	NM	-	120.3	-	-
3S/1E 25C 3	146	U	Amador	84.1	370.0	82.8	371.4	86.2	368.0	1.3	-3.4	-2.0
3S/1E 29M 4	57	U	Castle	24.5	286.5	18.6	292.3	23.4	287.6	5.9	-4.7	1.1
3S/1E 29P 2	42	U	Bernal	28.4	274.5	25.7	277.2	27.9	274.9	2.7	-2.2	0.5
3S/1W 1B 9	162	L	Dublin	14.3	320.3	8.9	324.7	12.4	321.2	4.4	-3.5	0.9
3S/1W 1B10	414	L	Dublin	24.4	310.2	19.1	314.5	20.0	313.6	4.3	-0.9	3.5
3S/1W 1B11	560	L	Dublin	48.3	285.9	37.6	296.2	42.9	290.8	10.3	-5.4	4.9
3S/1W 2A 2	47	U	Dublin	26.9	342.5	21.2	348.2	25.6	343.8	5.7	-4.4	1.2
3S/1W 12B 2	40	U	Dublin	21.6	321.3	19.4	323.5	21.1	321.8	2.2	-1.7	0.5
3S/1W 12J 1	62	U	Dublin	18.6	310.7	15.1	314.2	17.6	311.7	3.5	-2.5	1.0
3S/1W 13J 1	48	U	Castle	28.8	315.2	21.1	322.8	29.5	314.4	7.6	-8.4	-0.8
3S/2E 1F 2	69	U	Spring	21.4	551.6	20.9	552.1	21.6	551.4	0.5	-0.7	-0.2
3S/2E 2B 2	46	U	Spring	9.6	529.8	8.7	530.8	9.4	530.1	1.0	-0.7	0.2
3S/2E 3A 1	54	U	Spring	4.6	513.1	3.5	514.1	4.7	512.9	1.0	-1.2	-0.2
3S/2E 3K 3	60	U	Mocho I	13.2	509.7	12.9	509.9	13.4	509.4	0.2	-0.5	-0.3
3S/2E 5N 1	210	L	Mocho II	46.0	394.0	32.4	407.7	38.3	401.8	13.6	-5.9	7.7
3S/2E 7C 2	49	U	Mocho II	31.0	389.9	25.0	395.8	27.0	393.9	6.0	-1.9	4.0
3S/2E 7H 2	54	U	Mocho II	37.5	405.4	27.3	415.6	30.4	412.5	10.2	-3.1	7.1
3S/2E 7N 1	130	U	Amador	72.8	348.3	83.8	337.3	74.3	346.8	-11.0	9.5	-1.5
3S/2E 7P 3	510	L	Amador	220.0	211.5	NM	-	181.0	250.5	-	-	39.0
3S/2E 7R 3	583	L	Mocho II	221.0	225.0	NM	-	65.0	381.0	-	-	156.0
3S/2E 8F 1	576	L	Mocho II	98.0	358.2	NM	-	51.0	405.2	-	-	47.0
3S/2E 8G 1	465	L	Mocho II	69.0	396.1	50.0	415.1	54.0	411.1	19.0	-4.0	15.0
3S/2E 8H 2	46	U	Mocho II	39.3	430.3	35.2	434.5	41.1	428.5	4.1	-6.0	-1.9
3S/2E 8H 3	195	L	Mocho II	85.7	391.6	58.0	419.3	69.6	407.7	27.7	-11.6	16.1
3S/2E 8H 4	385	L	Mocho II	172.8	304.1	109.5	367.5	146.1	330.9	63.4	-36.6	26.7
3S/2E 8K 2	74	U	Mocho II	48.1	416.3	32.6	432.2	39.0	425.8	15.8	-6.4	9.5
3S/2E 8P 1	273	L	Mocho II	81.0	387.2	41.0	427.2	54.0	414.2	40.0	-13.0	27.0
3S/2E 9L 1	516	L	Mocho II	96.0	403.4	69.0	430.4	78.0	421.4	27.0	-9.0	18.0
3S/2E 9P 1	515	L	Mocho II	128.0	373.3	81.0	420.3	93.0	408.3	47.0	-12.0	35.0
3S/2E 9Q 1	572	L	Mocho II	NM	-	58.0	460.2	75.0	443.2	-	-17.0	-
3S/2E 9Q 4	80	U	Mocho II	39.1	465.3	19.8	484.6	27.8	476.6	19.3	-8.1	11.3
3S/2E 10F 3	45	U	Mocho I	14.0	520.9	12.7	522.1	13.5	521.3	1.3	-0.8	0.4
3S/2E 10Q 1	44	U	Mocho II	26.9	528.5	23.3	532.1	25.4	530.0	3.6	-2.1	1.5
3S/2E 11C 1	66	U	Mocho I	25.6	531.5	25.0	532.2	26.2	531.0	0.6	-1.2	-0.5
3S/2E 14B 1	300	L	Mocho I	61.5	531.9	61.0	532.4	62.1	531.3	0.5	-1.1	-0.6
3S/2E 15E 2	192	L	Mocho II	50.7	499.0	36.3	513.4	38.6	511.1	14.4	-2.3	12.2
3S/2E 15Q 6	301	L	Mocho II	69.3	508.0	58.2	519.0	65.6	511.7	11.0	-7.3	3.7
3S/2E 15R17	63	U	Mocho II	12.4	580.0	10.8	581.7	12.1	580.3	1.6	-1.4	0.3
3S/2E 15R18	138	L	Mocho II	16.3	576.2	13.4	579.1	14.7	577.8	2.9	-1.3	1.6
3S/2E 16A 3	240	L	Mocho II	48.9	478.1	33.6	493.4	39.4	487.7	15.3	-5.7	9.6
3S/2E 16B 1	410	L	Mocho II	116.0	404.2	65.0	455.2	85.0	435.2	51.0	-20.0	31.0
3S/2E 16C 1	584	L	Mocho II	168.0	343.0	88.0	423.0	121.0	390.0	80.0	-33.0	47.0
3S/2E 16E 4	45	U	Mocho II	18.2	488.1	16.0	490.3	16.8	489.5	2.2	-0.9	1.4
3S/2E 17E 2	94	U	Mocho II	18.3	449.4	16.6	451.1	16.7	451.0	1.7	-0.1	1.6
3S/2E 18B 1	497	L	Amador	168.0	270.6	NM	-	166.0	272.6	-	-	2.0
3S/2E 18E 1	134	U	Amador	51.6	372.3	72.2	351.7	56.1	367.8	-20.6	16.1	-4.5
3S/2E 19D 7	180	L	Amador	86.9	328.2	78.8	336.3	81.8	333.3	8.1	-3.0	5.1
3S/2E 19D 8	260	L	Amador	88.0	327.0	79.5	335.5	82.6	332.4	8.5	-3.1	5.4
3S/2E 19D 9	390	L	Amador	158.3	256.7	126.3	288.7	NM	-	32.0	-	-
3S/2E 19D10	470	L	Amador	145.5	269.4	117.9	297.0	148.7	266.2	27.6	-30.8	-3.2
3S/2E 20M 1	184	L	Amador	64.0	414.8	50.9	427.9	60.5	418.3	13.1	-9.6	3.5
3S/2E 22B 1	32	U	Mocho II	12.9	573.0	14.7	571.2	14.8	571.1	-1.8	-0.1	-1.9
3S/2E 23E 1	40	U	Mocho II	17.0	596.3	16.7	596.6	17.0	596.4	0.3	-0.3	0.0
3S/2E 23E 2	110	L	Mocho II	15.3	597.9	15.0	598.3	15.0	598.3	0.3	0.0	0.3
3S/2E 24A 1	46	U	Mocho I	27.4	690.3	27.8	689.9	26.2	691.5	-0.4	1.6	1.2

TABLE 3.2-3

**Groundwater Monitoring Program
Semi-Annual Groundwater Levels in Feet
Spring and Fall 2010 Measurements**

Well Number	Well Depth	Aquifer	Sub-Basin	Fall 2009		Spring 2010		Fall 2010		Change in Elevation		
				Depth to Water	GW Elev	Depth to Water	GW Elev	Depth to Water	GW Elev	Seasonal		Annual
										Fall 09 to Spring 10	Spring 10 to Fall 10	
2S/1E 32E 1	70	U	Camp	34.6	358.0	33.2	359.4	35.0	357.6	1.4	-1.8	-0.4
2S/1E 32Q 1	45	U	Camp	24.9	342.6	24.5	343.1	24.9	342.7	0.4	-0.4	0.0
3S/2E 26J 2	44	U	Mocho II	10.2	679.8	6.1	683.8	11.3	678.6	4.1	-5.2	-1.2
3S/2E 29F 4	36	U	Amador	8.6	448.9	8.4	449.1	8.6	448.9	0.2	-0.2	0.0
3S/2E 30D 2	44	U	Amador	20.9	410.7	21.0	410.7	21.0	410.6	0.0	0.0	0.0
3S/2E 30G 1	390	L	Amador	49.6	404.1	NM	-	NM	-	-	-	-
3S/2E 33G 1	17	U	Amador	8.8	502.7	8.8	502.8	9.0	502.6	0.1	-0.2	-0.1
3S/3E 7M 2	199	L	Spring	44.5	584.2	44.8	583.8	45.2	583.4	-0.3	-0.4	-0.8
MA-C 1	0	U	Amador	0.0	375.8	0.0	376.8	0.0	376.3	1.0	-0.5	0.5
MA-K 15	0	U	Amador	0.0	329.9	0.0	330.9	0.0	330.4	1.1	-0.5	0.5
MA-K 18	0	U	Amador	0.0	346.0	0.0	346.1	0.0	346.1	0.1	-0.1	0.0
MA-K 28	0	U	Amador	0.0	293.2	0.0	290.0	0.0	288.4	-3.2	-1.6	-4.8
MA-K 30	0	U	Amador	NM	-	0.0	328.5	0.0	327.5	-	-1.0	-
MA-K 37	0	U	Amador	0.0	293.2	0.0	290.0	0.0	288.4	-3.2	-1.6	-4.8
MA-P 10	0	U	Amador	0.0	372.8	0.0	372.9	0.0	373.1	0.1	0.2	0.3
MA-P 11	0	U	Amador	0.0	349.7	0.0	349.8	0.0	349.9	0.1	0.1	0.2
MA-P 12	0	U	Amador	0.0	346.0	0.0	346.1	0.0	346.3	0.1	0.2	0.3
MA-P 27	0	U	Amador	0.0	309.4	0.0	307.4	0.0	314.4	-2.0	7.0	5.0
MA-P 28	0	U	Amador	0.0	404.4	0.0	402.7	0.0	398.2	-1.7	-4.5	-6.2
MA-P 40	0	U	Amador	0.0	323.4	0.0	287.4	0.0	334.4	-36.0	47.0	11.0
MA-P 41	0	U	Amador	0.0	383.8	0.0	398.7	0.0	402.8	14.9	4.1	19.0
MA-P 42	0	U	Amador	0.0	277.3	0.0	283.1	0.0	283.3	5.8	0.2	6.0
MA-P 44	0	U	Amador	0.0	323.8	0.0	323.3	0.0	323.2	-0.5	-0.1	-0.6
MA-R 3	0	U	Amador	0.0	329.0	0.0	330.0	0.0	331.0	1.0	1.0	2.0
MA-R 4	0	U	Amador	0.0	306.7	0.0	305.8	0.0	309.8	-0.9	4.0	3.1
MA-R 8	0	U	Amador	0.0	354.0	NM	-	0.0	354.5	-	-	0.5
MA-R 22	0	U	Amador	0.0	354.0	0.0	356.0	0.0	354.5	2.0	-1.5	0.5
MA-R 23	0	U	Amador	0.0	353.0	0.0	356.6	0.0	356.9	3.6	0.3	3.9
MA-R 28	0	U	Amador	0.0	318.4	0.0	317.4	0.0	321.9	-1.0	4.5	3.5

U Upper
L Lower
NM Not measured
DRY Well was dry
OBS Well was obstructed
- Not applicable
Key Well

**TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2010 Water Year**

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS mg/L	Hard mg/L
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn		
2S/1E 32N 1	14-Apr-10	18.2	1110	7.4	93	17	107	1.5	273	24	195	11.82	25.5	0.43	0.0014	<0.05	<0.01	610	302
2S/1E 32Q 1	13-Apr-10	18.4	1563	7.3	115	43	176	1.7	526	58	194	18.02	28.0	0.69	<0.002	<0.1	<0.02	894	463
2S/1E 33L 1	13-Apr-10	18.0	1271	7.4	105	20	157	1.8	467	43	147	18.78	28.0	0.46	<0.002	<0.1	<0.02	751	346
2S/1E 33P 2	13-Apr-10	17.1	2083	7.2	162	65	226	2.2	722	62	305	24.71	24.0	0.82	<0.002	<0.1	<0.02	1227	672
2S/1E 33R 1	16-Feb-10	18.8	829	7.6	76	14	79	1.1	265	18	121	20.37	26.7	0.14	0.0021	<0.05	<0.01	488	249
2S/1W 26C 2	10-Feb-10	18.0	871	6.9	126	18	39	1.4	484	25	28	25.46	32.3	0.14	0.0029	0.26	0.83	534	392
2S/1W 36E 3	10-Feb-10	16.9	967	7.0	128	20	54	0.6	383	90	74	26.70	37.9	0.15	0.004	<0.05	0.33	620	400
2S/1W 36F 1	10-Feb-10	17.3	750	7.3	62	20	80	1.0	419	16	36	<0.44	21.3	0.27	0.0083	0.092	0.22	443	235
2S/1W 36F 2	16-Feb-10	18.7	845	8.3	38	11	149	4.6	391	<1.0	98	<0.44	22.3	0.69	0.134	0.19	0.17	523	139
2S/2E 27P 2	12-Apr-10	17.3	4765	7.7	84	42	924	1.8	215	<1.0	1500	1.55	26.1	30	<0.005	0.89	0.053	2686	381
2S/2E 28D 2	12-Apr-10	16.9	1092	7.2	55	24	128	1.9	180	21	174	119.13	26.7	0.51	0.0039	0.74	0.012	639	237
2S/2E 28J 2	08-Jul-10		989	8.4	6	3	210	<0.50	378	58	84	<0.44	18.9	1.5	<0.001	<0.05	0.051	575	26
2S/2E 28Q 1	12-Apr-10	16.4	1107	7.9	44	36	147	1.9	280	71	177	1.77	43.2	0.44	0.0059	14.	0.56	662	260
2S/2E 32K 2	14-Apr-10	18.6	1084	7.7	49	31	138	1.7	342	56	133	10.85	38.7	0.52	0.0055	<0.05	<0.01	628	249
2S/2E 34E 1	14-Apr-10	19.0	1370	8.1	19	11	308	<1.0	376	80	212	<0.44	26.3	2.6	0.025	1.4	0.16	846	92
2S/2E 34Q 2	12-Apr-10	18.6	1825	7.6	78	59	251	1.3	280	140	386	4.56	30.2	3.6	0.0037	0.36	0.063	1089	436
3S/1E 1F 2	21-Dec-09	15.6	1472	7.0	137	37	137	0.6	544	29	164	70.86	47.5	0.26	0.005	<0.05	<0.01	891	494
3S/1E 1H 3	09-Nov-09		1707		62	34	260	3.3		77	262		33	1.09				1011	
3S/1E 1H 3	11-Feb-10		1803		66	38	240	3.7		78	288		32.75	1.34				1059	
3S/1E 1H 3	05-Apr-10		1786		68	40	240	3.6		78	320		33	1.26					
3S/1E 1H 3	10-Aug-10		1743		62	37	228	3		78	261		32	1.23				1025	
3S/1E 1L 1	14-Jan-10	17.4	2573	7.3	140	60	322	1.6	553	74	462	74.40	31.5	6.0	0.0035	0.18	<0.01	1439	596
3S/1E 1P 2	09-Nov-09		1381		59	37	170	3.4		81	289		24	2.73				801	
3S/1E 1P 2	10-Feb-10	17.5	1358	7.7	66	37	173	1.7	471	98	198	6.47	20.9	2.9	0.0054	<0.05	0.012	835	316
3S/1E 1P 2	11-Feb-10		1351		61	39	150	3.6		80	269		24	2.5				780	
3S/1E 1P 2	05-Apr-10		1349		61	41	160	4.2		81	236		26	2.4					
3S/1E 1P 2	10-Aug-10		1359		63	42	156	4.4		80	245		24	3.05				792	
3S/1E 1R 2	09-Nov-09		685		40	42	45	2.7		41	109		19	0.64				391	
3S/1E 1R 2	11-Feb-10		1038		59	64	59	3.4		49	163		25	0.83				606	
3S/1E 1R 2	05-Apr-10		1156		67	73	64	3.6		55	144		30	1.1					
3S/1E 1R 2	10-Aug-10		1095		63	70	63	3.5		53	129		29	0.95				649	
3S/1E 2J 2	21-Jan-10	14.6	3140	7.2	153	73	419	1.5	568	171	621	18.78	25.5	5.0	0.0039	<0.05	<0.01	1763	682
3S/1E 2J 3	14-Jan-10	19.9	1416	7.5	62	45	173	2.3	456	19	202	25.15	28.5	0.67	0.0038	<0.05	<0.01	783	340
3S/1E 2K 2	14-Jan-10	19.2	799	8.1	14	10	168	1.0	477	26	11	10.32	21.0	1.2	0.0068	0.13	<0.01	502	77
3S/1E 2M 3	14-Jan-10	17.4	2120	7.2	85	40	363	1.9	802	80	271	58.01	27.2	2.8	0.004	<0.05	<0.01	1322	376
3S/1E 2N 2	14-Jan-10	16.7	2008	7.6	85	43	297	1.3	555	124	305	23.60	19.8	3.0	0.0017	0.24	0.039	1174	392
3S/1E 2N 6	14-Jan-10	16.9	1494	7.4	68	39	200	1.1	447	87	207	0.93	18.7	3.2	0.0034	<0.05	0.039	843	329
3S/1E 2P 3	14-Jan-10	18.8	750	7.9	48	35	56	1.9	283	38	66	22.01	25.9	0.46	0.002	0.09	<0.01	434	265
3S/1E 2Q 1	28-Apr-10	14.1	2083	7.4	91	55	297	1.7	508	155	331	22.41	20.9	3.7	0.0034	<0.05	<0.01	1225	456
3S/1E 2R 1	09-Nov-09		1443		68	47	170	2.7		63	241		28	2.6				833	
3S/1E 2R 1	11-Feb-10		1438		70	50	160	3		61	203		28	2.35				833	
3S/1E 2R 1	05-Apr-10		1446		70	52	160	2.6		60	228		27	2.63					
3S/1E 2R 1	10-Aug-10		1458		71	53	156	2.6		64	220		27	2.7				848	
3S/1E 3G 2	22-Dec-09	16.2	1329	7.4	52	23	211	1.5	587	22	128	3.54	19.2	1.3	0.0044	0.63	0.32	750	225
3S/1E 4A 1	09-Feb-10	17.4	1099	7.1	92	19	110	0.9	353	40	163	2.48	22.3	0.45	0.0018	<0.05	0.017	624	307
3S/1E 4J 5	09-Feb-10	16.6	5163	7.4	77	103	967	1.1	962	339	1127	64.66	17.8	16	0.0063	0.21	0.34	3172	618
3S/1E 4J 6	09-Feb-10	16.6	1940	7.2	128	42	228	2.1	450	119	396	9.03	24.8	2.1	0.0015	0.1	0.51	1171	494
3S/1E 4Q 2	09-Feb-10	17.3	2033	7.4	90	64	244	1.2	533	91	373	12.40	22.3	3.5	0.0032	<0.05	0.072	1161	489
3S/1E 5K 6	21-Jan-10	16.6	2255	7.4	157	55	258	2.2	514	245	309	37.86	18.9	1.7	0.002	<0.05	0.74	1337	620
3S/1E 5K 7	21-Jan-10	15.7	1022	8.5	40	22	139	3.4	191	123	142	5.05	24.2	0.85	0.013	<0.05	<0.01	598	190
3S/1E 5L 3	09-Feb-10	19.2	1865	7.5	105	57	246	1.0	540	264	205	1.73	20.7	0.65	<0.005	0.57	0.66	1168	495

**TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2010 Water Year**

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS mg/L	Hard mg/L
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn		
3S/1E 5P 6	21-Jan-10	16.3	3241	7.3	207	121	350	1.6	435	543	504	14.79	25.5	1.4	0.0021	<0.05	0.36	1982	1017
3S/1E 6F 3	10-Feb-10	19.5	4720	7.1	292	125	545	2.2	604	683	892	<0.44	22.3	3.4	<0.005	<0.25	5.3	2859	1243
3S/1E 6M 2	15-Dec-09	16.47	8379	6.87							677				<0.0050			6768	
3S/1E 6N 2	15-Dec-09	18.39	25340	6.46							12000				0.016			21600	
3S/1E 6N 2	15-Dec-09		26340	7.0							12000				0.016			21600	
3S/1E 6N 3	14-Dec-09	18.62	9761	6.87							4053				0.0064			7272	
3S/1E 6N 3	14-Dec-09		9905	7.4							4053				0.0064			7272	
3S/1E 6N 4	14-Dec-09	18.77	4883	6.79							344				0.013			3928	
3S/1E 6N 5	14-Dec-09	18.59	36560	6.69							15000				<0.0050			28140	
3S/1E 6N 6	14-Dec-09	18.48	23000	6.61							8870				0.0064			18850	
3S/1E 6N 6	14-Dec-09		23780	7.1							8870				0.0064			18850	
3S/1E 7B 2	16-Feb-10	17.3	764	8.7	12	8	141	1.3	247	34	92	<0.44	11.7	1.0	0.0069	<0.05	0.044	433	65
3S/1E 7B12	16-Feb-10	17.2	12250	7.3	400	315	2018	2.6	332	1620	3756	<0.44	21.8	<1.0	<0.01	<0.5	<0.1	8297	2295
3S/1E 7D 1	14-Dec-09		5669	7.4	574	223	260	2.6	361	121	1833	<0.44	26.3	0.40	0.014	<0.25	7.4	3218	2350
3S/1E 7D 1	14-Dec-09	18.75	5627	6.73	574	223	260	2.6	361	121	1833	<0.44	26.3	0.40	0.014	<0.25	7.4	3218	2350
3S/1E 7D 2	09-Dec-09		29740	7.5	525	1893	5600	4.3	1277	10094	5945	<0.44	15.0	15	<0.05	<2.5	9.5	24708	9102
3S/1E 7D 2	09-Dec-09	17.78	28460	6.5	525	1893	5600	4.3	1277	10094	5945	<0.44	15.0	15	<0.05	<2.5	9.5	24708	9102
3S/1E 7D 3	09-Dec-09	15.1	16080	6.52	952	659	1750	5.2	371	567	5810	<0.44	22.0	1.6	0.026	<2.5	23.	12640	5092
3S/1E 7D 4	09-Dec-09		30620	7.3	698	1690	5300	5.1	858	7167	7972	<0.44	13.8	12	<0.05	<2.5	13.	23270	8698
3S/1E 7D 4	09-Dec-09	17.19	28630	6.46	698	1690	5300	5.1	858	7167	7972	<0.44	13.8	12	<0.05	<2.5	13.	23270	8698
3S/1E 7G 7	10-Feb-10	18.1	17680	7.1	400	461	3250	7.6	469	2525	5023	<0.44	18.9	6.4	<0.1	<5.	11.	11917	2899
3S/1E 7J 5	13-Apr-10	18.6	2487	7.2	125	101	372	2.4	905	380	172	<0.44	25.0	4.8	<0.005	<0.25	0.3	1624	727
3S/1E 7M 2	14-Apr-10	18.7	851	8.1	76	18	91	1.5	391	49	57	<0.44	12.5	0.24	0.0022	0.16	0.13	502	266
3S/1E 7R 8	13-Apr-10	18.6	2441	7.2	195	156	207	2.6	934	423	151	<0.44	31.9	2.7	<0.005	0.37	0.087	1627	1130
3S/1E 8B 1	03-Jun-10	22.1	1739	7.8	80	62	200	1.6	457	179	232	1.42	15.6	2.1	0.0024	0.18	0.072	999	453
3S/1E 8G 4	09-Feb-10	18.1	3390	7.2	152	133	400	2.5	775	693	391	11.16	29.1	5.4	0.002	0.36	0.06	2194	928
3S/1E 8H 9	19-Jan-10	16.1	940	7.6	55	37	90	1.9	344	52	90	21.97	25.5	0.82	0.0021	<0.05	<0.01	544	290
3S/1E 8H10	18-Nov-09	19.0	873	7.7	41	29	104	2.0	307	60	95	9.52	26.3	0.74	0.0017	<0.05	<0.01	519	224
3S/1E 8H11	18-Nov-09	18.7	861	7.5	61	44	58	2.0	355	62	74	14.08	28.0	0.54	0.0015	<0.05	<0.01	519	335
3S/1E 8H13	18-Nov-09	18.2	1364	7.5	103	75	82	2.8	506	93	157	18.47	26.1	0.70	0.0013	0.21	<0.01	808	565
3S/1E 8H18R	28-Dec-09	20.3	1187	7.5	90	55	78	2.7	440	90	125	17.18	26.5	0.62	0.0017	<0.01	<0.01	702	453
3S/1E 8H18R	15-Mar-10	20.7	1268	7.5	104	53	85	2.6	457	97	133	17.94	25.5	0.82	0.0016	<0.005	<0.01	744	479
3S/1E 8H18R	14-Sep-10	20.4	1270	7.5	101	61	86	2.8	466	94	138	18.51	27.6	0.74	0.0016	<0.005	<0.01	760	505
3S/1E 8K 1	31-Mar-10	17.3	1993	7.2	174	129	105	2.9	733	262	186	22.10	27.6	1.0	0.0017	<0.05	<0.01	1270	966
3S/1E 8N 1	31-Mar-10	16.8	1982	7.1	149	109	172	3.0	764	248	161	12.31	28.0	1.9	0.0013	<0.05	<0.01	1259	821
3S/1E 9B 1	07-Dec-09	19.5	689	7.7	48	36	41	1.7	287	34	52	19.40	27.0	0.31	0.0014	<0.01	<0.01	402	268
3S/1E 9B 1	28-Dec-09	19.5	665	7.7	49	32	39	1.7	284	34	48	17.36	26.5	0.32	0.0016	<0.01	<0.01	389	256
3S/1E 9B 1	15-Mar-10	20.6	637	7.7	43	31	40	1.7	270	33	43	16.52	24.6	0.41	0.0015	<0.005	<0.01	367	234
3S/1E 9G 1	09-Feb-10	18.1	1001	7.2	54	46	87	1.8	311	67	139	1.73	24.0	1.1	<0.001	0.37	0.026	574	324
3S/1E 9J 7	20-Jan-10	15.7	980	7.5	68	41	72	2.0	313	55	124	0.44	17.4	0.82	<0.001	<0.05	<0.01	535	338
3S/1E 9J 8	20-Jan-10	15.7	737	7.5	78	30	30	1.7	293	40	61	11.38	19.2	0.33	<0.001	<0.05	<0.01	416	319
3S/1E 9J 9	20-Jan-10	15.6	659	7.5	52	41	22	1.7	274	34	49	12.22	26.1	0.24	<0.001	<0.05	<0.01	374	298
3S/1E 9M 2R	10-Dec-09	17.2	1145	7.6	71	58	83	2.1	418	71	121	25.42	26.7	1.0	0.0012	<0.01	<0.01	665	417
3S/1E 9M 2R	29-Dec-09	17.5	1063	7.3	72	57	72	2.0	404	67	110	22.72	25.5	0.85	0.001	<0.01	<0.01	628	416
3S/1E 9M 2R	01-Feb-10		1065	7.4	72	57	63	1.8	397	59	110	22.14	24.8	0.90	0.0014	<0.01	<0.01	606	414
3S/1E 9M 2R	15-Mar-10	17.6	1066	7.5	73	59	68	1.9	399	66	113	23.91	24.4	0.97	0.0012	<0.005	<0.01	627	424
3S/1E 9M 2R	16-Sep-10	18.0	1088	7.0	78	60	77	2.0	414	64	123	21.61	25.5	0.90	0.0012	<0.005	<0.01	655	440
3S/1E 9M 3R	07-Dec-09	15.7	1001	7.5	91	49	48	1.9	371	63	101	17.71	22.5	0.46	<0.001	<0.01	<0.01	578	428
3S/1E 9M 3R	29-Dec-09	16.5	993	7.3	88	45	45	1.8	356	62	94	15.15	21.1	0.48	<0.001	<0.01	<0.01	548	404
3S/1E 9M 3R	19-Jan-10		1077	7.5	102	53	50	2.0	405	64	114	17.80	21.6	0.53	<0.001	<0.01	<0.01	625	474
3S/1E 9M 3R	01-Feb-10		1041	7.3	100	55	44	1.8	412	64	113	17.71	21.3	0.56	0.001	<0.01	<0.01	620	477

**TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2010 Water Year**

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS mg/L	Hard mg/L
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn		
3S/1E 9M 3R	21-Apr-10	16.9	1058	7.3	98	52	49	1.9	402	62	114	20.15	21.4	0.54	<0.001	<0.005	<0.01	617	460
3S/1E 9M 3R	06-Jul-10		1116	7.2	104	54	53	2.0	415	72	121	21.48	22.3	0.58	0.0012	<0.005	<0.01	655	485
3S/1E 9M 3R	09-Aug-10		1116	7.4	98	58	60	2.0	426	65	120	20.55	23.1	0.59	<0.001	<0.005	<0.01	657	485
3S/1E 9M 4R	28-Dec-09	17.7	1397	7.6	102	71	90	2.5	500	93	158	20.73	27.2	1.0	0.0013	<0.01	<0.01	812	548
3S/1E 9M 4R	17-Mar-10	18.9	1411	7.6	102	73	96	2.5	506	118	160	21.04	25.7	1.2	0.0014	<0.005	<0.01	849	555
3S/1E 9M 4R	07-Jun-10	19.0	1297	7.6	98	68	83	2.4	481	92	148	19.71	26.3	0.96	0.0018	<0.005	<0.01	776	522
3S/1E 9M 4R	14-Sep-10	18.6	1532	7.4	111	82	120	2.8	554	137	193	22.14	28.7	1.41	0.0017	<0.005	<0.01	971	613
3S/1E 9P 5	19-Jan-10	15.7	1044	7.1	91	42	57	2.3	316	63	130	4.21	18.7	0.78	<0.001	<0.05	<0.01	564	401
3S/1E 9P 9	19-Jan-10	15.7	1138	7.2	83	48	81	2.2	378	77	127	8.55	21.4	1.0	<0.001	<0.05	<0.01	635	406
3S/1E 9P10	19-Jan-10	15.6	765	7.3	68	31	38	1.5	259	50	77	8.33	19.4	0.41	<0.001	<0.05	<0.01	421	298
3S/1E 9P11	19-Jan-10	16.3	488	7.9	28	12	59	1.6	225	35	17	<0.44	18.3	0.49	0.0053	<0.05	<0.01	283	120
3S/1E 10A 2	28-Apr-10	17.3	2030	7.2	90	83	272	2.5	610	132	287	32.90	28.7	3.2	<0.002	0.43	<0.02	1229	566
3S/1E 10B 8	30-Nov-09	16.6	1502	7.2	90	66	140	1.9	540	85	172	41.41	28.9	2.2	0.0017	<0.05	<0.01	892	494
3S/1E 10B 9	30-Nov-09	16.9	1022	7.6	69	56	66	1.9	363	59	115	32.11	25.7	0.69	0.0017	<0.05	<0.01	605	401
3S/1E 10B10	30-Nov-09	17.0	808	7.3	48	40	59	1.5	303	45	77	15.41	26.1	0.49	0.0019	<0.05	<0.01	462	284
3S/1E 10B11	30-Nov-09	17.4	843	7.4	58	44	52	1.8	310	47	81	26.57	26.7	0.56	0.0018	<0.05	<0.01	490	324
3S/1E 10D 2	30-Nov-09	17.3	1315	7.5	72	59	125	1.8	466	71	148	37.82	28.0	1.5	0.0031	0.13	0.033	773	422
3S/1E 10D 3	30-Nov-09	17.2	971	7.6	64	52	60	1.8	348	51	102	31.66	25.7	0.52	0.0016	<0.05	<0.01	561	372
3S/1E 10D 4	30-Nov-09	17.6	755	7.5	30	20	103	1.1	275	50	78	5.71	21.8	0.66	0.0071	<0.05	0.024	446	158
3S/1E 10D 5	30-Nov-09	17.8	632	7.7	44	27	51	1.8	279	35	39	13.33	25.0	0.26	0.0023	<0.05	<0.01	375	222
3S/1E 10K 2	27-Apr-10	17.3	681	7.3	58	34	30	1.5	258	38	67	7.88	21.0	0.31	<0.001	<0.05	<0.01	385	286
3S/1E 10K 3	22-Apr-10		835	7.4	63	52	33	1.6	336	40	71	21.52	22.7	0.33	<0.001	0.026	<0.01	471	372
3S/1E 10K 3	13-May-10		851	7.6	65	47	34	1.6	332	37	72	19.93	22.7	0.32	<0.001	0.009	<0.01	464	356
3S/1E 10K 3	07-Jun-10	17.7	813	7.6	61	49	31	1.6	327	38	69	19.75	23.8	0.30	0.001	<0.005	<0.01	455	356
3S/1E 10K 3	06-Jul-10		800	7.3	61	49	33	1.6	334	41	72	20.95	23.5	0.31	0.001	0.0082	<0.01	467	353
3S/1E 10K 3	15-Sep-10	17.4	820	7.5	63	54	36	1.7	347	41	71	21.35	24.2	0.36	<0.001	0.017	<0.01	484	379
3S/1E 11B 1	09-Nov-09		1791		64	55	240	2.8		99	299		30	3.6				1067	
3S/1E 11B 1	11-Feb-10		1778		67	58	230	2.9		100	254		30	3.65				1067	
3S/1E 11B 1	05-Apr-10		1725		62	55	210	2.9		94	231		32	3.3					
3S/1E 11B 1	10-Aug-10		1236		68	94	59	4.1		69	116		36	1.15				726	
3S/1E 11C 3	28-Apr-10	16.0	1756	7.3	92	55	257	1.4	583	116	216	31.89	22.0	3.3	0.003	0.26	<0.02	1079	458
3S/1E 11G 1	01-Jun-10	19.1	1291	7.2	74	82	77	2.4	486	64	124	42.60	33.6	0.92	0.0017	<0.05	<0.01	739	523
3S/1E 11G 2	01-Jun-10	18.8	1077	7.4	70	68	47	1.9	381	58	115	31.35	23.5	0.65	0.001	<0.05	<0.01	603	454
3S/1E 11G 3	01-Jun-10	19.0	653	7.4	47	42	24	1.6	274	33	46	14.70	26.3	0.24	<0.001	<0.05	<0.01	370	290
3S/1E 11G 4	01-Jun-10	18.9	1046	7.3	68	66	46	1.9	377	54	106	27.63	24.0	0.62	<0.001	<0.05	<0.01	580	442
3S/1E 11M 2	27-Apr-10	17.5	824	7.2	57	55	32	1.6	354	41	66	19.35	24.2	0.32	<0.001	<0.05	<0.01	471	370
3S/1E 11M 3	22-Apr-10		707	7.4	48	43	27	1.4	270	35	59	14.13	23.1	0.27	<0.001	0.044	<0.01	384	296
3S/1E 11M 3	13-May-10		690	7.6	49	40	27	1.4	264	32	57	12.05	22.9	0.25	<0.001	0.0084	<0.01	372	287
3S/1E 11M 3	07-Jun-10	18.3	613	7.6	47	40	24	1.4	260	31	53	12.31	22.9	0.23	<0.001	<0.005	<0.01	361	281
3S/1E 11M 3	07-Jun-10	20.4	1052	7.6	47	40	24	1.4	260	31	53	12.31	22.9	0.23	<0.001	<0.005	<0.01	361	281
3S/1E 11M 3	06-Jul-10		654	7.3	47	41	25	1.4	272	35	55	14.44	24.0	0.24	<0.001	<0.005	<0.01	377	284
3S/1E 11M 3	15-Sep-10	17.8	687	7.4	48	46	29	1.5	292	36	60	13.46	24.2	0.27	<0.001	0.0072	<0.01	403	310
3S/1E 11P 6	28-Apr-10	17.5	644	7.3	61	25	33	1.5	228	38	70	5.49	17.2	0.31	<0.001	<0.05	<0.01	364	256
3S/1E 12A 2	09-Nov-09		1172		63	80	51	3.8		61	140		35	0.59				698	
3S/1E 12A 2	11-Feb-10		1188		65	86	53	4		63	144		36	0.53				688	
3S/1E 12A 2	05-Apr-10		1242		63	86	52	3.6		63	122		37	0.62					
3S/1E 12A 2	10-Aug-10		1747		66	63	228	5.6		96	148		30	4.95				1063	
3S/1E 12D 2	09-Nov-09		1642		86	79	180	8.3		84	180		38	2.2				1009	
3S/1E 12D 2	11-Feb-10		1622		84	79	170	7.2		83	165		41	2.8				996	
3S/1E 12D 2	05-Apr-10		1623		88	92	170	18		84	155		89	3.13					
3S/1E 12D 2	10-Aug-10		1675		94	110	162	16		84	229		35	3.2				1010	

**TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2010 Water Year**

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS mg/L	Hard mg/L	
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn			
3S/1E 12G 1	09-Nov-09		1126		60	77	63	7.3		55	137		35	0.74					663	
3S/1E 12G 1	11-Feb-10		1112		57	67	78	4.4		57	161		36	0.89					673	
3S/1E 12G 1	05-Apr-10		1037		57	82	60	9		53	89		92	0.27						
3S/1E 12G 1	10-Aug-10		1047		55	72	57	4.3		51	120		36	0.73					622	
3S/1E 12H 4	21-Dec-09	18.5	787	7.4	51	53	30	1.6	326	41	60	17.40	27.6	0.30	<0.001	<0.05	<0.01		443	346
3S/1E 12H 5	21-Dec-09	19.2	650	7.5	48	45	27	1.6	298	38	47	12.93	29.3	0.29	<0.001	<0.05	<0.01		396	308
3S/1E 12H 6	21-Dec-09	18.9	660	7.7	46	43	32	2.0	334	37	26	9.96	28.0	0.26	0.0012	<0.05	<0.01		390	292
3S/1E 12H 7	21-Dec-09	19.1	469	8.3	7	2	95	0.8	206	16	31	5.45	23.3	0.45	0.025	<0.05	<0.01		286	27
3S/1E 12K 2	21-Jan-10	16.2	622	7.4	39	41	24	1.4	230	36	56	7.84	24.2	0.29	<0.001	<0.05	<0.01		343	265
3S/1E 12K 3	21-Jan-10	16.7	843	7.2	58	54	32	1.7	314	48	74	23.38	25.9	0.34	<0.001	<0.05	<0.01		472	366
3S/1E 12K 4	21-Jan-10	16.0	340	7.8	21	17	23	1.3	155	8	15	13.42	25.9	0.14	<0.001	<0.05	<0.01		202	121
3S/1E 13P 1	27-Apr-10	17.6	641	7.5	52	21	48	1.6	187	46	89	0.49	12.5	0.33	<0.001	0.13	<0.01		363	218
3S/1E 14B 1	28-Apr-10	11.8	674	7.3	70	28	31	1.6	261	39	66	7.88	17.8	0.29	<0.001	<0.05	<0.01		390	290
3S/1E 14D 2	28-Apr-10	16.6	846	7.3	80	30	50	1.6	284	50	95	17.36	18.1	0.42	<0.001	0.11	<0.01		482	324
3S/1E 15J 3	20-Jan-10	16.6	1246	7.3	131	53	52	2.5	490	47	134	8.19	19.3	0.51	<0.001	0.84	0.042		689	545
3S/1E 15M 3	20-Jan-10	17.2	846	7.3	72	31	52	1.6	281	38	99	20.06	25.7	0.27	<0.001	<0.05	<0.01		478	308
3S/1E 16A 2	09-Jun-10	18.1	805	7.5	77	28	41	1.8	283	47	84	10.05	17.0	0.38	<0.001	<0.05	<0.01		446	309
3S/1E 16A 4	20-Jan-10	15.8	676	7.5	80	20	30	1.7	270	38	50	10.01	21.8	0.27	<0.001	<0.05	<0.01		385	284
3S/1E 16B 1	20-Jan-10	16.1	559	7.5	62	15	31	1.7	235	36	32	6.78	23.8	0.28	0.0016	<0.05	<0.01		325	218
3S/1E 16C 2	19-Jan-10	16.7	908	7.4	86	39	40	1.7	319	53	93	13.15	20.4	0.38	<0.001	<0.05	<0.01		504	375
3S/1E 16C 3	19-Jan-10	18.2	770	7.6	82	30	32	1.8	298	42	65	13.99	24.2	0.29	<0.001	<0.05	<0.01		439	328
3S/1E 16C 4	19-Jan-10	17.4	758	7.6	82	29	30	1.8	299	41	61	14.30	24.6	0.28	<0.001	<0.05	<0.01		432	323
3S/1E 16E 4	31-Mar-10	17.7	1296	6.9	130	53	76	2.6	528	82	112	43.40	22.0	0.54	<0.001	<0.05	<0.01		781	544
3S/1E 16L 5	09-Jun-10	18.8	1086	7.3	113	47	47	2.2	436	64	101	20.37	21.0	0.41	<0.001	<0.05	<0.01		631	474
3S/1E 16L 7	09-Jun-10	18.6	1033	7.3	108	42	43	2.1	401	61	101	16.87	20.2	0.38	<0.001	<0.05	<0.01		592	441
3S/1E 16P 5	18-Nov-09	16.9	725	6.7	42	28	61	2.0	221	28	104	1.37	14.0	0.30	<0.001	<0.05	<0.01		389	221
3S/1E 16P 5	02-Jun-10	19.8	547	7.0	34	21	49	1.8	217	28	47	0.71	12.9	0.25	<0.001	<0.05	<0.01		301	169
3S/1E 17B 4	31-Mar-10	15.7	1525	7.5	162	79	70	2.6	659	87	142	37.73	20.9	0.57	<0.001	<0.05	<0.01		927	730
3S/1E 17D 3	13-Apr-10	16.9	1605	7.3	145	98	73	2.8	678	98	136	42.34	24.0	0.62	<0.002	0.2	<0.02		954	765
3S/1E 17D 4	13-Apr-10	17.4	1182	8.4	17	3	234	0.7	269	22	206	<0.44	20.5	2.4	0.0072	0.088	<0.01		642	56
3S/1E 17D 5	13-Apr-10	17.9	1166	8.4	14	11	223	0.6	270	20	198	<0.44	16.5	2.4	0.066	0.098	0.2		622	81
3S/1E 17D 6	13-Apr-10	18.3	1431	8.7	12	5	308	1.0	253	9.8	299	<0.44	15.1	1.5	0.0037	<0.1	<0.02		786	50
3S/1E 17D 7	13-Apr-10	17.3	1353	9.0	10	5	274	1.9	108	<1.0	341	<0.44	1.5	1.8	0.0021	<0.1	0.032		697	46
3S/1E 17D11	13-Apr-10	18.0	1352	8.2	20	4	306	<1.0	290	4.1	300	<0.44	22.9	2.5	0.0098	0.27	0.051		804	66
3S/1E 17D12	07-Jan-10	17.5	821	7.4	74	40	37	1.7	348	45	53	15.68	22.3	0.34	0.0012	<0.01	<0.01		461	350
3S/1E 18A 6	28-Dec-09	16.9	1046	7.5	81	47	74	1.8	426	82	88	13.29	24.2	0.52	0.0018	<0.01	<0.01		622	396
3S/1E 18A 6	14-Sep-10	18.3	1002	7.5	83	51	77	1.8	431	79	90	14.53	24.4	0.54	0.0017	<0.005	<0.01		634	418
3S/1E 18E 4	31-Mar-10	16.2	696	7.5	61	16	71	0.7	298	61	44	<0.44	24.2	0.46	<0.001	0.33	0.8		425	216
3S/1E 18J 2	13-Apr-10	14.7	4029	7.2	178	261	502	1.5	1179	839	428	2.30	24.8	2.1	0.021	0.985	4.97		2818	1519
3S/1E 19A10	11-May-10		1352	7.5	130	50	51	2.2	450	84	133	11.20	19.1	0.44	<0.001	<0.05	<0.01		703	530
3S/1E 19A11	11-May-10		1258	7.4	126	57	46	2.0	469	93	103	13.99	19.0	0.40	<0.001	<0.05	<0.01		692	548
3S/1E 19C 4	31-Mar-10	17.3	1094	7.2	113	58	50	2.2	434	135	85	14.04	22.3	0.36	<0.001	0.33	0.053		694	519
3S/1E 19K 1	31-Mar-10	15.0	1147	7.0	94	50	108	1.1	600	122	43	<0.44	16.4	0.65	0.0049	<0.05	2.35		730	441
3S/1E 20B 2	29-Jul-10		906	7.2	83	39	47	1.6	356	51	84	15.94	26.5	0.29	<0.001	<0.05	<0.01		524	367
3S/1E 20C 3	29-Jul-10		960	7.4	94	49	41	2.0	383	57	89	16.96	20.6	0.34	<0.001	<0.05	<0.01		559	436
3S/1E 20C 7	18-Nov-09	17.0	812	7.2	70	32	52	2.0	297	51	85	6.73	17.1	0.42	<0.001	<0.05	<0.01		462	305
3S/1E 20C 7	03-Jun-10	18.2	796	7.2	71	29	52	2.2	290	46	87	5.80	17.1	0.37	<0.001	0.085	<0.01		453	299
3S/1E 20C 8	18-Nov-09	17.2	835	7.5	79	40	38	1.8	364	47	63	19.93	20.6	0.24	<0.001	<0.05	<0.01		490	363
3S/1E 20C 9	18-Nov-09	17.0	977	7.5	86	52	50	2.2	389	65	89	14.26	22.7	0.34	<0.001	0.053	0.16		574	428
3S/1E 20J 4	31-Mar-10	18.4	1185	6.8	66	37	144	1.0	462	71	114	19.88	29.5	0.61	<0.001	<0.05	<0.01		710	318
3S/1E 20M11	03-Jun-10	18.5	1059	7.1	101	49	56	2.0	455	63	89	20.90	22.5	0.41	0.0011	<0.05	<0.01		628	455

**TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2010 Water Year**

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)									Select Metals (mg/L)				TDS mg/L	Hard mg/L
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn		
3S/1E 20Q 2	31-Mar-10	18.3	1916	7.0	126	128	178	<1.0	987	168	121	<0.44	20.9	0.92	<0.002	24.	2.6	1228	841
3S/1E 22D 2	22-Dec-09	17.9	918	6.7	46	34	96	0.8	271	46	98	40.17	36.6	<0.10	<0.001	0.12	0.024	531	254
3S/1E 23J 1	22-Dec-09	17.4	726	6.7	44	28	52	0.9	169	11	110	31.40	37.7	0.10	<0.001	<0.05	<0.01	398	227
3S/1E 25C 3	22-Dec-09	18.1	732	7.0	52	23	63	1.4	251	28	78	22.01	27.2	0.31	<0.001	0.89	0.014	418	225
3S/1E 29M 4	31-Mar-10	16.1	616	6.9	49	32	34	2.4	273	44	30	<0.44	24.8	0.29	0.02	6.9	0.3	351	252
3S/1E 29P 2	31-Mar-10	16.6	1930	6.9	118	99	160	3.9	741	64	260	<0.44	19.9	1.2	<0.002	2.2	1.3	1090	704
3S/1W 1B 9	16-Feb-10	18.1	864	7.8	48	15	124	1.1	341	34	91	<0.44	21.8	0.52	0.0053	<0.05	0.12	505	181
3S/1W 1B10	16-Feb-10	20.3	863	7.7	50	13	131	0.7	395	<1.0	95	<0.44	26.1	0.56	0.13	0.42	0.17	512	178
3S/1W 1B11	16-Feb-10	20.3	919	7.9	29	8	167	0.8	274	<1.0	170	<0.44	25.5	0.73	0.021	0.13	0.053	537	106
3S/1W 1J 1	16-Dec-09	18.09	2785	7							211				0.039			1948	
3S/1W 1J 1	16-Dec-09		2786	7.4							211				0.039			1948	
3S/1W 1J 2	15-Dec-09	17.98	2928	7.01							166				0.012			2120	
3S/1W 2A 2	10-Feb-10	18.8	1611	6.8	204	36	98	0.5	643	73	179	7.40	23.3	0.40	0.0014	<0.05	<0.01	938	659
3S/1W 12A 9	08-Dec-09		5459	7.7	484	209	307	3.0	268	71	1710	<0.44	25.0	0.51	0.0034	<0.25	7.2	2942	2070
3S/1W 12A 9	08-Dec-09	18.85	5360	6.71	484	209	307	3.0	268	71	1710	<0.44	25.0	0.51	0.0034	<0.25	7.2	2942	2070
3S/1W 12A10	08-Dec-09		2952	7.9	78	67	534	1.5	831	553	225	8.81	18.3	3.1	0.006	<0.25	0.77	1901	469
3S/1W 12A10	08-Dec-09	19.35	3001	6.88	78	67	534	1.5	831	553	225	8.81	18.3	3.1	0.006	<0.25	0.77	1901	469
3S/1W 12B 2	16-Feb-10	20.0	961	6.8	102	28	55	<0.5	327	90	84	24.40	37.4	0.22	<0.001	0.054	0.66	582	370
3S/1W 12J 1	14-Apr-10	17.8	1696	7.2	123	33	241	<1.0	480	287	173	4.96	27.4	0.81	0.0025	0.58	0.66	1126	445
3S/1W 13J 1	31-Mar-10	17.8	935	6.8	98	38	42	<0.5	304	113	90	16.92	24.8	0.17	<0.001	<0.05	<0.01	572	402
3S/2E 1F 2	16-Nov-09	18.7	2834	7.3	122	49	390	1.4	229	229	657	15.72	51.6	8.0	0.0024	<0.05	<0.01	1629	506
3S/2E 2B 2	16-Nov-09	20.1	1689	7.4	113	30	180	1.0	246	92	350	24.36	38.3	1.8	0.002	0.18	<0.01	950	406
3S/2E 3A 1	12-Apr-10	18.2	1025	7.7	58	29	118	1.0	282	76	133	25.33	33.8	1.5	0.0033	<0.05	<0.01	614	263
3S/2E 3K 3	12-Apr-10	19.6	984	7.7	53	39	97	2.0	299	58	109	39.59	27.0	1.3	0.0018	0.15	<0.01	573	293
3S/2E 5N 1	21-Dec-09	19.8	887	7.5	56	55	40	1.9	314	41	70	45.17	30.6	0.59	<0.001	0.52	<0.01	495	366
3S/2E 7C 2	09-Nov-09		1217		58	85	60	5.3		71	140		40	0.26				724	
3S/2E 7C 2	11-Feb-10		1185		58	88	59	5.3		64	127		40	0.051				709	
3S/2E 7C 2	05-Apr-10		1191		58	89	60	5.2		68	116		40	0.47					
3S/2E 7C 2	10-Aug-10		1289		62	99	61	5.3		71	116		40	0.59				782	
3S/2E 7H 2	27-Apr-10	18.6	1259	7.1	64	70	118	2.6	455	157	81	59.34	30.8	0.70	<0.001	<0.05	0.087	807	447
3S/2E 7N 1	22-Dec-09	15.8	595	7.5	31	34	37	1.4	231	26	53	5.05	23.8	0.22	<0.001	<0.05	<0.01	326	218
3S/2E 7P 3	17-Nov-09											16.57							
3S/2E 7P 3	31-May-10			7.78															
3S/2E 7R 3	23-Nov-09											23.471							
3S/2E 7R 3	21-Apr-10											22.821							
3S/2E 7R 3	12-Jul-10											23.095							
3S/2E 8F 1	05-Oct-09											38.307							
3S/2E 8F 1	19-Oct-09											36.902							
3S/2E 8F 1	20-Oct-09	18.1		7.3															
3S/2E 8F 1	26-Oct-09											36.521							
3S/2E 8F 1	01-Feb-10											40.204							
3S/2E 8F 1	08-Feb-10											37.845							
3S/2E 8F 1	16-Feb-10											38.107							
3S/2E 8F 1	22-Feb-10											40.294							
3S/2E 8F 1	02-Mar-10											37.839							
3S/2E 8F 1	08-Mar-10											37.648							
3S/2E 8F 1	15-Mar-10											37.95							
3S/2E 8F 1	23-Mar-10											37.289							
3S/2E 8F 1	30-Mar-10											37.401							
3S/2E 8F 1	05-Apr-10											37.527							
3S/2E 8F 1	12-Apr-10											36.604							

**TABLE 3.2-4
ZONE 7 WATER AGENCY
WATER QUALITY RESULTS FOR GROUNDWATER SAMPLES
2010 Water Year**

SITE ID	DATE	TEMP. °C	EC umhos/cm	pH	Mineral Constituents (mg/L)										Select Metals (mg/L)				TDS mg/L	Hard mg/L					
					Ca	Mg	Na	K	HCO3	SO4	Cl	NO3	SiO2	B	As	Fe	Mn								
3S/2E 18B 1	27-Sep-10												32.339												
3S/2E 18E 1	09-Feb-10	17.3	610	7.5	44	42	20	1.9	241	40	60	5.27	25.5	0.22	<0.001	<0.05	<0.01					358	282		
3S/2E 19D 7	01-Jun-10	19.0	791	7.4	67	39	27	1.9	254	17	106	22.72	23.5	<0.10	<0.001	<0.05	<0.01					430	328		
3S/2E 19D 8	01-Jun-10	19.6	734	7.4	65	35	26	1.8	243	16	99	23.07	24.4	<0.10	<0.001	<0.05	<0.01					410	308		
3S/2E 19D 9	01-Jun-10	19.0	434	7.6	43	11	23	1.4	159	5	34	26.00	25.9	<0.10	<0.001	0.2	<0.01					248	154		
3S/2E 19D10	02-Jun-10	19.5	722	7.0	65	25	41	1.6	202	26	86	49.60	27.6	<0.10	<0.001	<0.05	<0.01					421	264		
3S/2E 20M 1	22-Dec-09	14.7	832	7.4	66	32	61	1.5	327	51	71	8.90	19.7	0.31	<0.001	<0.05	0.092					473	296		
3S/2E 22B 1	27-Apr-10	16.7	1345	7.3	74	114	63	1.3	324	369	55	73.51	30.0	0.40	<0.001	<0.05	<0.01					940	654		
3S/2E 23E 1	16-Nov-09	21.8	814	7.5	43	56	45	2.2	353	43	68	11.43	23.3	0.46	0.0016	0.22	<0.01					467	336		
3S/2E 23E 2	16-Nov-09	20.0	1112	7.5	45	60	104	3.0	384	48	168	<0.44	21.8	2.3	0.002	0.097	0.01					640	361		
3S/2E 24A 1	17-Nov-09	17.8	1579	7.1	118	57	137	1.6	525	90	160	121.34	28.9	1.2	<0.001	<0.05	<0.01					973	532		
3S/2E 26J 2	16-Nov-09	18.2	1402	7.3	66	103	67	3.1	486	57	151	88.57	15.9	0.67	<0.001	<0.05	0.077					792	588		
3S/2E 29F 4	16-Nov-09	18.3	689	7.3	66	23	46	1.8	253	44	84	<0.44	19.4	0.36	0.0028	0.23	0.14					409	258		
3S/2E 29F 4	02-Jun-10	20.4	679	7.5	71	25	36	1.7	307	53	35	0.66	18.5	0.28	0.0029	0.094	0.15					393	278		
3S/2E 30D 2	22-Dec-09	18.5	547	7.2	36	16	44	1.7	175	18	68	0.49	13.1	0.26	<0.001	0.6	0.068					284	157		
3S/2E 33G 1	16-Nov-09	17.0	503	7.2	29	13	52	2.2	145	37	66	<0.44	14.8	0.24	<0.001	<0.05	<0.01					286	128		
3S/2E 33G 1	03-Jun-10	25.8	475	7.6	38	17	29	2.1	187	42	30	<0.44	12.4	0.30	0.0013	<0.05	<0.01					263	168		
3S/2E 33G 5	10-Feb-10		1897	7.9	18	18	370	4.3	592	45	280	<0.44	46.4	11	<0.001	0.062	0.034					1077	119		
3S/2E 33K 1	10-Dec-09	18.5	1700	7.4																			960		
3S/2E 33K 1	11-Mar-10	16.5	1700	7.4																			950		
3S/2E 33K 1	09-Sep-10	21	1800	7.8																			1100		
3S/2E 33L 1	10-Dec-09	17.0	1100	6.7																			580		
3S/2E 33L 1	11-Mar-10	16	700	7.0																			370		
3S/2E 33L 1	09-Sep-10	20.5	1200	7.2																			680		
3S/3E 7D 2	17-Nov-09	18.7	2167	7.6	98	43	302	1.9	275	261	410	16.83	47.1	6.5	0.0025	<0.05	<0.01					1316	422		