

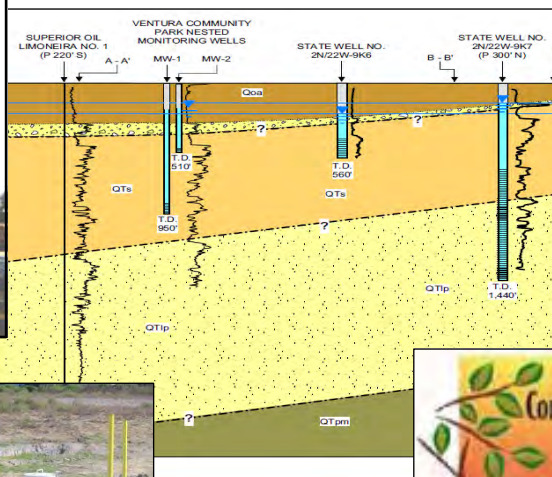
HOPKINS GROUNDWATER CONSULTANTS, INC.

PRELIMINARY HYDROGEOLOGICAL STUDY

CITY OF SAN BUENAVENTURA MOUND WELL NO. 2 SITING STUDY VENTURA, CALIFORNIA

Prepared for:
City of San Buenaventura

APRIL 2009



April 29, 2009
Project No. 01-009-04B

City of San Buenaventura
Engineering Department
Post Office Box 99
Ventura, California 93002-0099

Attention: Ms. Karen Whitehouse
Project Engineer

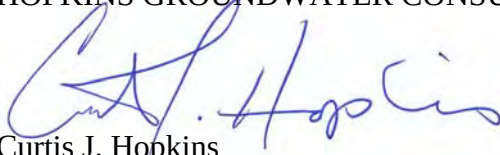
Subject: *Preliminary Hydrogeological Study, City of San Buenaventura Mound Well No. 2
Siting Study, Ventura, California, dated April 2009.*

Dear Ms. Whitehouse:

We are pleased to submit this final report summarizing the findings, conclusions, and recommendations developed from the subject well siting study. The study included the drilling of an engineering test hole and the construction of two (2) monitoring wells at the City of San Buenaventura Ventura Community Park (Park). The study concludes that Mound Well No. 2 can be located at the Park and provide the desired operational production rate of up to 3,000 gallons per minute of a suitable quality supply for municipal uses. We trust this report provides a sufficient summary of the hydrogeological conditions at the Park site. If you have any questions or need any additional information please give us a call.

Sincerely,

HOPKINS GROUNDWATER CONSULTANTS, INC.



Curtis J. Hopkins
Principal Hydrogeologist
Certified Hydrogeologist HG 114
Certified Engineering Geologist EG 1800



Robert Medina
Project Hydrogeologist

Copies Submitted: Six (6) Bound Copies
One (1) Electronic Copy

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INTRODUCTION

Presented in this report is a summary of the findings, conclusions, and recommendations developed from the Mound Well No. 2 (Mound No. 2) siting study conducted by Hopkins Groundwater Consultants, Inc. (Hopkins) which included the drilling of an engineering test hole and the construction of two (2) new monitoring wells at the City of San Buenaventura (City) Ventura Community Park (Park). The test hole drilling and monitoring well construction was conducted to obtain site specific hydrogeological data to allow further assessment of the feasibility of constructing a new municipal well (Mound No. 2) on the Park site. Mound No. 2 will serve to supplement the City's existing water supply and potentially initiate development of an east-basin wellfield. In addition to providing site specific hydrogeological data the new monitoring wells will allow the City to monitor groundwater conditions in the eastern portion of the Mound Groundwater Basin (MGB) and be included in the basin management program being conducted by the City. The Park location, which approximately defines the project study area, is indicated on Plate 1 – Project Location Map.

GENERAL STATEMENT

Initial City planning had previously designated an area to locate Mound No. 2 in the northwest corner of the Park. Subsequent review of available data indicated that relocation of the well to the southern portion of the Park could shorten the final construction depth and reduce construction costs (Hopkins, 2008). In addition, a pipeline constructed to a well in this location could provide conveyance for groundwater produced from future City wells that may be installed in the undeveloped agricultural land adjacent the south side of the Park.

Mound No. 2 is intended to provide an operational capacity on the order of 3,000 gallons per minute (gpm) to supplement the existing City supply from the MGB and improve water system reliability. We also understand that the City's groundwater supply from the existing MGB wells has slowly degraded in quality and that a groundwater source with improved quality is desired. Based on available data supplied by the County of Ventura Watershed Protection District (County) and the United Water Conservation District (United), the Park location was anticipated to be suitable for groundwater production facilities that could (if properly located, designed, and constructed) achieve the stated City water supply objectives (Hopkins, 2008).

PURPOSE AND SCOPE

The purpose of the project was to collect site specific hydrogeological data that would allow the final selection of the Mound No. 2 well site and provide information for future water supply planning. The study was conducted specifically to verify the presence of suitable geological materials (aquifers) for groundwater production, obtain local groundwater levels, and to sample the underlying groundwater to verify that it is of suitable quality. During the

exploration and construction phase of the study, Hopkins provided professional field inspection services and project oversight and supervision to facilitate monitoring well installation and data collection.

The scope of Hopkins' services was developed through discussions with City Water Division and Engineering staff and included:

- Drilling an engineering test hole to evaluate site specific subsurface materials,
- Developing a preliminary monitoring well design and retaining a qualified drilling contractor,
- Conducting onsite observation of contractor activities during all aspects of the project,
- Compiling a lithological log of cuttings generated during test hole drilling,
- Providing an geophysical electric log interpretation and preparing the final monitoring well designs to meet study objectives and serve as future basin management facilities,
- Purging and sampling the monitoring wells and obtaining laboratory water quality testing of constituents for Title-22 State drinking water standards,
- Developing a preliminary production well design based on analysis of site specific lithology, electric log information, and water quality laboratory test results,
- Compiling this final report documenting test hole drilling activities and “as-built” monitoring well design details, and presenting the conclusions, and recommendations developed from the findings of the study.

Additional documentation provided in the appendices of this report includes Appendix A – Summary of Monitoring Well Installation Activities, Appendix B – Well Construction Permit and Well Logs, Appendix C – Water Quality Test Results, Appendix D – Water Quality Characterization, and Appendix E – Estimated Aquifer Response to Pumping.

FINDINGS

DATA REVIEW

For this study Hopkins reviewed available information for the MGB which included hydrogeological studies, lithological and geophysical logs from proximate oil wells and water wells, existing well designs, well construction records containing well performance data, and available water level and water quality data. Initial study efforts included obtaining up-to-date information from the City, United, and the County. Based on these data, Hopkins and the City discussed the merits of extending the exploratory test hole to a depth of 1,500 feet bgs to obtain a deeper lithological section.

Initially, Hopkins and the City reviewed Park improvement plans and selected preliminary locations for the potential installation of Mound No. 2 that could be incorporated into the existing Park improvements without conflict. Subsequently the test hole location was selected and the City surveyed the test hole location which was to be drilled within a future linear parkway area that could accommodate the establishment of monitoring wells and future measurement activities. The location of the test hole and subsequent nested monitoring well installation is shown on Plate 1.

FIELD INVESTIGATIONS

Test hole drilling and monitoring well construction was conducted in the southwest corner of the Park (see Plate 1), adjacent the intersection of Telephone Road and Ramelli Avenue as recommended by the conclusions of a previous study (Hopkins, 2008) and coordinated with planned Park improvements. During excavation of the test hole Hopkins collected drill cuttings, compiled a lithologic log, and monitored drill rig activities. Subsequently, an electric log of the borehole was recorded to provide additional data of aquifer properties and for final monitoring well design. The final well design was determined through correlation of the lithological log and geophysical survey. A summary of the test hole drilling, well construction, development, and sampling activities conducted as part of this study is included in Appendix A.

Historical MGB data indicate that the quality of groundwater in the shallower aquifer zones has been impacted by percolation of return-flow recharge that originates from overlying land uses. For this reason, only the intermediate and deeper aquifer zones were considered viable to meet City water supply objectives and thus selected for monitoring well construction. MW-1 was completed to a depth of 950 feet below ground surface (bgs) to sample the water quality and measure water levels representative of the deeper aquifer zones that lie beneath the Park. MW-2 was completed to a depth of 510 feet bgs to develop these same data for the intermediate aquifer zone(s).

A record drawing of the nested monitoring well installation is shown on Plate 2 – Well Construction Drawing, Ventura Community Park Nested Monitoring Wells MW-1 and MW-2. The wells were drilled, constructed, and developed between September 9, 2008 and October 3, 2008 by Bradley and Sons, Inc. (Bradley) of Fresno, California. Additional well development and groundwater sampling was conducted by Hopkins on October 9, 10, and 29, 2008. The County has since designated MW-1 and MW-2 as State Well Numbers 2N/22W-09L03S and 2N/22W-09L04S, respectively and incorporated the wells into its bimonthly water level monitoring program.

GROUNDWATER BASIN CONDITIONS

Hydrogeology

The Park lies within the eastern portion of the MGB approximately 1 mile west of the Santa Paula Basin boundary and ¼ mile north of the Oakridge Fault zone which effectively defines the southern boundary of the basin. The geologic structure forming the MGB is largely an east-west trending syncline with the structural axis (the deepest portion of the basin) located roughly parallel to, and north of the 126 Freeway. Geological formation bedding rises up in the hills above Foothill Road along the northern basin boundary where it outcrops and becomes a groundwater recharge area for rainfall and stream flow percolation within the more permeable strata that become aquifer zones where they are saturated.

The aquifer zones beneath the Park that have historically provided groundwater for overlying uses are contained within the Saugus Formation and the overlying Pleistocene deposits of older alluvium. The older alluvial deposits may be correlated with the Oxnard or Mugu Aquifer of the Oxnard Plain Basin (UWCD, 1999). Available well logs provide a source of information utilized by this study to infer the subsurface geological structure beneath the Park and the potential aquifer zones available to the City for municipal production. Plate 3 – Hydrogeological Cross-Section A-A' Location Map shows the approximate location of a hydrogeological cross-section constructed across the southern boundary of the project study area (Park). Included on Plate 3 is the location of existing wells in the vicinity of the project and the monitoring wells installed as part of the study which provided the hydrogeological data used for cross-section construction. Plate 4 – Hydrogeological Cross-Section A-A' depicts the subsurface geological profile along the southern boundary of the Park and illustrates the approximate depths of the older alluvium, the Saugus Formation, and the Las Posas Sand Formation. Plate 5 – Hydrogeological Legend provides supporting definitions of terms, abbreviations, and symbols used on Plate 4.

Historical well logs and lithological data obtained during test hole drilling (see Appendix B) indicates that the top of the Saugus Formation is located approximately 350 feet bgs along the southern portion of the Park. Beneath this depth the Saugus Formation consists of interbedded silt and clay layers with highly-permeable sand and gravel deposits that are believed to extend to

a depth of over 2,000 feet bgs along the northern portion of the Park (Fugro, 1996). Many of the aquifer zones in the Saugus Formation are lenticular in nature and consequently vary in thickness and lateral continuity.

The Las Posas Sand Formation underlies the Saugus Formation and generally consists of interbedded marine deposits of sand, silt, and clay layers that are relatively continuous and extend laterally to greater distances than those in the overlying Saugus Formation. The top of the Las Posas Sand Formation is believed to be located at a depth of approximately 1,200 feet bgs based on the test hole cuttings (see Plate 4). Oil well data indicate that the formation ranges in thickness but is generally about 1,000 feet thick in the vicinity of the Park. The sand and gravel layers contained in Las Posas Sand Formation are part of the water-bearing zones that comprise the Fox Canyon Aquifer located beneath the Oxnard Plain.

Water Quality

Historical water quality data from wells completed throughout the MGB indicate that groundwater quality is widely variable across the basin and is dependant on both the location and the depth of the production zones within the basin. Generally, groundwater produced from the deeper aquifer zones of the Saugus and Los Posas Sand Formations is of better quality than groundwater produced from the shallower older alluvial aquifer zones.

Available water quality data indicate that groundwater produced from the shallow aquifer zones in the vicinity of the Park has fair to poor quality with total dissolved solids (TDS) concentrations ranging from approximately 1,400 to 2,000 milligrams per liter (mg/l). Groundwater produced from the deeper aquifer zones in the vicinity of the Park has historically been of an improved quality with TDS concentrations ranging from 1,000 to 1,200 mg/l.

As part of the study groundwater samples were collected from both monitoring wells and tested for a complete Title 22 list of compounds for comparison with California State drinking water standards. A copy of laboratory test results is included in Appendix C. The results unexpectedly indicated that water produced from the intermediate depth aquifer zone penetrated by MW-2 between the depths of 480 and 510 feet bgs contained very poor (brackish) quality groundwater with a TDS concentration of 6,600 mg/l.

Wells monitored by United in the central portion of the MGB reflect similar quality characteristics of improved water quality with increased depth (i.e, Camino Park monitoring wells). TDS values and screen intervals for the Camino Park Monitoring Wells (2N/22W-07M01 through -07M03) are displayed in Figure 1 – TDS Concentrations in Camino Park Wells. Historical TDS values in the deeper Camino wells (M01 and M02) have ranged from 900 to 1,270 mg/l, while the shallow well (M03) produced water with TDS values ranging from 3,000 to 5,300 mg/l (see Figure 1).

Figure 1 – TDS Concentrations in Camino Park Wells

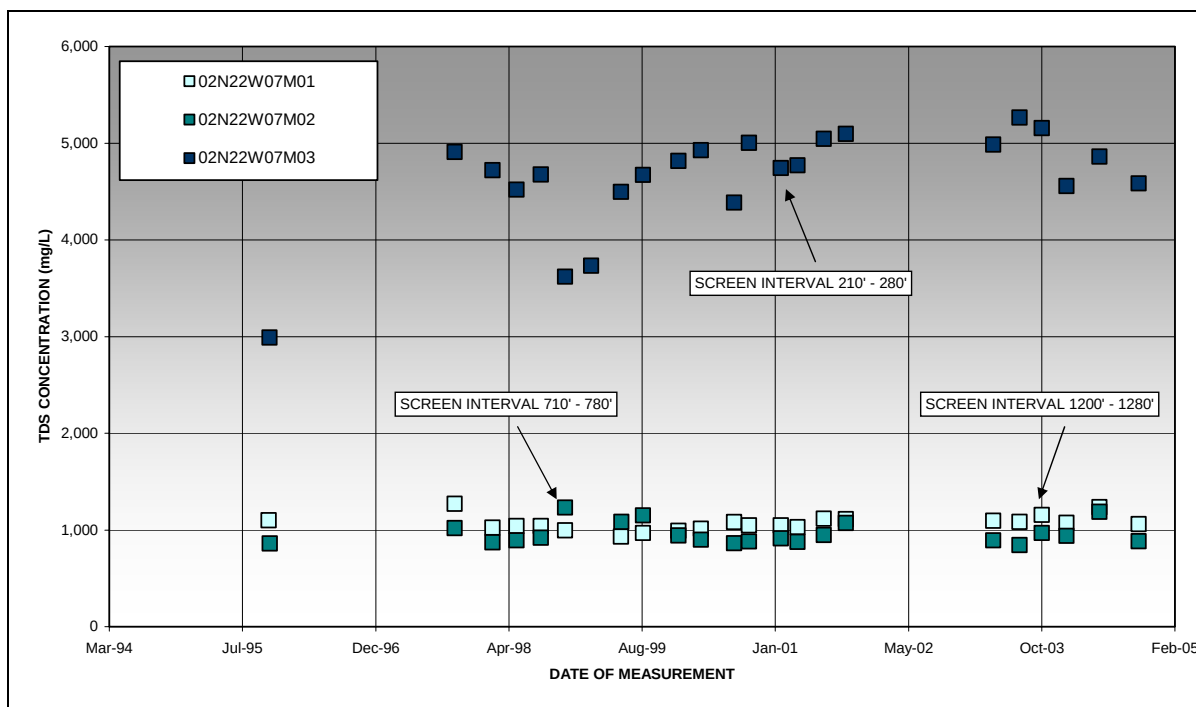
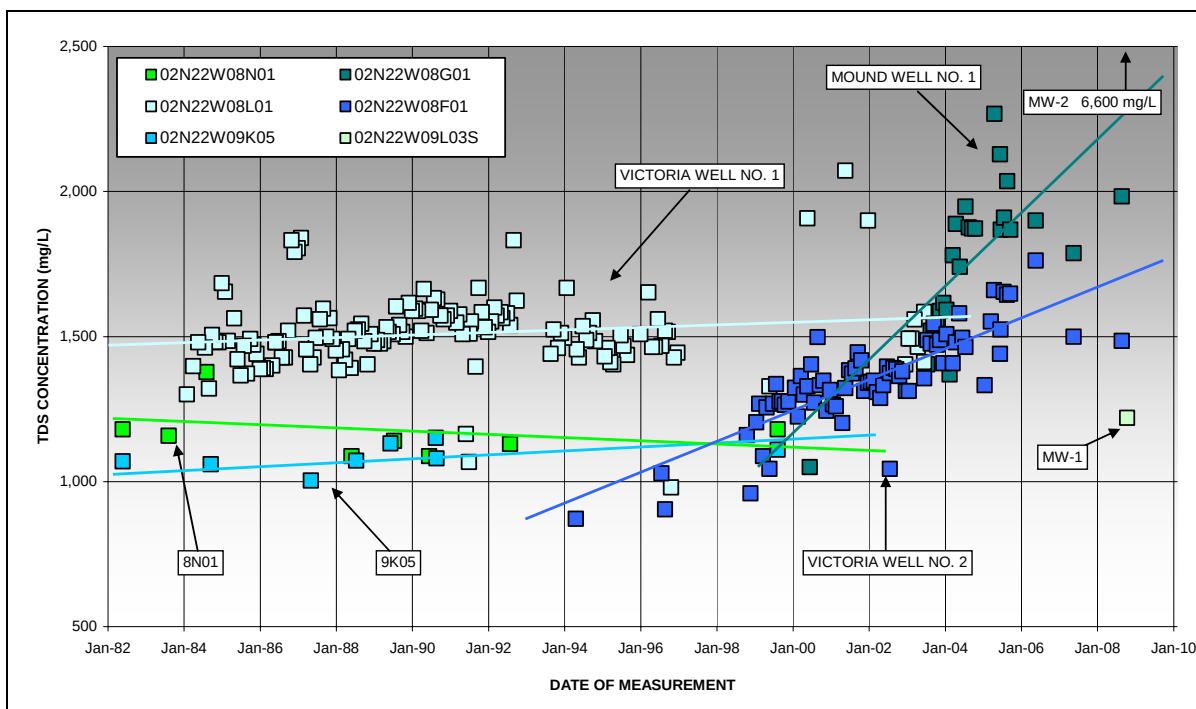


Figure 2 – Historical TDS Concentration Trends



A comparison of the TDS concentrations from wells operating in the central and eastern portions of the MGB is provided in Figure 2 – Historical TDS Concentration Trends. These data include wells operated by the City (Victoria Well Nos. 1 and 2, and Mound Well No.1) and the limited data that are available from a deeper well in the vicinity of the Park (2N/22W-09K05). As shown on Figure 2, MW-1 has a TDS concentration comparable to Victoria Well No. 2 during the initial 6 to 8 years of operation prior to its steady upward trend in TDS concentration. This comparison indicates that groundwater produced from select deeper aquifer zones in the vicinity of the Park should provide the City with a groundwater supply of an acceptable quality. Based on the relatively flat trend of the 20-year data set provided from irrigation well (-09K05) we anticipate the water quality in the deeper aquifers at the Park to remain relatively stable during years of operation.

Laboratory test results of groundwater samples taken from the shallower nested monitoring well (MW-2) indicate a chloride concentration of 165 mg/l and an elevated TDS concentration of 6,600 mg/l (largely because of a high sulfate concentration of 4,040 mg/l). Results from MW-1 in the deeper zone indicate a lower TDS concentration of 1,220 mg/l (with a sulfate concentration of 630 mg/l) and a lower chloride concentration of 86 mg/l. The chemical character of groundwater from monitoring wells MW-1 and MW-2 is predominantly sodium sulfate while groundwater from the existing City MGB wells (Mound Well No. 1 and Victoria Well No. 2) is mainly a calcium sulfate chemical character. An analysis of the chemical character of groundwater sampled from wells within the MGB with recent water quality data is included in Appendix D. A graphical presentation of the results is included as Plate 6 - Trilinear Diagram of Major Anions and Cations and clearly shows that MW-2 has a unique quality compared to the other MGB wells.

Radiological (gross alpha) test results for the deep monitoring well (MW-1) indicate the concentration is considerably lower than the levels measured in existing City MGB wells. Gross alpha and uranium concentrations in the shallow well (MW-2) are elevated (11.3 and 12.2 pCi/l, respectively) and are comparable to results from Victoria Well No. 2 (10.5 and 8.7 pCi/l, respectively). Mound Well No. 1 which is screened entirely in the shallowest aquifer zone (that was not targeted by the study) and has roughly double the value of the other wells for gross alpha and uranium with concentrations of 25.7 and 23.4 pCi/l, respectively.

As shown by the laboratory test results in Appendix C, MW-1 has unusually high sulfate and sodium concentrations 4,040 mg/l and 1,100 mg/l, respectively, which are atypical of groundwater in the MGB. While we are not able to determine the source of the poor quality groundwater, the new well design should appropriately be sealed through this zone to avoid quality degradation during production.

The water quality information provided by the study raises additional questions like:

- a) Does the poor quality recharge source still exist and is it man-made or natural?
- b) Is this quality of groundwater migrating across the MGB in the shallow or intermediate depth aquifer zones?
- c) Is this quality presently impacting the existing City wells located down gradient of this area and causing the poor quality trend that is observed?
- d) Will this quality affect the existing MGB wells in the future to an extent that impacts their use as a municipal supply?
- e) Is the monitoring well construction allowing poor water quality from the shallow zone to influence sampling of the intermediate zone (i.e., an ineffective annular seal)?

While it is beyond the scope of the study to determine the answer to these questions, the identification that a brackish plume exists within the basin should be recognized by future study to determine the significance of its occurrence and the potential it may have to impact existing groundwater supplies.

Groundwater produced from a municipal well constructed in the deeper aquifer zones at the Park location will likely require iron and/or manganese treatment. At the time of the study the iron concentration in MW-1 was 240 micrograms per liter ($\mu\text{g/l}$) which is below the State standard of 300 $\mu\text{g/l}$. However, the manganese concentration was measured at 170 $\mu\text{g/l}$ which exceeds the State standard of 50 $\mu\text{g/l}$ and will require treatment. Available data do not tell us how the concentration of these constituents may vary over time. Production of groundwater from the deep aquifer zones around the Park will provide a fair quality groundwater with concentrations of sulfate and TDS, and a specific conductance value that will likely exceed the secondary standards of 500 mg/l, 1,000 mg/l, and 1,600 micromhos per centimeter ($\mu\text{mhos/cm}$), respectively (see Appendix C).

Water Levels

Plate 7 – Water Level Hydrographs shows a number of the key wells in the MGB with a relatively long-term data set. Since the mid 1990's the water levels along the coast have been monitored using the Marina Park Monitoring Wells. As indicated by these data, the water levels along the shoreline have been maintained at or above mean sea level for the last 13 years (see Plate 7). At this coastal location the water level in the shallowest aquifer zone being monitored is considerably higher than the 2 deeper zones and ranges between 25 and 35 feet above mean sea level. The water level hydrographs on Plate 7 indicate the magnitude of historical fluctuations

that have occurred within the basin. In general, the shallow aquifer zone wells (i.e., Well 8P1) show the highest water level rise above sea level before and after the late 1980's drought while the deeper aquifer zone(s) wells (i.e., Well 8N1 and Victoria No. 1) show the lowest water level decline below sea level during the drought. Over the last 10 years the water levels in the deeper aquifer zones in the western and central portion of the basin have generally stayed between an elevation of +10 feet and sea level.

The MGB has relatively few wells in the western and central portion of the basin that are included in an organized monitoring program. The lack of data in these areas requires an inference of the likely groundwater levels and direction of flow based on available data and an understanding of the existing areas of recharge and sources of discharge from the basin. The water level measurements collected in December 2008 were used to construct water level contour maps of the shallower and deeper aquifer zones being produced by wells. The Camino Park shallow monitoring well data was not used because it is not constructed in a viable aquifer produced by wells in the basin. The intermediate depth Camino Park monitoring well is believed to measure the same zone produced by Mound Well No. 1 and is therefore included in the preparation of Plate 8 – Upper Aquifer Groundwater Elevation Contour Map. As indicated by this map, the water level in the upper aquifer is depressed toward the central portion of the basin where it has been produced by the City and other proximate agricultural wells. By comparison, the deeper aquifer zone water levels shown on Plate 9 – Lower Aquifer Groundwater Elevation Contour Map indicate a central basin depression which extends westward out to the coastline. These water levels reflect the influence of additional production from the lower aquifer zones for agricultural uses across the southwest portion of the basin between the 101 Freeway and Olivas Park Drive.

Lower aquifer water levels in the vicinity of the Park site are substantially higher than water levels in the western half of the MGB (see Plate 9). This condition indicates it would be prudent to locate a production well in this area. A well located in the Park would redistribute pumping inland away from the ocean to an area of the MGB where the agricultural demand has decreased because of land use changes for the Park and adjacent residential developments. Relatively recent residential development in this area of the MGB includes Stone Hedge and proximate residential development which is located directly east of the Park across Kimball Road, and Rancho Del Mar, which is located directly north of the Park across the 126 Freeway. While we don't have any reliable long term water level data for the deeper aquifer zones along the eastern boundary of the MGB the water level has likely recovered to the present levels because of the reduced agricultural demand.

PRELIMINARY WELL DESIGN CONSIDERATIONS

Construction of a municipal well at the Park location will need to include considerations for the conditions discovered by the study. Plate 10 – Preliminary Well Design Drawing shows details of a well design that is suitable for Mound No. 2. The preliminary well design includes a

stainless steel screen section located in the lower aquifer zones that contain the best water quality available. The use of a stainless steel well screen is anticipated to increase the operational life of a well by approximately 20 years. The well diameter will accommodate the desired high production rate of 3,000 gpm and maintain acceptable up-hole velocities. The low carbon steel blank casing in the upper portion of the well will substantially lower the well construction cost (likely between \$50,000 and \$100,000), while encasement in a cement sanitary seal will protect the steel from the aggressive very poor quality/brackish groundwater in the shallow aquifer zones.

WELL INTERFERENCE ANALYSIS

Aquifer parameters for the study were estimated from reported production test results obtained from records of the deeper wells constructed in the proximity of the Park (i.e., -09K05 and -09K07). The results indicate that a formation transmissivity value in the range of 60,000 to 80,000 gallons per day per foot of aquifer (gpd/ft) is suitable for use in approximating the response of the aquifer to pumping stress. A storage coefficient for the confined aquifer zones was assumed to be 0.0001 (dimensionless) which is believed a reasonable value based on other well tests Hopkins has conducted in the MGB. Using these aquifer parameters the aquifer response to the constant production of 3,000 gpm over a 6-month period of time was estimated empirically using the Theis equation of groundwater flow. The results of the analysis using the lowest transmissivity value (60,000 gpd/ft) are provided in Appendix E (see Plate E1).

As indicated, the operation of proposed Mound No. 2 is estimated to result in a drawdown of approximately 60 feet in the nearest production well (-09K07) located about 1,000 feet from the proposed site. Because of the well depth and the available drawdown, this magnitude of impact is considered insignificant and tolerable to the operation of the nearest existing well. Location of future wells should also consider the mutual water level interference created during operation and a separation on the order of 800 to 1,000 feet should be maintained to minimize these concerns. Additional information on aquifer properties will be developed during the construction and testing of Mound No. 2 and can be incorporated in studies during the future planning of additional wells in the area.

Based on our knowledge of other MGB wells and the findings of the test hole that was drilled for the study at the Park we believe the aquifer drawdown projections are conservative and that the formation transmissivity value will likely be higher at the proposed Mound No. 2 location (80,000 to 100,000 gpd/ft).

CONCLUSIONS AND RECOMMENDATIONS

Based on a review of the water quality data obtained during this investigation, we conclude that the deeper aquifer zones located beneath the Park contain distinctly higher quality groundwater than the shallower zones. Historical well data indicate that a well constructed in the deeper aquifer zones would yield water with TDS concentrations that are lower than those found in existing City MGB wells (Victoria Well Nos. 1 and 2 and Mound Well No. 1). It should be noted that while the overall quality of groundwater from a deep well installed in the vicinity of the Park will be higher than the quality of the MGB wells currently operated by the City, the TDS and sulfate values will likely remain above the secondary drinking water standards of 1,000 mg/l and 500 mg/l, respectively. A nearby well installed in these same deep aquifer zones (i.e., -09K05) has experienced a gradual increase in TDS values over time (see Figure 2). However, the observed increase has not been as severe as the TDS increase in the City wells.

Water level data obtained from existing wells and the deep Park monitoring well (MW-1) indicate that the water level in this portion of the basin is substantially higher (approximately 60 feet) than the water levels in the central and western (coastal) portion of the basin. Moving pumping stress away from the shoreline is anticipated to promote water level recovery across the basin and improve conditions that could induce seawater intrusion. Siting Mound No. 2 at the Park would continue implementation of the City's basin management objectives of balancing demand and distributing the pumping to avoid developing adverse groundwater conditions.

We conclude that a properly designed well adequately constructed in the deeper aquifer zones would provide the desired yield of up to 3,000 gpm with reasonable operating conditions and a moderate drawdown of approximately 100 to 150 feet. We recommend the City consider the benefits of establishing an eastside wellfield in the MGB and constructing Mound No. 2 within the Park. At the present time this area provides ample access and work area for new well construction at this time. If the well is appropriately located within the planned improvements of the park, future well operation and maintenance activities could be facilitated.

A preliminary production well design drawing is included as Plate 10 – Preliminary Well Design Drawing. The total well depth and the screen intervals identified in the preliminary well design are based on water quality test results obtained from MW-1 and MW-2 in addition to a review of the lithological and geophysical logs of the Park test hole. As shown on Plate 10, the pilot borehole depth is slightly lower than the well construction depth. We recommend the City consider the merit of drilling a pilot hole to a depth of approximately 2,000 feet to obtain lithological and geophysical log data for future planning. If conducted as part of the Mound No. 2 construction project, which will require a substantial size drilling rig, obtaining the additional data will likely be beneficial and cost effective. We recommend the Mound No. 2 well design be finalized based on the materials encountered in the pilot borehole that is drilled at the time of well construction.

We recommend that during the design and construction of conveyance facilities to the Park the City consider the potential for future well construction. Future wells may be located within the Park or within the agricultural land located immediately south of the Park across Telephone Road. This type of future planning could cost effectively extend the service life of a wellfield in this portion of the MGB.

CLOSURE

This report has been prepared for the exclusive use of the City of San Buenaventura and its agents for specific application to the siting of Mound Well No. 2. The findings, conclusions, and recommendations presented herein were prepared in accordance with generally accepted hydrogeological engineering and groundwater resource planning practices. No other warranty, express or implied is made.

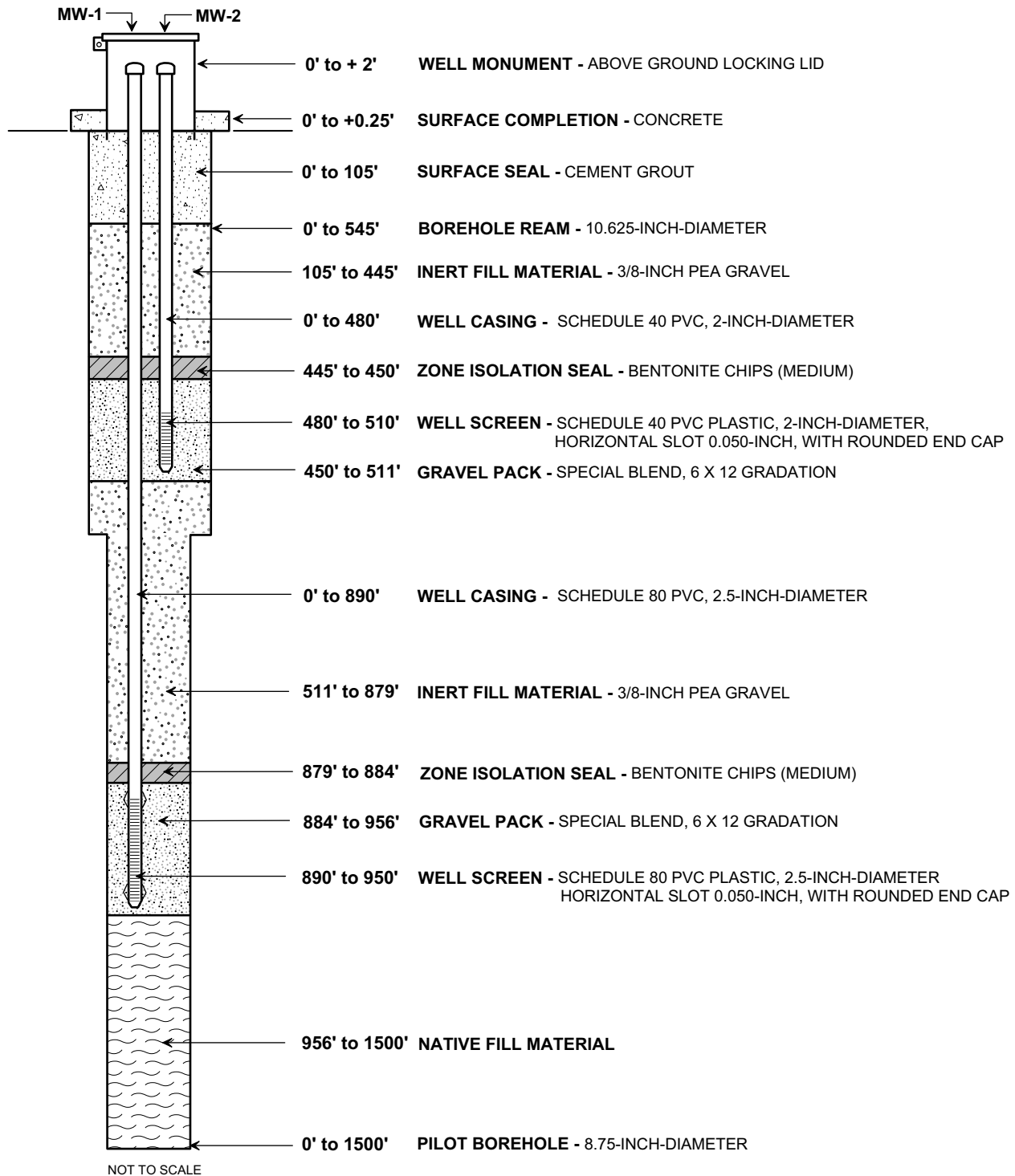
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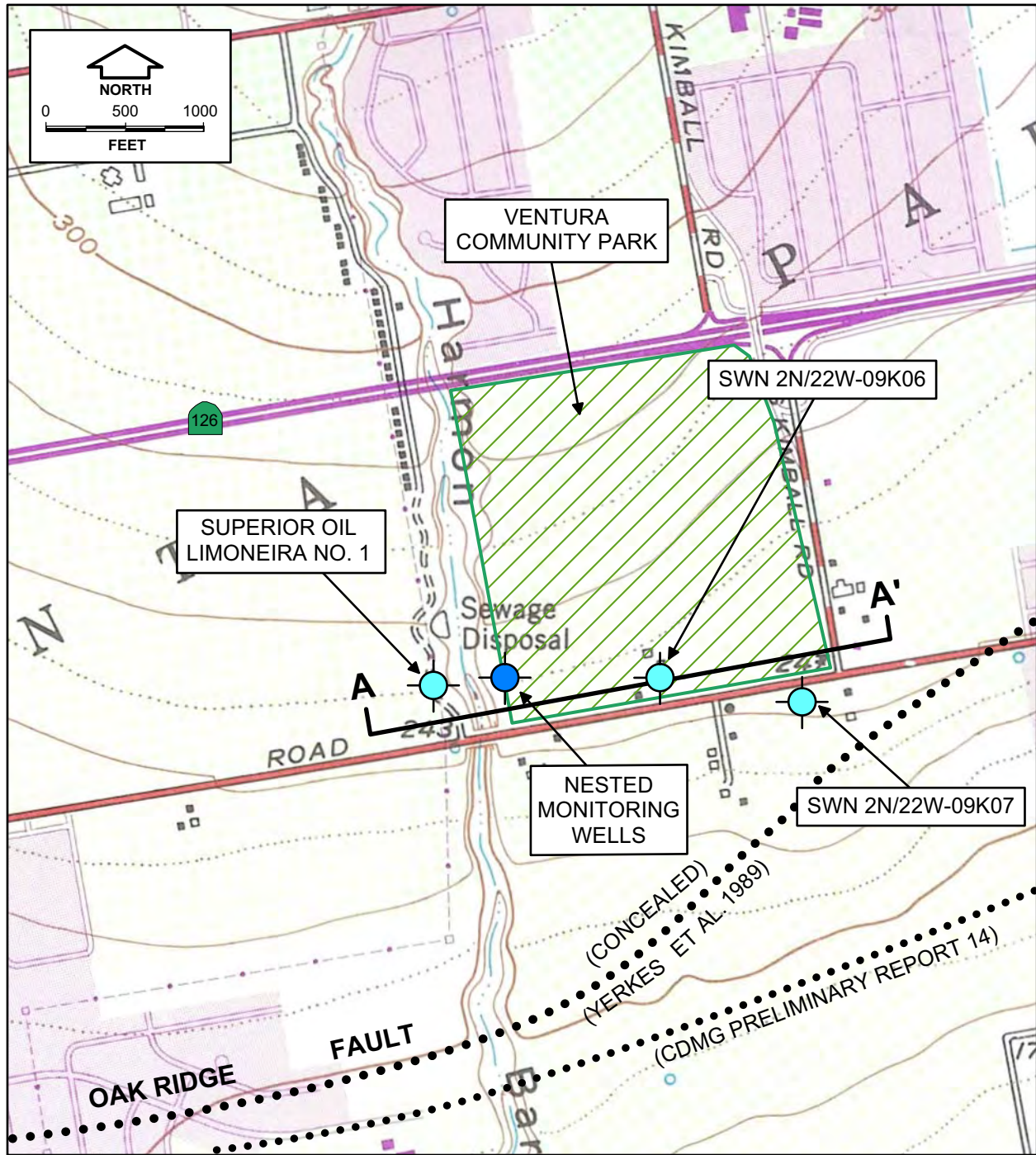
PLATES



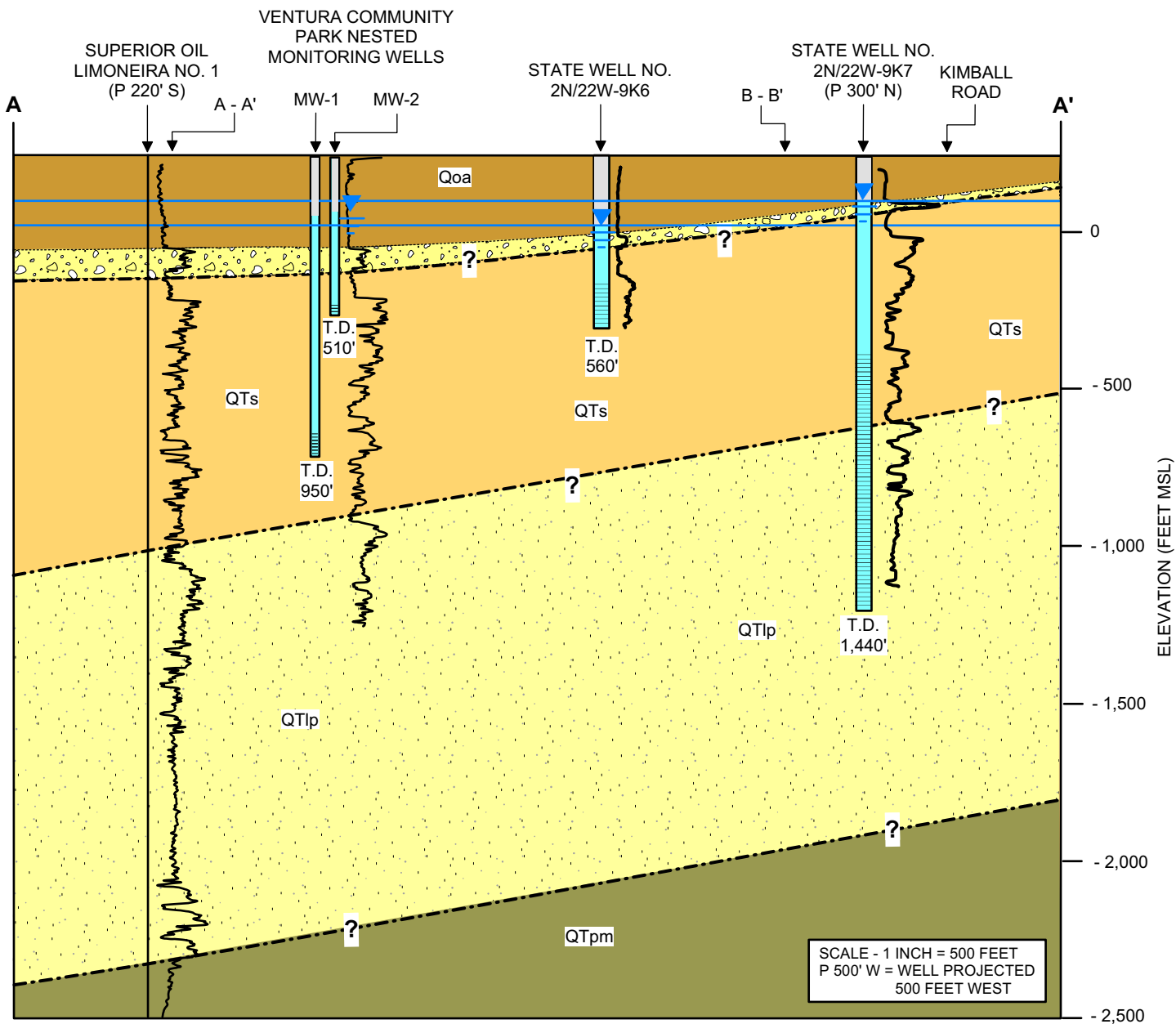
PROJECT LOCATION MAP
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California



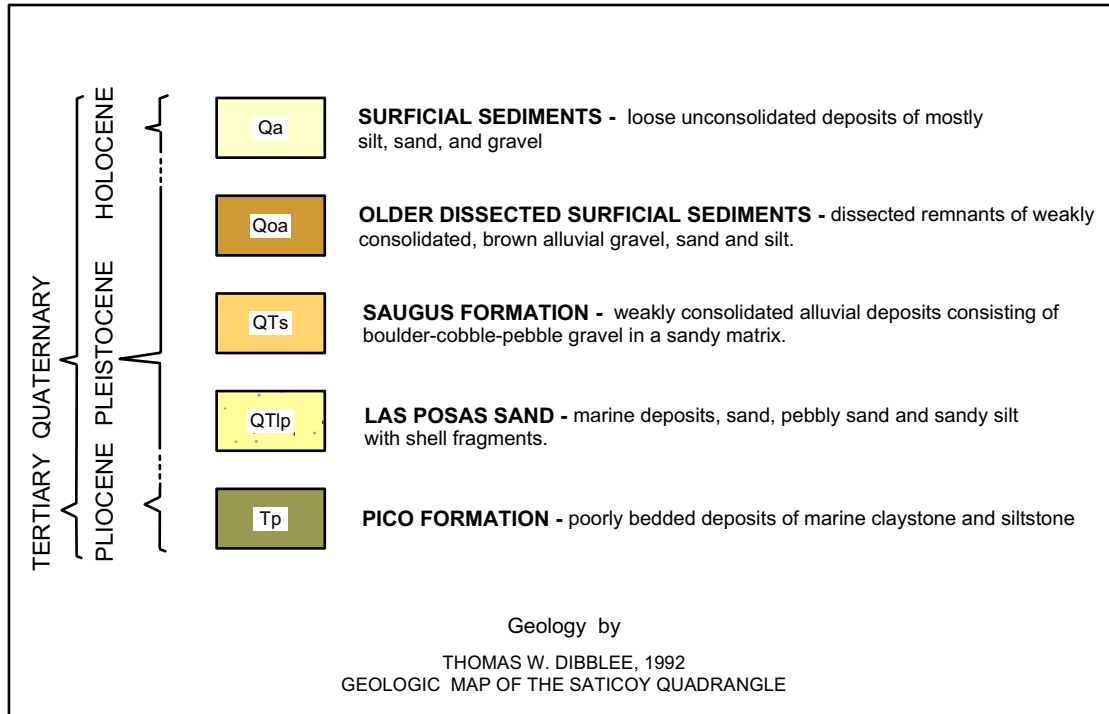
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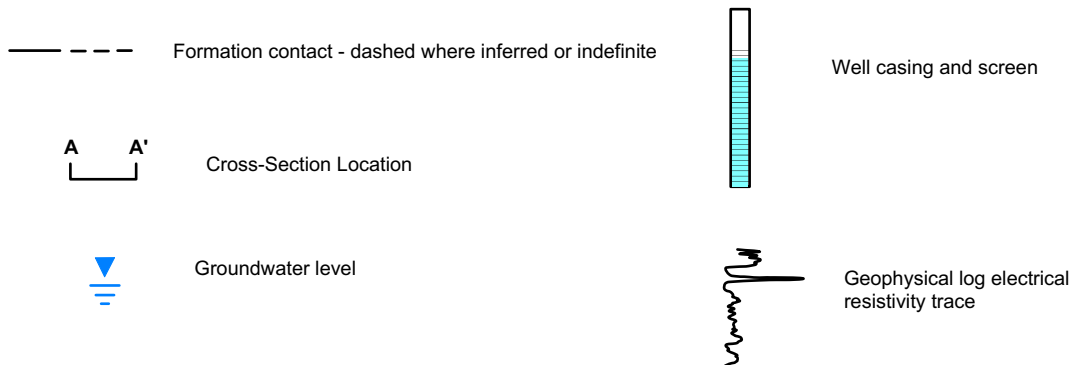
**HYDROGEOLOGICAL
CROSS-SECTION A-A' LOCATION MAP**
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California



HYDROGEOLOGICAL CROSS-SECTION A - A'
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California



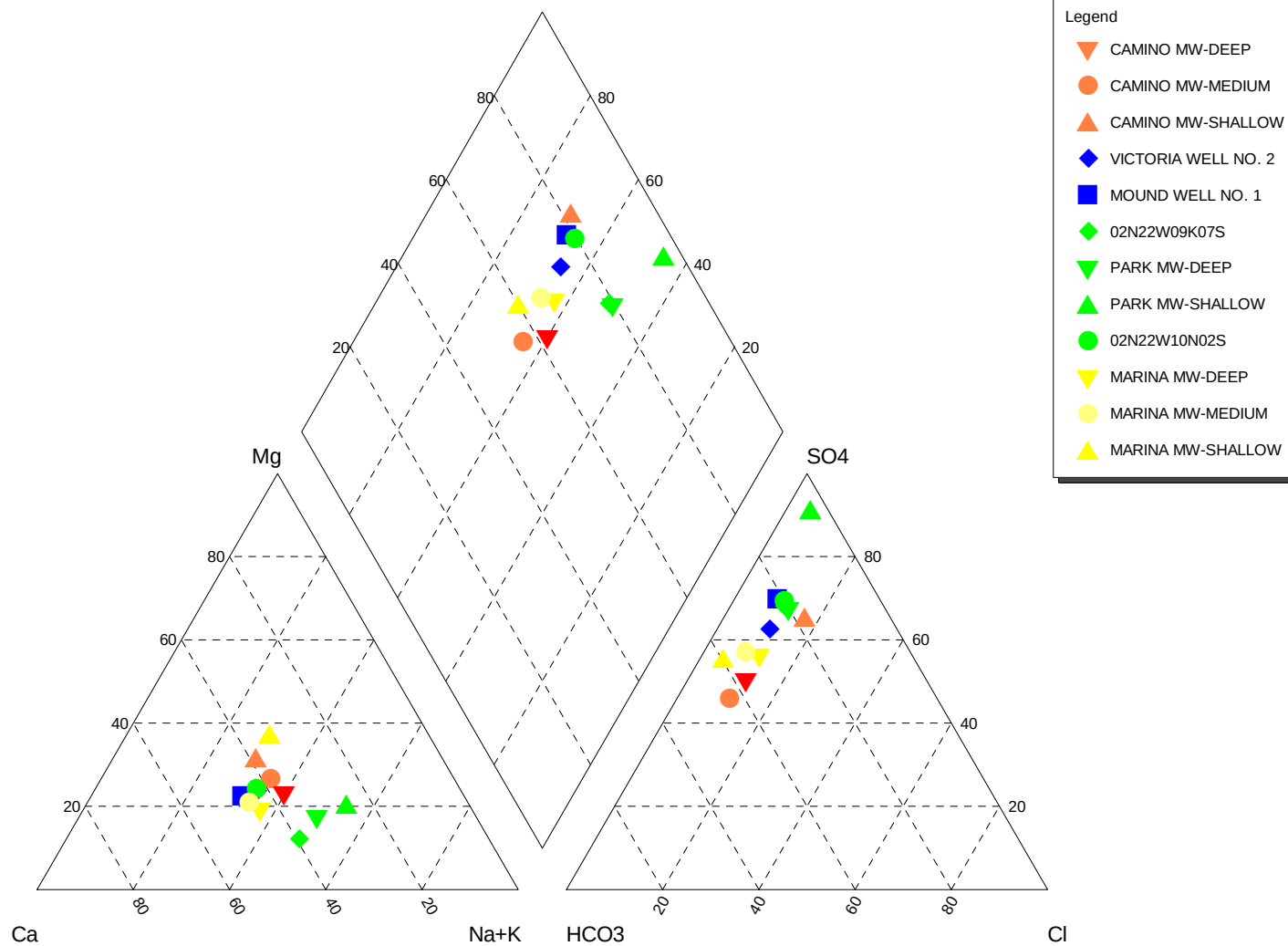
SYMBOLS



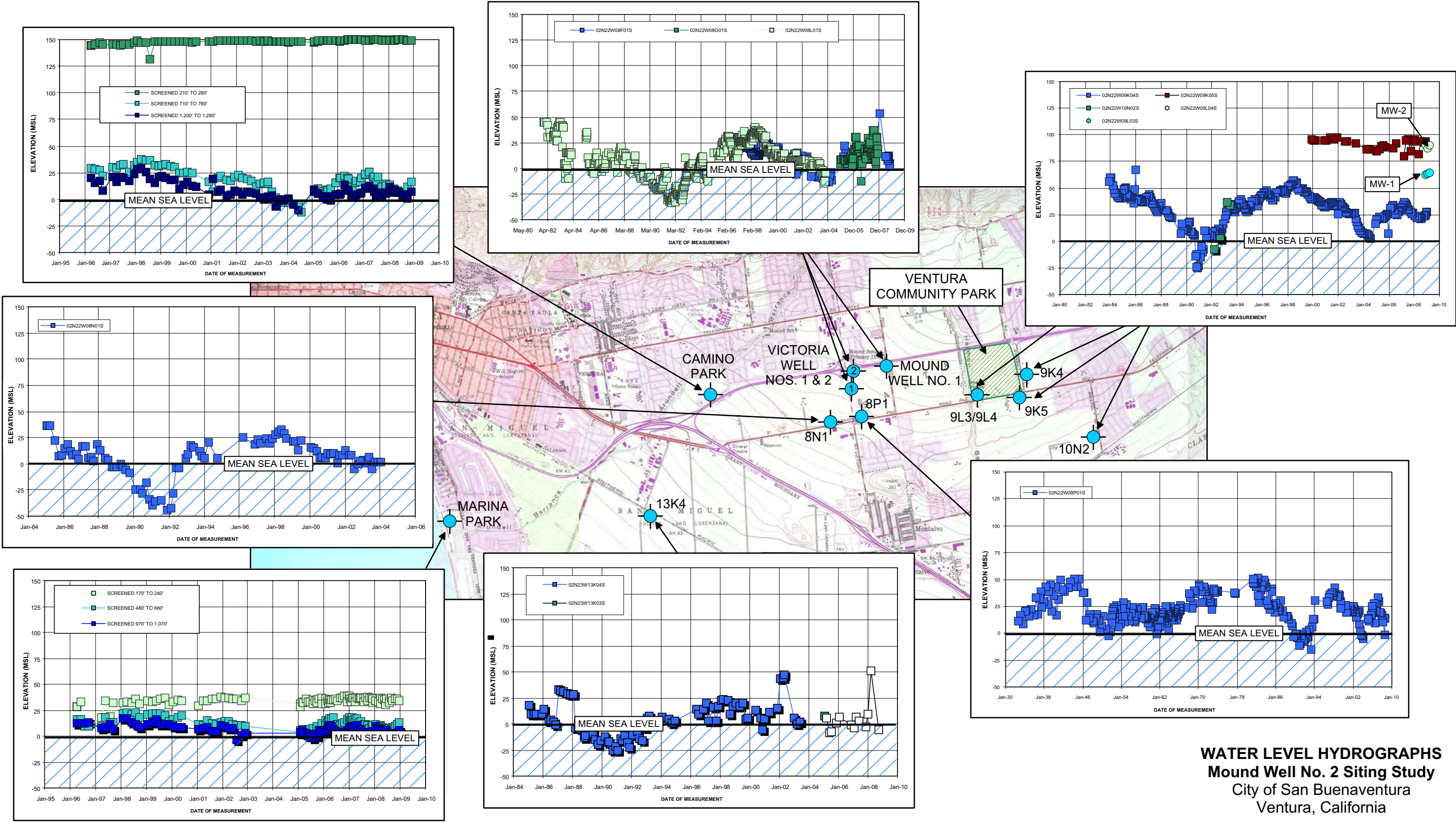
HYDROGEOLOGICAL LEGEND

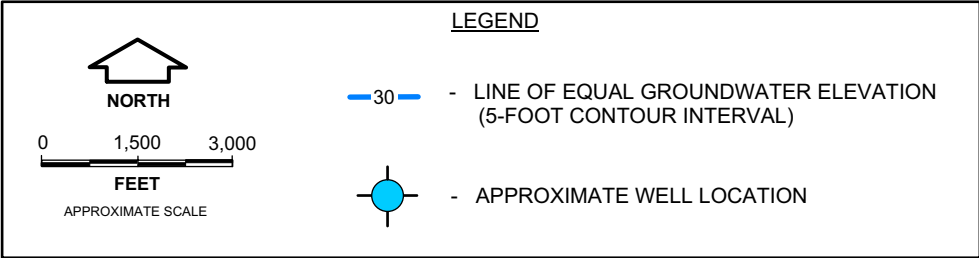
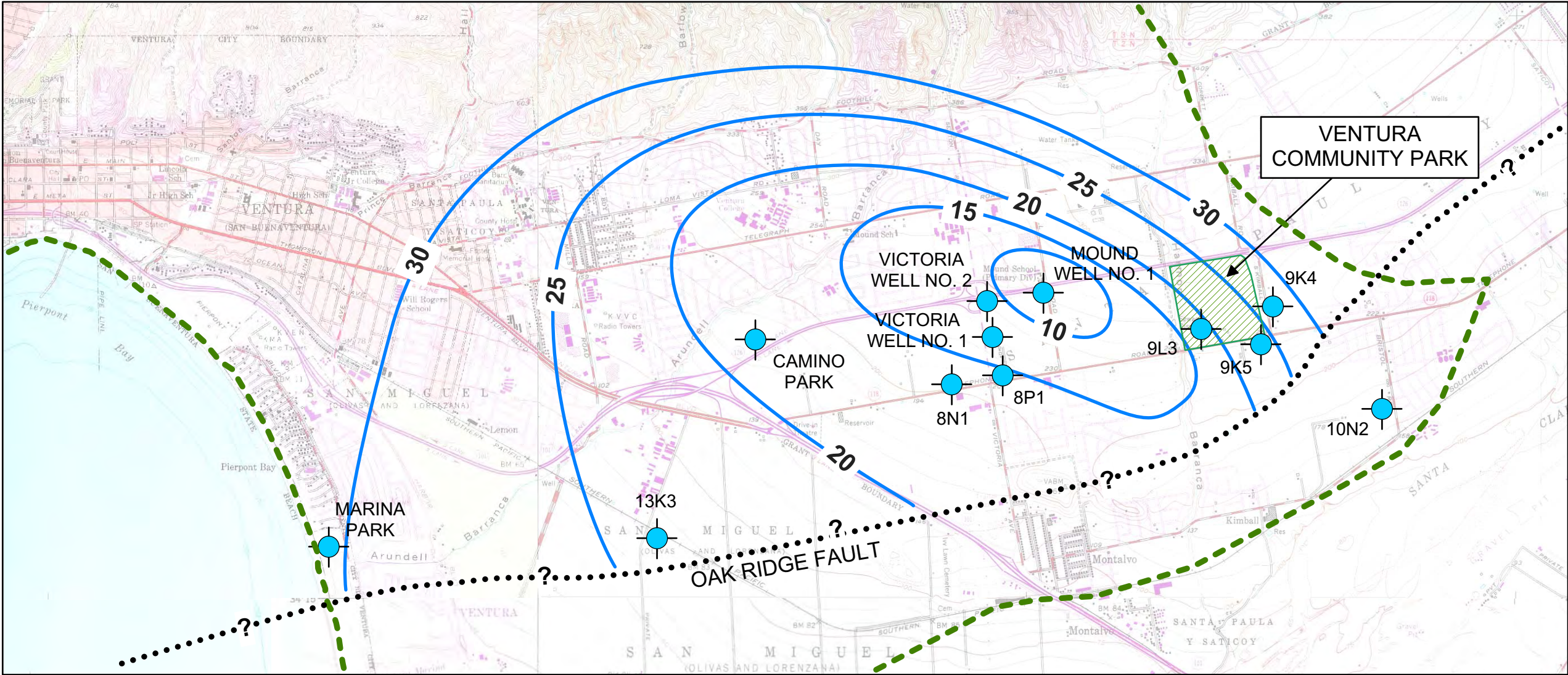
Mound Well No. 2 Siting Study

City of San Buenaventura
Ventura, California

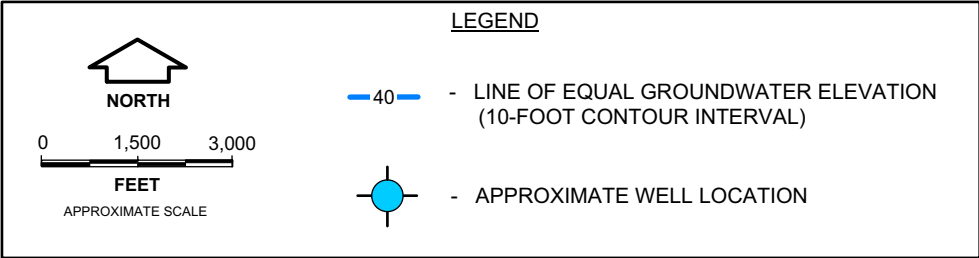
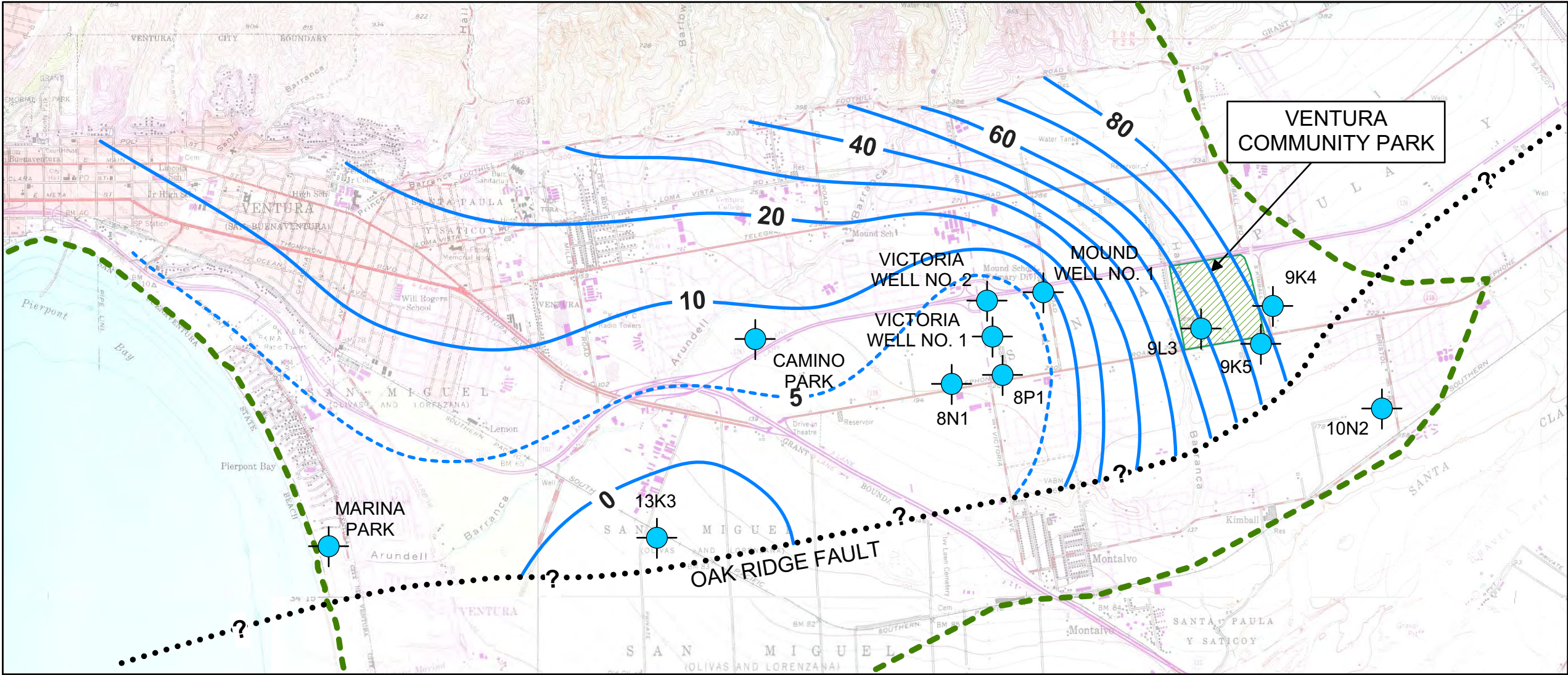


TRILINEAR DIAGRAM OF MAJOR ANIONS AND CATIONS
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California

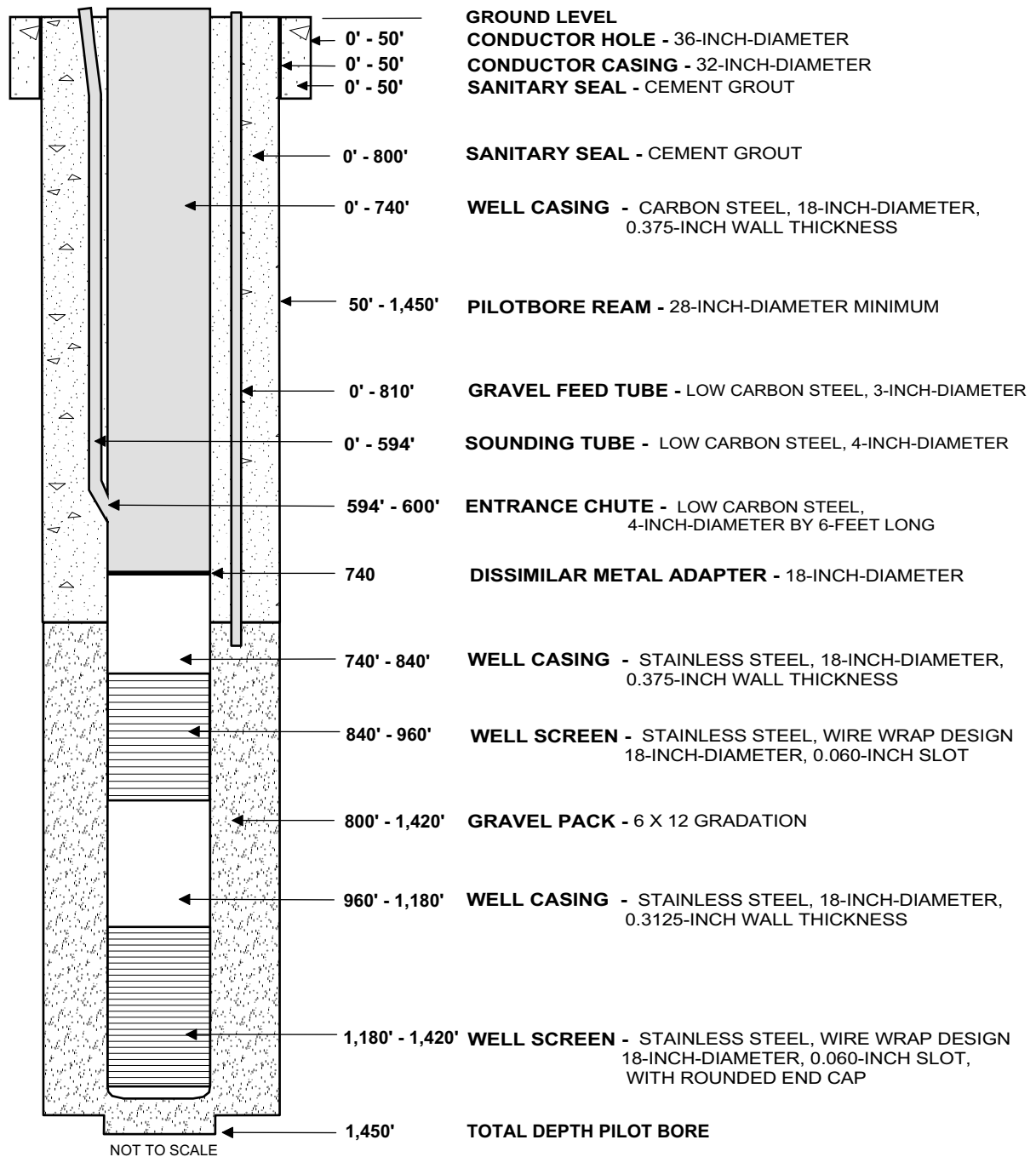




**UPPER AQUIFER GROUNDWATER ELEVATION
CONTOUR MAP - DECEMBER 2008**
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California



**LOWER AQUIFER GROUNDWATER ELEVATION
CONTOUR MAP - DECEMBER 2008**
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California



PRELIMINARY WELL DESIGN DRAWING
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California

APPENDIX A
SUMMARY OF MONITORING WELL
INSTALLATION ACTIVITIES

CONSTRUCTION OPERATIONS

DRILLING OPERATIONS

Mobilization and Drilling

On September 8, 2008 Bradley mobilized a direct-circulation rotary drilling rig and all necessary support equipment to be used throughout drilling operations to be conducted under Ventura County Well Drilling Permit No. 6874 (a copy is provided in Appendix B). Construction support equipment included a drilling fluid reconditioning tank that was equipped with a shale shaker screen and de-sanding cones which are used to separate the drill cuttings from the clay based drilling fluid. Bradley commenced drilling of an 8.75-inch-diameter pilot hole on September 9, 2008 and completed the hole to a depth of approximately 1,500 feet bgs on September 24, 2008. The pilot hole was drilled on a 12-hour-per-day work schedule. During excavation of the pilot hole Hopkins collected drill cuttings, compiled a lithologic log, and monitored drill rig activities. Subsequently, an electric log of the borehole was recorded to provide additional data for final well design. The final well design was determined by Hopkins through correlation of the lithological log and geophysical survey.

The borehole was reamed to approximately 10.625-inch-diameter in order to accommodate two well casings and was conducted in one pass on September 25, 2008 to a depth of 545 feet bgs. Prior to installing casing into the well bore, Bradley conducted a clean-out/wiper run with an 8.75-inch-diameter bit to a total depth of approximately 950 feet bgs.

Lithological Log

During pilot hole drilling Hopkins generated a drilling log that documents drilling penetration rates and rig activity, and provides a technical description of the formation materials observed in the drill cuttings. A copy of the lithological log is provided in Appendix B. Drill cuttings collected during borehole excavation were utilized during development of the final well design, assembled in cuttings trays, labeled, and archived for future reference.

Geophysical Log

On September 24, 2008 Welenco Inc. of Bakersfield, California conducted downhole geophysical surveys of the pilot hole. The geophysical surveys were comprised of electrical measurements of the formation materials and include a record of 16-inch and 64-inch normal resistivity, single point resistivity, spontaneous potential and natural gamma readings. A copy of the geophysical log is provided in Appendix B.

WELL CONSTRUCTION OPERATIONS

Method

Monitoring well MW-1 was completed to a total depth of 950 feet bgs and screened from approximately 890 to 950 feet bgs. Monitoring well MW-2 was completed to a total depth of 510 feet bgs and screened from approximately 480 to 510 feet bgs. A construction record drawing of the wells is shown on Plate 2.

Well construction commenced by installing a 2-inch temporary construction tremie pipe to the total depth of the borehole to install construction materials in the annular space of the borehole. The PVC well casing and screen assemblages were placed inside the borehole in one continuous operation, and were centered in the hole using metal band centralizers attached to the casing at the top and bottom of the screen section. A select gravel pack envelope with a 6 x 12 gradation was placed in the annular space around each well screen followed by a bentonite seal and inert filler gravel. Inert filler gravel was placed between the top of the lower seal and the bottom of the upper screen interval, and from the top of the upper seal and the bottom of the sanitary seal. The sanitary seal was emplaced from the top of the filler gravel to ground surface.

Materials

Well Casing and Screen

The well casing materials used for construction of monitoring well MW-1 consist of 2.5-inch-diameter schedule 80 PVC blank casing and 2.5-inch-diameter schedule 80 PVC screen with a 0.050-inch horizontal slot openings. MW-2 was constructed using 2-inch-diameter schedule 40 PVC blank casing and 2-inch-diameter Schedule 40 PVC screen with 0.050-inch horizontal slot openings.

Select Gravel Pack

After completing well casing installation, a select gravel pack material with a 6 x 12 gradation was slowly added using a construction tremie pipe and steel hopper suspended from the drill rig's hoist line. The well bore annulus was filled with select gravel pack material between the depths of approximately 956 and 884 feet bgs, and from 511 to 450 feet bgs (see Plate 2).

Inert Fill Material

Inert fill material consisting of 3/8-inch pea gravel was selected to fill intervals between the screened sections. Pea gravel was slowly added to the annular space by free fall from a steel hopper suspended by the drill rig's hoist line. The well bore annulus was filled with inert fill between the depths of approximately 879 and 511 feet bgs and from 445 to 105 feet bgs.

Zone Isolation Seals

Zone isolation seals were placed between the top of the gravel pack intervals and the overlying inert fill zones. These seals were emplaced to isolate individual water-bearing zones and allow discrete water level measurements and water quality sampling. Seal placement was accomplished using the construction tremie pipe and assisted with water injection. The isolation seals consist of 3/8-inch-diameter bentonite chips which were emplaced dry and later hydrated. Isolation seals were placed between the depths of approximately 884 and 879 feet bgs and from 455 to 450 feet bgs.

Surface Seal

On October 2, 2008 the surface well seal was placed between ground surface and a depth of approximately 105 feet. Seal construction used approximately 12 yards of a 10.5-sack sand slurry grout mixture. The seal was pumped into place using a 2-inch-diameter construction tremie pipe and a positive displacement pneumatic grout pump.

WELL DEVELOPMENT AND SAMPLING OPERATIONS

Mechanical Development

On October 2, 2008 Bradley began mechanical development using a dart bailer to remove a combined total of 5 gallons of thick drilling fluid, silt, and sand from the bottom of the wells. After bailing was completed, each well was air-jetted for a total of 8 hours. Air-jetting was performed by attaching a 1/2-inch-diameter hose to a compressor and installing it into the wells to a depth of 380 feet below top of casing (btoc). During the removal of the thick drilling fluids by air-jetting, the well casings were flushed from ground surface with approximately 500 gallons of fresh water.

On October 9 and 10, 2008, Hopkins staff conducted additional air-jetting of monitoring wells MW-1 and MW-2. Air-jetting was performed by attaching a 1/2-inch-diameter hose to a compressor and deploying it into the wells to a depth of approximately 500 feet btoc. Prior to and after development operations, water levels in each of monitoring well were measured and recorded. Throughout the development of the two monitoring wells, periodic readings of temperature, pH, and electrical conductivity were also measured and recorded. These parameters, along with visual estimation of fluid clarity were used to determine when well development was complete. Approximately 3,600 gallons of water were removed from MW-1, and approximately 14,370 gallons of water were removed from MW-2 throughout the combined development procedure. Records of well development are included in this appendix as Exhibit A1- Well Development and Purge Reports.

Well Sampling

On October 29, 2008 Hopkins staff installed a 2-inch-diameter electric submersible Grundfos pump that was subsequently utilized to purge the wells and collect representative water quality sample. During purge operations periodic measurements of temperature, pH, turbidity, and electrical conductivity were monitored to determine when well purging was complete and sufficient to allow sample collection. Records of pre-sample well purging are included in this appendix (see Exhibit A1). Measured parameters were allowed to stabilize before collection of the groundwater samples. Water samples were submitted to Fruit Growers Laboratories on October 29, 2008 for Title-22 drinking water analyses. Copies of the water quality test results are included in Appendix C.

Water Level Measurements

Water levels in MW-1 and MW-2 were measured periodically between October 3, 2008 and November 6, 2008. Subsequent measurements were collected by the County between December 2008 and March 2009 as part of its routine regional monitoring program. Water levels in MW-1 and MW-2 are shown in Table A1 – Groundwater Elevation Data.

Table A1 – Groundwater Elevation Data

MEASUREMENT DATE	GROUNDWATER ELEVATION (FEET-MSL)	
	MW-1	MW-2
10/3/2008	90.00	168.05
10/6/2008	52.00	117.40
10/9/2008	51.25	125.23
10/10/2008	50.55	53.80
10/13/2008	48.25	57.65
10/17/2008	49.07	56.67
10/29/2008	50.36	45.34
10/30/2008	48.72	46.11
10/31/2008	49.64	44.66
12/2/2008 ¹	62.20	90.20
1/27/2009 ¹	63.50	87.00
3/23/2009 ¹	64.50	89.70

¹- VENTURA COUNTY MEASUREMENTS

Exhibit A1
Well Development and Purge Reports

HOPKINS

GROUNDWATER
CONSULTANTS, INC.
THE WATER RESOURCE SPECIALISTS



PUMP TEST FIELD REPORT

Project Name Mound #2 - Development

Project Number 01-009-04B

Date 10-3-08

Well Name/Number MW-2

Type of Production Testing

Sampler RM

Static Water Level 73.95 ToC

Shallow 2" dia. well
Top of casing 2.4 ft ↑ G.L.

Time	Time Since Test Began (minutes)	Water Level (feet)	Drawdown (feet)	Specific Capacity (gpm/ft)	Meter Reading ()	Production Rate (gpm)	Sand Test Results (ppm)	Well Head Pressure (psi)	Comments
0838	1	pH=7.2	EC=4.82	TDS=7max					Depth of airline = 295'
0850	13					2.5			HANNA
0857		pH=8.2	EC=5.82	TDS=7max					
0928		pH=8.0	EC=5.70	TDS=7max					T=75°F
0945		pH=7.9	EC=5.74	TDS=7max			T=74.8°F		
1000		pH=7.6	EC=5.61	TDS=7max		13.0	T=71.2°F		Depth of airline = 380'
1015		pH=7.7	EC=3.38	TDS= max			T=70.8°F		Sediment settling
1030		pH=7.6	EC=3.27	TDS= max			T=71.2°F		on bottom of cup.
1045		pH=7.4	EC=3.25	TDS= max			T=71.9°F		
1100		pH=7.6	EC=3.24	TDS= max			T=71.9°F		
1115		pH=7.4	EC=3.11	TDS= max		12.1	T=71.2°F		
1130		pH=7.6	EC=3.35	TDS= max			T=72.1°F		
1200		pH=7.5	EC=3.34	TDS= max			T=72.3°F		
1230		pH=7.9	EC=3.49	TDS= max			T=72.5°F		Hanna ↑
1240		pH=6.9	EC=3.25 (21000)	TDS= NA			T=74.9°F		Hydac
		pH=7.8	EC=3.56	Turb=7max			T=74.3°F		Horiba U-10
13:00		7.7	3.55	"		13-15	73°F		Fluorine
13:28		7.5	3.63	"		13-15	73		Surge III minor GP sand
13:42		7.4	4.21				73		very dirty
13:50	Chloride		50/50 ~	45mg/l	100%	105mg/l			
13:58		7.6	3.62				72.1		
14:28		7.7	4.56				71.9°F		Hanna

PAGE ____ OF ____

Project Name	Mound #2 - Development
Project Number	01-009-04B
Date	10-3-08
Well Name/Number	MW-1
Type of Production Testing	
Sampler	R.M.

Deep 2.5" well
Top of casing 2.5' above G.L.
er Level 152.0

PAGE OF

1 of 2

AIRLIFT DEVELOPMENT FIELD REPORT

Project Name Mound Test Well
 Project Number 01-009-04B
 Date 10-10-08
 Well Name/Number MW-1, MW-2
 Observer R. Medina

Date	Time	Perforated Interval Being Developed	Pass Number	Time Since Airlift Began (minutes)	Sand Measurement (ml)	Apparent Production Rate (gpm)	Comments
10-10	0800	pH	EC	TDS	Temp		DTW = 188.2' MW-2
	0841	7.9	1.53	1,100	73.0	15.8	DTW = 191.45' MW-1
	0919	7.6	2.83	max	74.3		Airline set @ 300 ft in MW-1
	0944	7.7	2.37	1,670	73.0		Slight sulfur odor @ discharge
	1000	7.9	2.21	—	74.2		
	1015	8.0	1.95	1,426	72.9		
	1038	7.7	1.81	1,328	73.0		10:49 dropped airline to 400 ft.
	1059	7.9	1.78	1,278	72.9	27.7	
MW-1	1109	7.8	1.74	1,270	75.2		
	1123	7.7	1.74	1,265	74.5		
	1130	7.8	1.73	1,257	73.6		
	1140	8.0	1.70	1,240	71.7		pulled airline
							Standard DTW = 191.9 ft btoC (MW-2)
	1215	7.9	2.53	1,907	72.5	5	Set airline @ 300' in MW-2
	1221	7.9	5.87	max	72.3	5	increase in suspended solids, highly turbid
	1230	7.9	6.19	max	71.0	5	with silt and fine sand settling
	1245	8.0	6.19	max	70.8	5	
MW-2	1250	8.0	6.14	max	73.3	15.0	Airline set @ 400'. Highly turbid.
	1315	7.8	6.08	max	75.0		clearing up
	1330	8.0	6.01	max	74.7		surge
	1345	7.8	5.99	max	70.1	20.0	increased water clarity.
	1400	8.1	5.92	max	72.4	15.0	surge, highly turbid
	1415	8.1	5.86	max	70.1		

Project Name	Mound Test Well
Project Number	01-009-04B
Date	10-10-08
Well Name/Number	MW-2
Observer	K. Meding

[illegible]

APPENDIX B
WELL CONSTRUCTION PERMIT
AND WELL LOGS



County of Ventura WELL PERMIT

800 South Victoria Avenue; Ventura, CA 93009

	Property Owner	Driller	Registered Inspector
Name	City of San Buenaventura	Bradley & Sons, Inc.	Curtis J. Hopkins
Address	P.O. Box 99 Ventura, CA 93002	3625 South Highland Del Rey, CA 93616	P.O. Box 3596 Ventura, CA 93006
Telephone	(805) 658-4756	(559) 441-1401	(805) 653-5306

Type of Work	Monitoring Well – New (1)	Sealing Zone	2	Main Use	Monitoring
SWN (Partial)	02N22W09L	ID	NA	APN	087-0-030-060
Fee	\$320.00	Receipt No.	6912	Prep by:	Barbara Council
Well Location	Telegraph Rd near Kimball RD.	Proposed	Well Depth-1500 ft Bore Diameter-10 5/8 in		
Basin	Mound	Construction	Perforations Top-540 ft Bottom-1000 ft		

Conditions

- Permit issue and expiration dates are as follows:

Issue Date: 09/05/08

Expiration Date: 03/05/09

The Contractor shall keep a copy of this approved permit at the work site.

- Property Owner, Driller ("Contractor") and Registered Inspector shall comply with all provisions of Ventura County Well Ordinance No. 4184, and all applicable State of California and local regulations pertaining to well construction, repair, modification and destruction.

- Work shall be performed by a licensed water well contractor (C-57), who must also be registered with the Watershed Protection District, Groundwater Section ("District").

- All work shall be inspected by a licensed Civil Engineer, Registered Geologist or Certified Engineering Geologist, who must also be registered with the Watershed Protection District, Groundwater Section ("District").

- Contractor shall retain all drilling fluids and groundwater discharges within the drilling site, unless an NPDES permit has been obtained from the California Regional Water Quality Control Board, Los Angeles Region. The NPDES permit shall be obtained prior to drilling operations.

- Sealing Requirements:

- Bentonite grout, bentonite clay chips, neat cement or cement grout annular sealing material shall be placed **from a depth of 100 feet to 2 feet below ground surface.**

Bentonite clay products used for sealing material must be specifically prepared for such use. Used drilling mud and/or cuttings from drilling shall not be used in sealing material. Bentonite chips shall be hydrated while placed and shall be placed by means of a grout pipe positioned within 2 feet of the base of the sealing zone. If the sealing depth is 10 feet or less bentonite chips may be placed by free-fall method.

All bentonite grout and cement sealing material shall be placed by means of a grout pipe positioned within 2 feet of the base of the sealing zone. For Sealing Zones 1 and 2, if the standing water level in the casing is below the base of the sealing zone and the sealing depth is 25 feet or less, a grout pipe will not be necessary.

- Diameter of the well bore shall be a minimum of 4 inches larger than the outside diameter of the casing for the full depth of seal.

- Neat cement or cement grout annular sealing material shall be placed **from a depth of 2 feet to ground surface.**



County of Ventura
WELL PERMIT

800 South Victoria Avenue; Ventura, CA 93009

7. Post Requirements:

a. Inspection Documents: Within 30 days after work is completed, Registered Inspector shall submit inspection documents consisting of a Registered Inspector's Well Sealing Report, a well location map, and a detailed well log for each monitoring well. The well log shall show lithology, well construction details, and any available information relating to water quality and quantity. Mail to County of Ventura – Watershed Protection District, Groundwater Section ("District"); Attn Barbara Council (Re: MW Documents); 800 South Victoria Avenue; Ventura, Ca. 93009-1600. **Failure to submit documents within 30 days will preclude Property Owner and Registered Inspector from obtaining future permits until report is received and may result in the issuance of a Notice of Non-Compliance.**

b. Monitoring Well Destruction: **Upon completion of the monitoring program, Property Owner shall take immediate action to obtain a separate well destruction permit and destroy all monitoring wells on this permit.**

8. The information contained in the Application for Well Permit becomes a part of this permit.

Manager, Groundwater Section

Rick Vergara

Date

9/5/08

TRIPLICATE
Owner's Copy

Page 1 of 2

Owner's Well No. MW #1

Date Work Began 9/25/2008, Ended 10/3/2008

Local Permit Agency CITY OF VENTURA

Permit No. 6874

Permit Date 9/5/2008

STATE OF CALIFORNIA
WELL COMPLETION REPORT

Refer to Instruction Pamphlet

No. **EO080290**

DWR USE ONLY DO NOT FILL IN

STATE WELL NO./STATION NO.

LATITUDE

LONGITUDE

APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ☒ VERTICAL ☐ HORIZONTAL ☐ ANGLE (SPECIFY)			DRILLING METHOD	FLUID
DEPTH FROM SURFACE			ROTARY	
Ft. to Ft.			DESCRIPTION	
			Describe material, grain, size, color, etc.	
0	20		TOP SOIL/MEDIUM/FINE SANDS, CLAY	
20	40		MEDIUM/FINE SANDS, CLAY	
40	80		MEDIUM/FINE SAND/SOME SMALL GRAVEL, CLAY	
80	100		GRAVEL ROCK, SOME CLAY	
100	120		MEDIUM/FINE SANDS, CLAY	
120	140		CLAY	
140	160		MEDIUM/FINE/COARSE SANDS, SOME CLAY, SMALL GRAVEL	
160	180		GRAVEL, MEDIUM/FINE/COARSE SANDS, CLAY	
180	200		SOME MEDIUM/FINE/COARSE SANDS, CLAY	
200	260		SOME MEDIUM/FINE SAND, CLAY	
260	300		MEDIUM/FINE SANDS, CLAY	
300	360		MEDIUM/FINE SANDS, SOME COARSE, GRAVEL, CLAY	
360	380		MEDIUM/FINE SANDS, SOME CLAY	
380	400		CLAY WITH MEDIUM/FINE SANDS	
400	440		SANDY CLAY	
440	460		CLAY	
460	500		CONSOLIDATED SANDS/SOME CLAY	
500	520		CONSOLIDATED SANDS	
520	580		CONSOLIDATED SANDS/SOME CLAY	
580	600		CONSOLIDATED SAND/SOME CLAY/SOME GRAVEL	
600	680		CONSOLIDATED SAND/SOME CLAY	
680	700		MEDIUM/COARSE CONSOLIDATED SAND	
700	800		SOME GRAVEL, SOME CLAY	
800	820		CONSOLIDATED SAND/SOME CLAY	
820			SANDY CLAY, MEDIUM/COARSE	

TOTAL DEPTH OF BORING 1480 (Feet)

TOTAL DEPTH OF COMPLETED WELL 1480 (Feet)

WELL OWNER

Name HOPKINS GROUNDWATER CON

Mailing Address P.O. BOX 3596

VENTURA

CA

93006

CITY

STATE

ZIP

WELL LOCATION

Address TELEGRAPH ROAD NEAR KIMBALL RD

City VENTURA CA

County VENTURA

APN Book 087

Page 030

Parcel 060

Township 02 N

Range 22 W

Section 09

Latitude

DEG. MIN. SEC.

LOCATION SKETCH

NORTH

WEST

EAST

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

DEG. MIN. SEC.

ACTIVITY (✓)

☒ NEW WELL
☐ MODIFICATION/REPAIR
 ☐ Deepen
 ☐ Other (Specify)

☐ DESTROY (Describe Procedures and Materials Under "GEOLOGIC LOG")

PLANNED USES (✓)

☐ WATER SUPPLY
 ☐ Domestic ☐ Public
 ☐ Irrigation ☐ Industrial

☒ MONITORING
☐ TEST WELL

☐ CATHODIC PROTECTION

☐ HEAT EXCHANGE

☐ DIRECT PUSH

☐ INJECTION

☐ VAPOR EXTRACTION

☐ SPARGING

☐ REMEDIATION

☐ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER (Ft.) BELOW SURFACE

DEPTH OF STATIC

WATER LEVEL (Ft.) & DATE MEASURED

ESTIMATED YIELD (GPM) & TEST TYPE AIR LIFT

TEST LENGTH 4 (Hrs.) TOTAL DRAWDOWN (Ft.)

May not be representative of a well's long-term yield.

DEPTH FROM SURFACE		BORE - HOLE DIA. (Inches)	CASING (S)							
			TYPE (✓)				MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)
Ft	to	Ft	BLANK	SCREEN	CONDUCTOR	FILL PIPE				
							DRILLED W	Rock bit		
950	890	10 5/8"		✓			PVC	2 1/2"	SCH 80	0.050
890	0	10 5/8"	✓				PVC	2 1/2"	SCH 80	
0	480	8 3/4"	✓				PVC	2"	SCH 80	
480	510	8 3/4"		✓			PVC	2"	SCH 80	0.050

DEPTH FROM SURFACE		ANNULAR MATERIAL			
Ft. to Ft.		TYPE			
		CE- MENT (✓)	BEN- TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)
884	879		✓		
445	440		✓		
105	0				CEMENT

ATTACHMENTS (✓)

- Geologic Log
- Well Construction Diagram
- Geophysical Log(s)
- Soil/Water Chemical Analysis
- Other

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME BRADLEY & SONS

(PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

3625 S. HIGHLAND

ADDRESS

DEL REY

CITY

CA

STATE

93616

ZIP

Signed

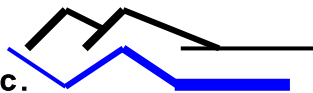
WELL DRILLER/AUTHORIZED REPRESENTATIVE

10/08/08

DATE SIGNED

414178

C-57 LICENSE NUMBER



DRILLING LOG

CLIENT: City of Ventura JOB NO.: 01-009-04B
 CLIENT PROJECT MANAGER: Karen Whitehouse
 WELL NO.: Nested Observation Well WELL FIELD: Mound Basin
 COUNTY: Ventura STATE: California
 LOCATION: Ventura Community Park
 TOWNSHIP: 2N RANGE: 22W SECTION: 9
 ELEVATION: 240 ft-MSL (estimated) TOTAL DEPTH: 1,500 ft
 SPUD DATE: 9/9/2008 FINAL DATE: 10/2/2008
 DRILLING COMPANY: Bradley & Sons
 PUSHER: Rod Bradley
 GEOLOGIST: Curtis Hopkins
 LOGGING PERSONNEL: R. Medina, L. Hengehold
 SERVICES PERFORMED: Lithological Logging
 DATE BEGAN: 9/9/2008 DATE COMPLETED: 10/2/2008
 INTERVAL LOGGED: 0 – 1,500 ft FOOTAGE: 1,500 ft
 REMARKS:

HOLE SIZE		
Depths (feet)		Diameter
0	545	10 5/8"
545	1,500	8 3/4"

LEGEND OF ABBREVIATIONS			
Letters	Description	Letters	Description
Vis	Total Depth	RPM	Revolutions
Wt	Bottom of Casing		per minute
WI	Water loss		
Wc	Wall Cake		
Sc	Sand Content		
KD	Kelly Down		

CASING RECORD					
Depths	Item	Depths	Item	Depths	Item
0-480	2" Sch. 40 PVC blank				
480-510	2" Sch. 40 PVC, 0.030 slot				
0-890	2.5" Sch. 80 PVC blank				
890-950	2.5" Sch. 80 PVC, 0.030 slot				

LEGEND OF LITHOLOGICAL SYMBOLS

	CLAY		SILT		SAND		GRAVEL

pg. 1

DRILL RATE (feet/hour) 0-----100 300	DEPTH (feet) 0-----100 300	LITHOLOGY (percent) 0-----100	SAND GRAIN SIZE (percent)				LITHOLOGICAL DESCRIPTION AND REMARKS	RIG ACTIVITY AND MUD PROPERTIES
			COARSE	MEDIUM	FINE	VERY FINE		
								MUD PROPERTIES VIS = 36 WT = 9.5 rig chatter 17:12 @ 318'
			90	20			SAND, coarse, subangular-angular, with fine gravel. Gravel is angular	
			20	70	10		increase in silt content	
	350			40	60		SANDY CLAY; light olive brown [2.5Y 5/3]	9-10-08 ↓ Began drilling at 0840
			10	60	30		SAND, fine to medium	rig chatter @ 346'
				40	60		CLAYEY SAND; light olive brown [2.5Y 5/3]	Bit change @ 350'
					90	10	SANDY CLAY; olive gray [5Y 4/2]	
	400			60	40			MUD PROPERTIES VIS = 37 Sec WT = 8.9 lbs/gal
							CLAY; olive gray [5Y 4/2]	
	450			75	20		CLAYEY SAND; light olive brown [2.5Y 5/3]	9-11-08 Repair 16:00 Cable
			20	60	20		SAND; light olive gray [5Y 5/2] Coarse to fine, angular to sub round occasional well rounded, moderate sorted	Chatter 465' end 477'
No. 6 Blade				50	40	10	SAND: coarser fine gravel	9-12-08 Reported 480-500 1 hour to drill 500'-520' 50 min on site 517'
No. 7 Long Tooth 2-Cone				40	50	10	SAND: as above, less coarse becoming finer	11:28 KO 520 Drill 11:43 Chatter
	500			30	60	10		530' up RPM 12:42 clay RPM 5m smooth 526-
			10	50	40			13:20 KO 540' Drill 540' 13:29 Bounce
NEW Long Tooth 2-Cone	550			10	40	50	CLAYEY SAND; light olive brown [2.5Y 5/3] medium-grained.	14:16 KO 560' end
				20	40	40	increase in coarse material	9-16-08 Began @ 560' with new bit @ 10:40

pg. 3

DRILL RATE (feet/hour) 0-----100 300	DEPTH (feet) 0-----100 300	LITHOLOGY (percent) 0-----100	SAND GRAIN SIZE (percent)				LITHOLOGICAL DESCRIPTION AND REMARKS	RIG ACTIVITY AND MUD PROPERTIES
			COARSE	MEDIUM	FINE	VERY FINE		
				70	30		Sand; fine to medium, subangular sandy CLAY; light olive brown [2.5Y 5/2]	MUD PROPERTIES WL=26.4 VIS=34.3 WC=5/32"
				60	40			9-18-08 Z changed out bit Began @ 10:50, 92.0'
				80	20			MUD PROPERTIES WL=14.6 VIS=93 WT=10.2 WC=7/32"
				40	60			MUD PROPERTIES WL=20.3 VIS=46 WC=3/32" KD 15:13 Drill 15:29
	950			30	70			10:50 16:02 Chatter/Bounce KD 16:02 Circ check Mud Pump 16:30 Drill 1,000'
				5	65	30	CLAY with Sand Grayish Olive [10Y 4/2] Soft, smooth, soulable clay interbedded with Sand fine to medium occ. coarse Increasing Sand with occasional Shell Fragments SAND with Clay: Grayish olive [10Y 4/2] Predom. medium to fine grain moderate to well sorted	16:59 KD 1,040 17:15 Drill
				10	60	30		-Bit Binding/Bouncing 17:53 KD 1,060 18:06 Drill
				30	50	20		Mud Properties WT 10.2 WL 7.5min 7.2" Vis 39 Sec KD 18:40 1,080
				10	70	20		
				5	70	25		
	1050			25	75		clayey SAND, dark grayish brown [2.5Y 4/2], fine	
				20	80			
				60	40			9-19-08 Z Began @ 0720 MUD PROPERTIES WL=29.3 VIS=39.5 WC=7/32" WT=10.2 SC=2.1
				10	60	30		MUD PROPERTIES WL=31.6 VIS=37.5 WC=1/4" SC=2.1
				10	90			
	1100			30	70		CLAY: olive gray [5Y 4/2] Sandy CLAY: olive gray [5Y 4/2]. SAND; fine to medium, subangular medium to coarse	10:30 chatter, binding @ 1180'
				30	70			9-23-08 Z WL=21.0 VIS=37.5 WT=10.3 WC=7/32" SC=1.5/
				10	70	20		
				10	70	20		
	1150			10	70	20		
				10	70	20		
	1200			10	70	20		

welenco

5201 Woodmere Drive, Bakersfield, CA 93313-- www.welenco.com--(800) 445-9914
California Contractor's License No. 722373

ELECTRIC - GAMMA RAY - TEMPERATURE LOG

FILING NO.	COMPANY <u>Bradley & Sons</u>	
	WELL <u>Ventura Community Park Monitoring Well #1</u>	
	FIELD <u>Ventura</u>	
	STATE <u>California</u>	COUNTY <u>Ventura</u>
JOB NO. 9634	LOCATION: <u>Kimball Rd. And Telephone Rd.</u>	
	OTHER SERVICES:	
SEC: <u>9</u> TWP: <u>2N</u> RGE: <u>22W</u> LAT.: <u>34° 16' 8.0"</u> LONG.: <u>119° 11' 39.6"</u> MERIDIAN.: <u>San Bernardino</u>		
Permanent Datum: <u>Ground Level</u> , Elev. <u>242</u> Ft. Elev.: K.B. _____ Ft.		
Log Measured From: <u>Ground Level</u> , <u>0</u> Ft. Above Perm. Datum D.F. _____ Ft.		
Drilling Measured From: <u>Ground Level</u> G.L. <u>242</u> Ft.		
Run	<u>One</u>	
Date	<u>Sep. 24, 2008</u>	
Depth-Driller	<u>1500</u> Ft	Ft
Depth-Logger	<u>1495</u> Ft	Ft
Top Logged Interval	<u>10</u> Ft	Ft
Btm. Logged Interval	<u>1495</u> Ft	Ft
Casing-Driller	<u>0</u> In @ <u>0</u> Ft	In @ Ft
Casing-Logger	<u>0</u> In @ <u>0</u> Ft	In @ Ft
Bit Size	<u>8.75</u> In	In
Time On Bottom	<u>1545</u>	
Type Fluid In Hole	<u>Bentonite</u>	
Density	Viscosity	
pH	Fluid Loss	ml
Source of Sample	<u>Line</u>	
Rm @ Measured Temp.	<u>5.9</u> @ <u>75</u> °F	@ °F
Rmf @ Measured Temp.	<u>4.7</u> @ <u>75</u> °F	@ °F
Rmc @ Measured Temp.	@ °F	@ °F
Source Rmf	Rmc	<u>meas.</u>
Rm @ BHT	@ °F	@ °F
Time Since Circulation	<u>2</u> Hr	Hr
Max. Rec. Temp.	°F	°F
Van No.	Location	<u>L-18</u> <u>SVG</u>
Recorded By	<u>Mitch Tullis</u>	
Witnessed By		

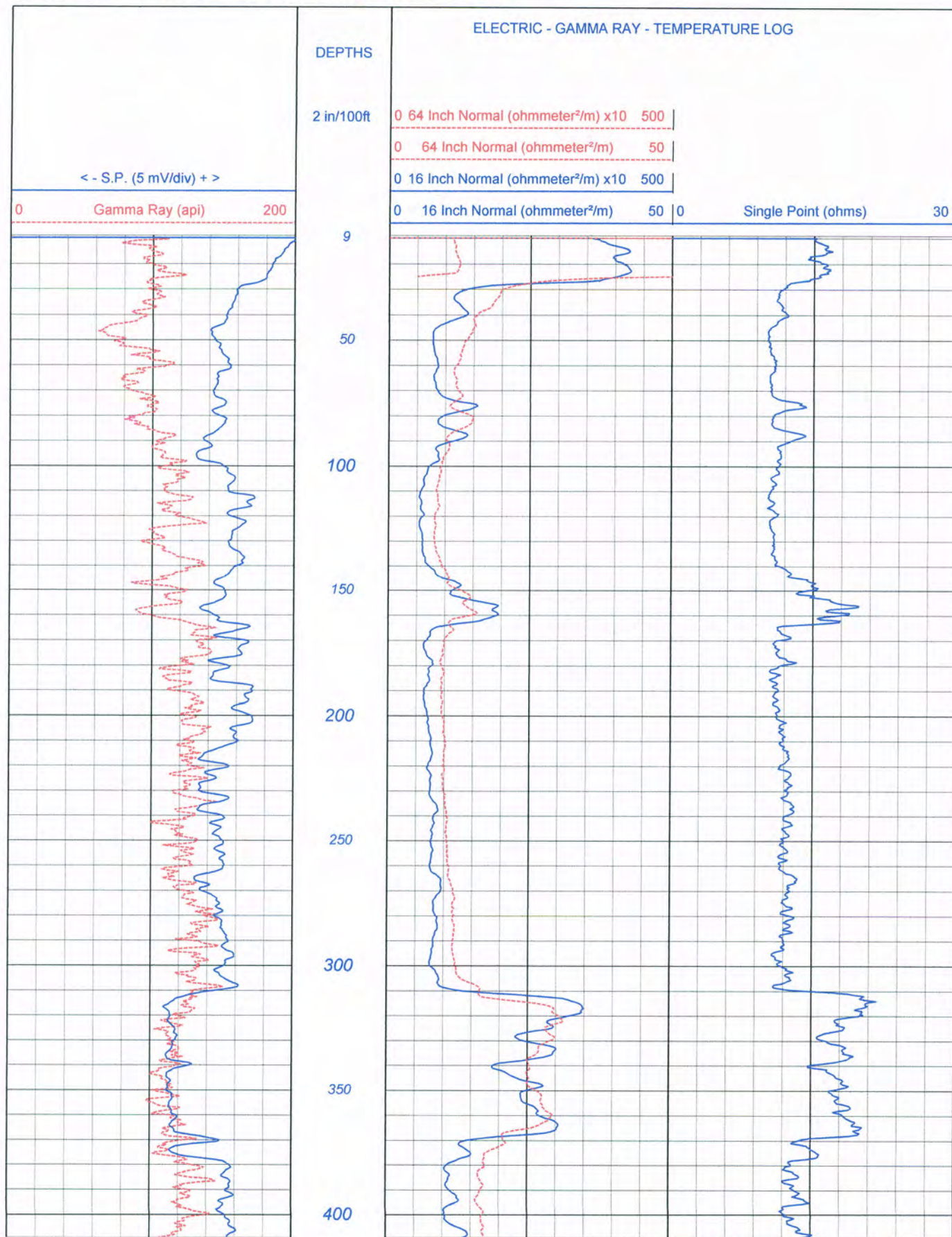
Miscellaneous Information

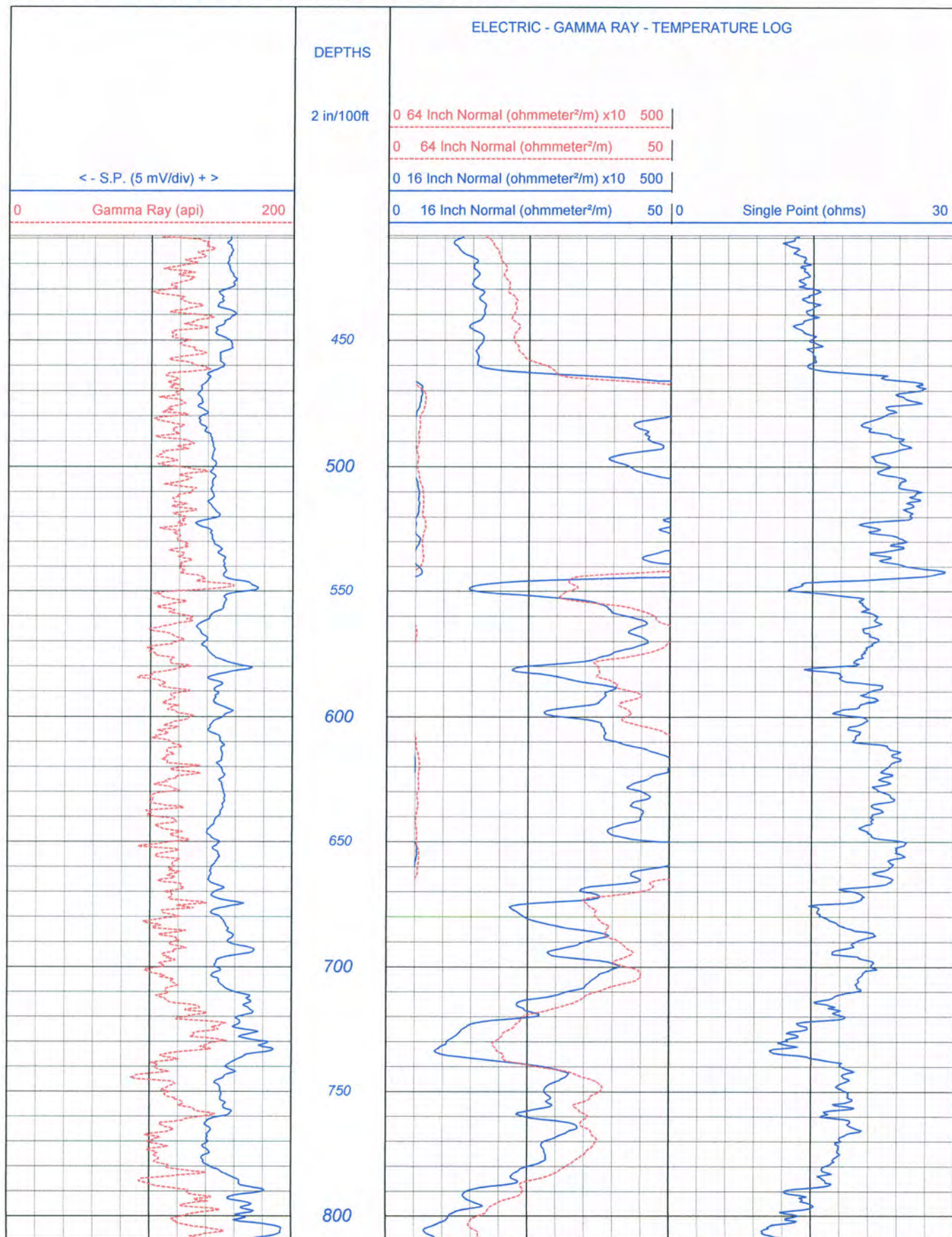
A recreational GPS accurate to +/- 45 feet set for Datum NAD27 was used to calculate Latitude, Longitude & Elevation values. The Section, Township, and Range then determined using the TRS program (TRS accuracy is not guaranteed). The TRS program converts Latitude and Longitude to Section, Township, and Range. The NOTICE at the bottom of this heading also applies.

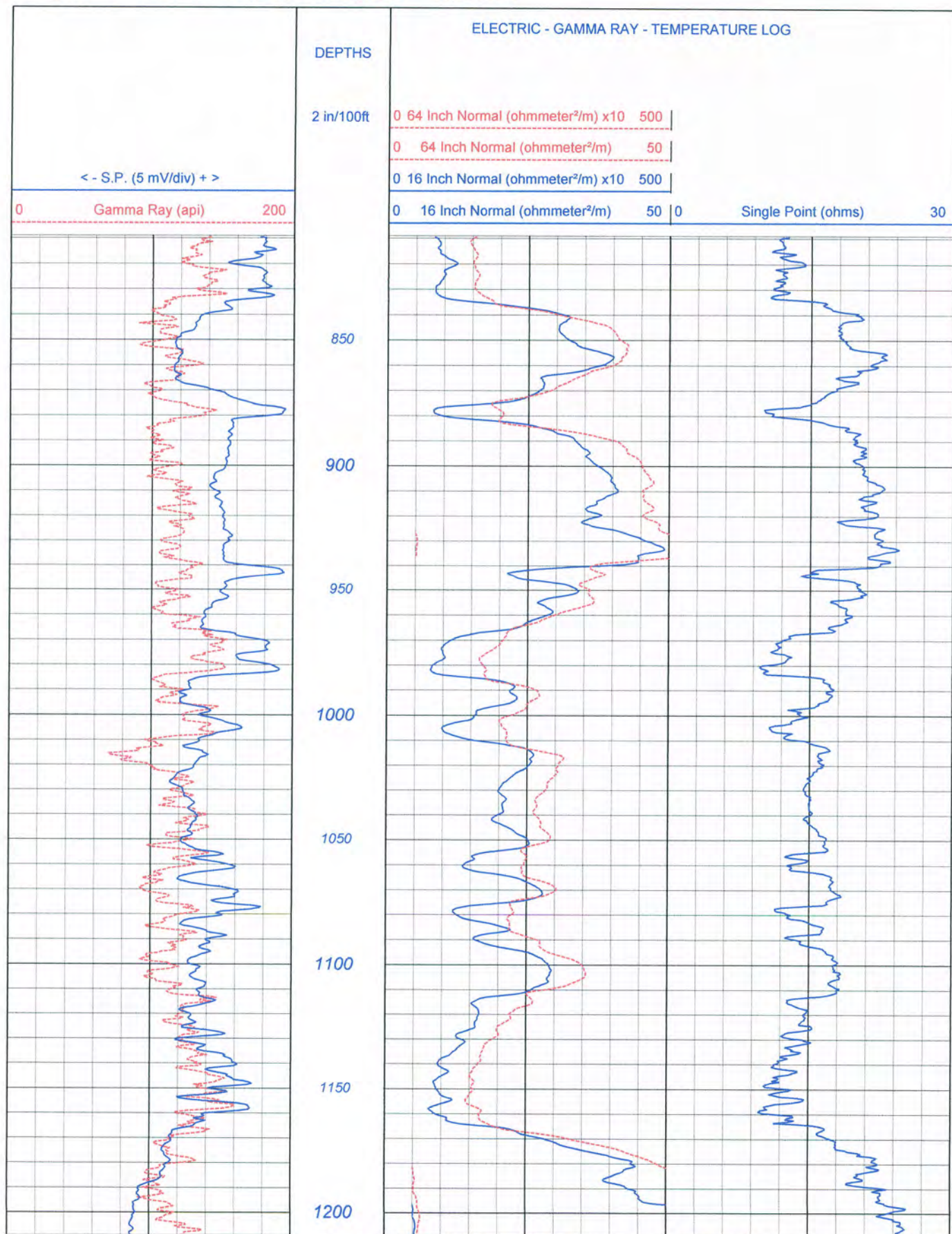
NOTICE

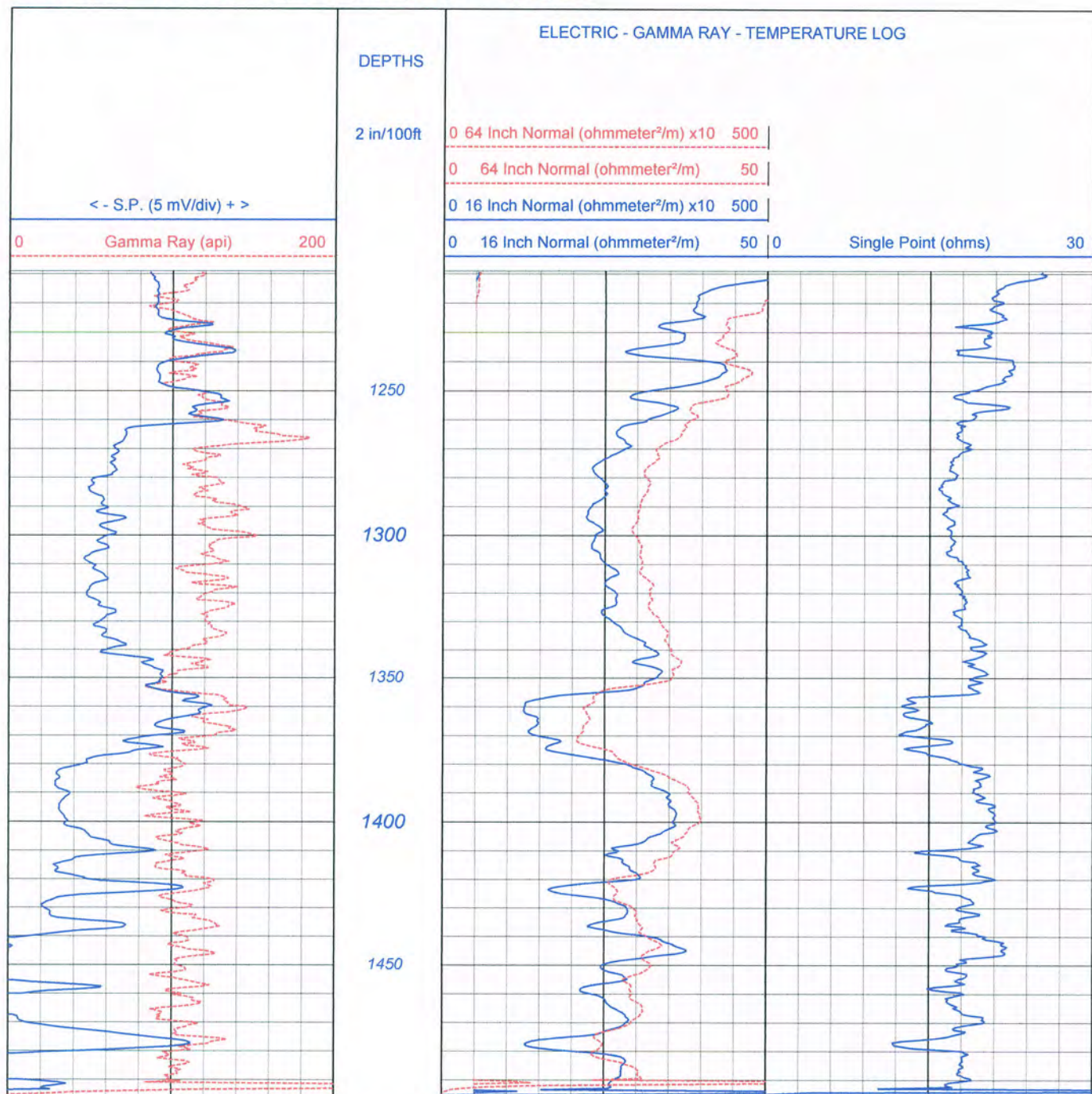
All interpretations are opinions based on inferences from electrical and other measurements and we do not guarantee the accuracy or correctness of any verbal or written interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages or expenses incurred or sustained by anyone resulting from any interpretation made by one of our officers, agents or employees. These interpretations are also subject to our General Terms and Conditions as set out in our current Price Schedule.

welenco, inc. September 24, 2008









Log Page No. 4 of 4 Pages

Page Length: 1209 - 1496 Feet (287 Feet)

Time: 04:32:34 PM

Date: Sep 24, 2008

APPENDIX C
WATER QUALITY TEST RESULTS



Analytical Chemists
November 25, 2008

Hopkins Groundwater Consultants Inc.
Attn: Curtis Hopkins
P. O. Box 3596
Ventura, CA 93006-3596

Lab ID : SP 0811920
Customer : 2-20807

Laboratory Report

Introduction: This report package contains total of 42 pages divided into 3 sections:

Case Narrative (5 pages) : An overview of the work performed at FGL.
Sample Results (15 pages) : Results for each sample submitted.
Quality Control (22 pages) : Supporting Quality Control (QC) results.

Case Narrative

This Case Narrative pertains to the following samples:

Sample Description	Date Sampled	Date Received	FGL Lab ID #	Matrix
Travel Blank	10/29/2008	10/29/2008	SP 0811920-000	LBW
MW-1	10/29/2008	10/29/2008	SP 0811920-001	MW
MW-2	10/29/2008	10/29/2008	SP 0811920-002	MW

Sampling and Receipt Information: All samples were received, prepared and analyzed within the method specified holding except those as listed in the table below. The holding time for pH is listed as immediate. Logistically this is very difficult to obtain. FGL policy is to analyze all samples requiring pH on the same day of receipt at the laboratory. If this presents any problem please call.

Lab ID	Analyte/Method	Required Holding Time	Actual Holding Time
SP 0811920-001	Aggressiveness Index	15	424.8 Minutes
SP 0811920-001	Langlier Index (20°C)	15	424.8 Minutes
SP 0811920-001	pH	15	424.8 Minutes
SP 0811920-002	Aggressiveness Index	15	225 Minutes
SP 0811920-002	Langlier Index (20°C)	15	225 Minutes
SP 0811920-002	pH	15	225 Minutes

All samples arrived on ice. All samples were checked for pH if acid or base preservation is required (except for VOAs). For details of sample receipt information, please see the attached Chain of Custody and Condition Upon Receipt Form.

November 25, 2008
Hopkins Groundwater Consultants Inc.

Lab ID : SP 0811920
 Customer : 2-20807

Quality Control: All samples were prepared and analyzed according to the following tables:

Inorganic - Metals QC

200.7	11/04/2008:213524 All analysis quality controls are within established criteria.
	10/30/2008:213263 All analysis quality controls are within established criteria.
	10/30/2008:211035 All preparation quality controls are within established criteria.
	11/04/2008:211203 All preparation quality controls are within established criteria.
200.8	10/30/2008:213304 All analysis quality controls are within established criteria.
	10/31/2008:213382 All analysis quality controls are within established criteria.
	10/30/2008:211034 All preparation quality controls are within established criteria, except: The following note applies to Silver: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
	10/31/2008:211114 All preparation quality controls are within established criteria.
245.1	11/10/2008:213819 All analysis quality controls are within established criteria.
7470	11/10/2008:211493 All preparation quality controls are within established criteria.

Organic QC

504	11/08/2008:211453 All preparation quality controls are within established criteria.
504.1	11/08/2008:213773 All analysis quality controls are within established criteria.
505	11/08/2008:213715 All analysis quality controls are within established criteria.
	11/07/2008:211416 All preparation quality controls are within established criteria.
507	11/04/2008:213422 All analysis quality controls are within established criteria, except: The following note applies to Triphenylphosphate: 360 CCV above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.
	10/30/2008:211073 All preparation quality controls are within established criteria, except: The following note applies to Alachlor, Atrazine, Bromacil, Butachlor, Cyanazine, Diazinon, Dimethoate, Metolachlor, Metribuzin, Molinate, EPN/Triphen:
	310 LCS above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.
515.3	11/12/2008:213878 All analysis quality controls are within established criteria, except:

Organic QC

515.3	The following note applies to 2,4-D, Bentazon, Dalapon, Dicamba, Picloram: 360 CCV above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.
	11/11/2008:211532 All preparation quality controls are within established criteria.
524.2	11/07/2008:213765 All analysis quality controls are within established criteria, except: The following note applies to Trichlorofluoromethane F-11, Ethyl tert-Butyl Ether, Isopropyl Ether, Methyl tert-Butyl Ether, TAME: 360 CCV above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.
	11/07/2008:211457 All preparation quality controls are within established criteria, except: The following note applies to Freon-11, Ethyl tert-Butyl Ether, Isopropyl Ether, Methyl tert-Butyl Ether (MTBE), TAME: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery.
	The following note applies to 1,1-Dichloropropene, 1,2-Dichloroethane (EDC), Benzene, TAME: 410 Relative Percent Difference (RPD) not within Maximum Allowable Value (MAV). Data was accepted based on the LCS or CCV recovery.
525.2	11/18/2008:214217 All analysis quality controls are within established criteria.
	11/08/2008:211454 All preparation quality controls are within established criteria.
531.1	11/14/2008:214011 All analysis quality controls are within established criteria, except: The following note applies to 3-Hydroxycarbofuran, Carbofuran, Methomyl, Oxamyl: 360 CCV above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.
	11/13/2008:211656 All preparation quality controls are within established criteria.
547	10/30/2008:213230 All analysis quality controls are within established criteria, except: The following note applies to Glyphosate: 360 CCV above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.
	10/29/2008:211024 All preparation quality controls are within established criteria.
548.1	11/10/2008:213817 All analysis quality controls are within established criteria.
	11/05/2008:211320 All preparation quality controls are within established criteria.
549	11/05/2008:211299 All preparation quality controls are within established criteria.
549.2	11/14/2008:214038 All analysis quality controls are within established criteria, except: The following note applies to Diquat Dibromide: 360 CCV above Acceptance Range (AR). Samples which were non detect for this analyte were accepted.
632	11/13/2008:213944 All analysis quality controls are within established criteria.
	11/03/2008:211179 All preparation quality controls are within established criteria.

November 25, 2008
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Lab ID : SP 0811920
 Customer : 2-20807

Radio QC

900.0	11/07/2008:213778 All analysis quality controls are within established criteria.
	11/10/2008:213808 All analysis quality controls are within established criteria.
	11/04/2008:211241 All preparation quality controls are within established criteria.
908.0	11/21/2008:214468 All analysis quality controls are within established criteria.
	11/18/2008:211822 All preparation quality controls are within established criteria, except: The following note applies to Uranium: 435 Sample matrix may be affecting this analyte. Data was accepted based on the LCS or CCV recovery. The following note applies to Uranium: 410 Relative Percent Difference (RPD) not within Maximum Allowable Value (MAV). Data was accepted based on the LCS or CCV recovery.
SM7110C	11/13/2008:214029 All analysis quality controls are within established criteria.
	11/10/2008:211492 All preparation quality controls are within established criteria.

Inorganic - Wet Chemistry QC

2120B	10/29/2008:213242 All analysis quality controls are within established criteria.
	10/29/2008:211032 All preparation quality controls are within established criteria.
2130B	10/29/2008:213295 All analysis quality controls are within established criteria.
	10/29/2008:211083 All preparation quality controls are within established criteria.
2150B	10/29/2008:211082 All preparation quality controls are within established criteria.
2320B	10/31/2008:213360 All analysis quality controls are within established criteria.
	11/04/2008:213550 All analysis quality controls are within established criteria.
	10/31/2008:211126 All preparation quality controls are within established criteria.
	11/04/2008:211243 All preparation quality controls are within established criteria.
2510B	10/30/2008:213253 All analysis quality controls are within established criteria.
	10/31/2008:213309 All analysis quality controls are within established criteria.
	10/30/2008:211039 All preparation quality controls are within established criteria.

November 25, 2008
Hopkins Groundwater Consultants Inc.

Lab ID : SP 0811920
Customer : 2-20807

Inorganic - Wet Chemistry QC

2510B	10/31/2008:211095 All preparation quality controls are within established criteria.
2540 C,E	10/30/2008:211074 All preparation quality controls are within established criteria.
	11/03/2008:211192 All preparation quality controls are within established criteria.
300.0	10/30/2008:213262 All analysis quality controls are within established criteria.
	10/30/2008:213329 All analysis quality controls are within established criteria.
	10/29/2008:211030 All preparation quality controls are within established criteria.
	10/30/2008:211108 All preparation quality controls are within established criteria.
4500CNCE	11/06/2008:213640 All analysis quality controls are within established criteria.
4500-H B	10/29/2008:211020 All preparation quality controls are within established criteria.
4500HB	10/29/2008:213240 All analysis quality controls are within established criteria.
4500S D	10/30/2008:211065 All preparation quality controls are within established criteria.
5540C	10/29/2008:213241 All analysis quality controls are within established criteria.
	10/29/2008:211031 All preparation quality controls are within established criteria.
9010B	11/03/2008:211169 All preparation quality controls are within established criteria.

Certification:: I certify that this data package is in compliance with NELAC standards, both technically and for completeness, except for any conditions listed above. Release of the data contained in this data package is authorized by the Laboratory Director or his designee, as verified by the following electronic signature.

KD:DMB

Approved By **Kelly A. Dunnahoo, B.S.**



Digitally signed by Kelly A. Dunnahoo, B.S.
Title: Laboratory Director
Date: 2008-11-25



Analytical Chemists
November 25, 2008

Lab ID : SP 0811920-000
Customer ID : 2-20807

Hopkins Groundwater Consultants Inc.

Attn: Curtis Hopkins
P. O. Box 3596
Ventura, CA 93006-3596

Sampled On : October 29, 2008-10:30
Sampled By : Not Available
Received On : October 29, 2008-12:45
Matrix : Lab. Blank Water

Description : Travel Blank
Project : Title 22 - Job # 01-009-04B

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 504.1 ^{VOA:1}								
1,3-Dibromopropane	92.3	70-130	%		504	11/08/08:211453	504.1	11/08/08:213773
DBCP	ND	0.01	ug/L		504	11/08/08:211453	504.1	11/08/08:213773
EDB	ND	0.02	ug/L		504	11/08/08:211453	504.1	11/08/08:213773
EPA 525.2 ^{AGT:1}								
Perylene-d12	95.9	70-130	%		525.2	11/08/08:211454	525.2	11/18/08:214217
Benzo(a)pyrene	ND	0.1	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
bis(2-Ethylhexyl)adipate	ND	1	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
bis(2-Ethylhexyl)phthalate	ND	3	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (AST) Amber Silanized-TFE, (P) Plastic, (VOA) VOA Preservatives: Monochloroacetic Buffer, H2SO4 pH < 2, NaOH, NaOH + Zinc Acetate, HNO3 pH < 2, HCl pH < 2


 Analytical Chemists
 November 25, 2008

 Lab ID : SP 0811920-001
 Customer ID : 2-20807
Hopkins Groundwater Consultants Inc.
 Attn: Curtis Hopkins
 P. O. Box 3596
 Ventura, CA 93006-3596

 Sampled On : October 29, 2008-10:30
 Sampled By : Not Available
 Received On : October 29, 2008-12:45
 Matrix : Monitoring Well

 Description : MW-1
 Project : Title 22 - Job # 01-009-04B
Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
General Mineral^{P:1}								
Total Hardness	465	2.5	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Calcium	122	1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Magnesium	39	1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Potassium	7	1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Sodium	205	1	mg/L		200.7	11/04/08:211203	200.7	11/04/08:213524
Total Cations	18.4	0.1	meq/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Boron	0.5	0.1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Copper	ND	10	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Iron	240	50	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Manganese	170	10	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Zinc	ND	20	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
SAR	4.1	0.1	--		200.7	10/30/08:211035	200.7	10/30/08:213263
Total Alkalinity (as CaCO3)	200	10	mg/L		2320B	10/31/08:211126	2320B	10/31/08:213360
Hydroxide	ND	10	mg/L		2320B	10/31/08:211126	2320B	10/31/08:213360
Carbonate	ND	10	mg/L		2320B	10/31/08:211126	2320B	10/31/08:213360
Bicarbonate	240	10	mg/L		2320B	10/31/08:211126	2320B	10/31/08:213360
Sulfate	630	10	mg/L		300.0	10/29/08:211030	300.0	10/30/08:213262
Chloride	86	1	mg/L		300.0	10/29/08:211030	300.0	10/30/08:213262
Nitrate	ND	0.4	mg/L		300.0	10/29/08:211030	300.0	10/30/08:213262
Nitrite as N	ND	0.1	mg/L		300.0	10/29/08:211030	300.0	10/30/08:213262
Fluoride	0.4	0.1	mg/L		300.0	10/29/08:211030	300.0	10/30/08:213262
Total Anions	19.5	0.1	meq/L		2320B	10/31/08:211126	2320B	10/31/08:213360
pH	7.3	--	units		4500-H B	10/29/08:211020	4500HB	10/29/08:213240
Specific Conductance	1730	1	umhos/cm		2510B	10/30/08:211039	2510B	10/30/08:213253
Total Dissolved Solids	1220	20	mg/L		2540 C,E	10/30/08:211074	2540C	10/31/08:213307
MBAS (foaming agents)	ND	0.1	mg/L		5540C	10/29/08:211031	5540C	10/29/08:213241
Aggressiveness Index	12.1	1	--		4500-H B	10/29/08:211020	4500HB	10/29/08:213240
Langlier Index (20°C)	0.2	1	--		4500-H B	10/29/08:211020	4500HB	10/29/08:213240
Metals, Total^{P:15}								
Aluminum	ND	10	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Antimony	ND	1	ug/L		200.8	10/31/08:211114	200.8	10/31/08:213382
Arsenic	ND	2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Barium	19.7	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Beryllium	ND	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Cadmium	ND	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304

November 25, 2008
Description : MW-1

Lab ID : SP 0811920-001
Customer ID : 2-20807

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total ^{P:15}								
Chromium	2	1	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Lead	ND	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Mercury	ND	0.02	ug/L		7470	11/10/08:211493	245.1	11/10/08:213819
Nickel	ND	1	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Selenium	3	2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Silver	ND	1	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Thallium	ND	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Vanadium	ND	2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Wet Chemistry ^{AGT:1}								
Color	10	5	units		2120B	10/29/08:211032	2120B	10/29/08:213242
Cyanide, Total	ND	0.005	mg/L		9010B	11/03/08:211169	4500CNCE	11/06/08:213640
Odor	ND	1	TON		2150B	10/29/08:211082	2150B	10/29/08:213293
Sulfide, Total	ND	0.1	mg/L		4500S D	10/30/08:211065	4500SD	10/30/08:213274
Turbidity	0.7	0.2	NTU		2130B	10/29/08:211083	2130B	10/29/08:213295

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (AST) Amber Silanized-TFE, (P) Plastic, (VOA) VOA Preservatives: Monochloroacetic Buffer, H2SO4 pH < 2, NaOH, NaOH + Zinc Acetate, HNO3 pH < 2, HCl pH < 2


 Analytical Chemists
 November 25, 2008

 Lab ID : SP 0811920-001
 Customer ID : 2-20807
Hopkins Groundwater Consultants Inc.
 Attn: Curtis Hopkins
 P. O. Box 3596
 Ventura, CA 93006-3596

 Sampled On : October 29, 2008-10:30
 Sampled By : Not Available
 Received On : October 29, 2008-12:45
 Matrix : Monitoring Well

 Description : MW-1
 Project : Title 22 - Job # 01-009-04B
Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 504.1 ^{VOA:1}								
1,3-Dibromopropane	86.9	70-130	%		504	11/08/08:211453	504.1	11/08/08:213773
DBCP	ND	0.01	ug/L		504	11/08/08:211453	504.1	11/08/08:213773
EDB	ND	0.02	ug/L		504	11/08/08:211453	504.1	11/08/08:213773
EPA 505 ^{VOA:1}								
Alachlor	ND	0.2	ug/L		505	11/07/08:211416	505	11/08/08:213715
Aldrin	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Chlordane	ND	0.1	ug/L		505	11/07/08:211416	505	11/08/08:213715
Dieldrin	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Endrin	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Heptachlor	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Heptachlor Epoxide	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Hexachlorobenzene	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Hexachlorocyclopentadiene	ND	0.1	ug/L		505	11/07/08:211416	505	11/08/08:213715
Lindane	ND	0.05	ug/L		505	11/07/08:211416	505	11/08/08:213715
Methoxychlor	ND	0.1	ug/L		505	11/07/08:211416	505	11/08/08:213715
Toxaphene	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1016	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1221	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1232	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1242	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1248	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1254	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1260	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
EPA 507 ^{AGT:1}								
Triphenylphosphate	109	70-130	%		507	10/30/08:211073	507	11/04/08:213422
Alachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Atrazine	ND	0.5	ug/L		507	10/30/08:211073	507	11/04/08:213422
Bromacil	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Butachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Diazinon	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Dimethoate	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Metolachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Metribuzin	ND	0.5	ug/L		507	10/30/08:211073	507	11/04/08:213422
Molinate	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Prometryne	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422

November 25, 2008
Description : MW-1

Lab ID : SP 0811920-001
Customer ID : 2-20807

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 507^{AGT:1}								
Propachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Simazine	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Thiobencarb	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Cyanazine	ND	0.5	ug/L		507	10/30/08:211073	507	11/04/08:213422
EPA 515^{AGT:1}								
2,4-DCAA	96.3	70-130	%		515.3	11/11/08:211532	515.3	11/12/08:213878
Bentazon	ND	2	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
2,4-D	ND	2	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Dalapon	ND	10	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Dicamba	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Dinoseb	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Pentachlorophenol	ND	0.2	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Picloram	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
2,4,5-TP (Silvex)	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
2,4,5-T	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
EPA 524.2^{VOA:13}								
4-Bromofluorobenzene	107	70-130	%		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichlorobenzene-d4	104	70-130	%		524.2	11/07/08:211457	524.2	11/07/08:213765
Benzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromochloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromodichloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromoform	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromomethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
n-Butylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
sec-Butylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
tert-Butylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Carbon Tetrachloride	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
tert-Butanol	ND	2	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chloroform	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
2-Chlorotoluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
4-Chlorotoluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dibromochloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dibromomethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765

November 25, 2008
Description : MW-1

Lab ID : SP 0811920-001
Customer ID : 2-20807

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 524.2 ^{VOA:T3}								
1,3-Dichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,4-Dichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dichlorodifluoromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1-Dichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1-Dichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
cis-1,2-Dichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
trans-1,2-Dichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,3-Dichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dichloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
2,2-Dichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
cis-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
trans-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,3-Dichloropropene (Total)	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
cis-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
trans-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Di-isopropyl ether (DIPE)	ND	3	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Ethyl Benzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Ethyl tert-Butyl Ether (ETBE)	ND	3	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Hexachlorobutadiene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Isopropylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
p-Isopropyltoluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Methyl tert-Butyl Ether (MTBE)	ND	1	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Naphthalene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
n-Propylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Styrene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Tert-amyl-methyl Ether (TAME)	ND	3	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Tetrachloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Toluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,3-Trichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,4-Trichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,1-Trichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,2-Trichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Trichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765

November 25, 2008
Description : MW-1

Lab ID : SP 0811920-001
Customer ID : 2-20807

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 524.2 ^{VOA:T3}								
Trichlorofluoromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,3-Trichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,2-Trichlorotrifluoroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,4-Trimethylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,3,5-Trimethylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Vinyl Chloride	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes m,p	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes o	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes (Total)	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes m,p	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes o	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Total Trihalomethanes	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
EPA 525.2 ^{AGT:1}								
Perylene-d12	96.4	70-130	%		525.2	11/08/08:211454	525.2	11/18/08:214217
Benzo(a)pyrene	ND	0.1	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
bis(2-Ethylhexyl)adipate	ND	1	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
bis(2-Ethylhexyl)phthalate	ND	3	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
EPA 531.1 ^{AGT:18}								
Aldicarb	ND	3	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Aldicarb Sulfone	ND	2	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Aldicarb Sulfoxide	ND	3	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Carbaryl	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Carbofuran	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
3-Hydroxycarbofuran	ND	10	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Methomyl	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Oxamyl	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
EPA 547 ^{AGT:1}								
Glyphosate	ND	20	ug/L		547	10/29/08:211024	547	10/30/08:213230
EPA 548.1 ^{AGT:1}								
Endothall	ND	40	ug/L		548.1	11/05/08:211320	548.1	11/10/08:213817
EPA 549 ^{AST:1}								
Diquat	ND	2	ug/L		549	11/05/08:211299	549.2	11/14/08:214038
EPA 632 ^{AGT:1}								
Diuron	ND	0.1	ug/L		632	11/03/08:211179	632	11/13/08:213944

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (AST) Amber Silanized-TFE, (P) Plastic, (VOA) VOA Preservatives: Monochloroacetic Buffer, H2SO4 pH < 2, NaOH, NaOH + Zinc Acetate, HNO3 pH < 2, HCl pH < 2



Analytical Chemists
November 25, 2008

Lab ID : SP 0811920-001
Customer ID : 2-20807

Hopkins Groundwater Consultants Inc.

Attn: Curtis Hopkins
P. O. Box 3596
Ventura, CA 93006-3596

Sampled On : October 29, 2008-10:30
Sampled By : Not Available
Received On : October 29, 2008-12:45
Matrix : Monitoring Well

Description : MW-1
Project : Title 22 - Job # 01-009-04B

Sample Result - Radio

Constituent	Result $\pm$ Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry ^{P:1}								
Gross Alpha	1.65 $\pm$ 3.39	5.03	pCi/L	15/5	900.0	11/04/08:211241	900.0	11/10/08:213808
Gross Beta	1.35 $\pm$ 3.09	4.63	pCi/L	50	900.0	11/04/08:211241	900.0	11/10/08:213808

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (AST) Amber Silanized-TFE, (P) Plastic, (VOA) VOA Preservatives: Monochloroacetic Buffer, H₂SO₄ pH < 2, NaOH, NaOH + Zinc Acetate, HNO₃ pH < 2, HCl pH < 2

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
AV = (Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:

Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
Uranium is less than or equal to 20 pCi/L
Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.


 Analytical Chemists
 November 25, 2008

 Lab ID : SP 0811920-002
 Customer ID : 2-20807
Hopkins Groundwater Consultants Inc.
 Attn: Curtis Hopkins
 P. O. Box 3596
 Ventura, CA 93006-3596

 Sampled On : October 29, 2008-13:50
 Sampled By : Not Available
 Received On : October 29, 2008-12:45
 Matrix : Monitoring Well

 Description : MW-2
 Project : Title 22 - Job # 01-009-04B
Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
General Mineral^{P:1}								
Total Hardness	2190	2.5	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Calcium	485	1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Magnesium	237	1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Potassium	20	1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Sodium	1170	5	mg/L		200.7	11/04/08:211203	200.7	11/04/08:213524
Total Cations	95.1	0.1	meq/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Boron	1.1	0.1	mg/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Copper	ND	10	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Iron	1510	50	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Manganese	520	10	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
Zinc	ND	20	ug/L		200.7	10/30/08:211035	200.7	10/30/08:213263
SAR	10.9	0.1	--		200.7	10/30/08:211035	200.7	10/30/08:213263
Total Alkalinity (as CaCO3)	170	25	mg/L		2320B	11/04/08:211243	2320B	11/04/08:213550
Hydroxide	ND	25	mg/L		2320B	11/04/08:211243	2320B	11/04/08:213550
Carbonate	ND	25	mg/L		2320B	11/04/08:211243	2320B	11/04/08:213550
Bicarbonate	207	25	mg/L		2320B	11/04/08:211243	2320B	11/04/08:213550
Sulfate	4040	50	mg/L		300.0	10/30/08:211108	300.0	10/30/08:213329
Chloride	165	2	mg/L		300.0	10/30/08:211108	300.0	10/30/08:213329
Nitrate	81.9	0.8	mg/L		300.0	10/30/08:211108	300.0	10/30/08:213329
Nitrite as N	ND	0.2	mg/L		300.0	10/30/08:211108	300.0	10/30/08:213329
Fluoride	0.6	0.2	mg/L		300.0	10/30/08:211108	300.0	10/30/08:213329
Total Anions	93.5	0.1	meq/L		2320B	11/04/08:211243	2320B	11/04/08:213550
pH	6.9	--	units		4500-H B	10/29/08:211020	4500HB	10/29/08:213240
Specific Conductance	7240	1	umhos/cm		2510B	10/31/08:211095	2510B	10/31/08:213309
Total Dissolved Solids	6600	20	mg/L		2540 C,E	11/03/08:211192	2540C	11/04/08:213457
MBAS (foaming agents)	ND	0.1	mg/L		5540C	10/29/08:211031	5540C	10/29/08:213241
Aggressiveness Index	12.2	1	--		4500-H B	10/29/08:211020	4500HB	10/29/08:213240
Langlier Index (20°C)	0.2	1	--		4500-H B	10/29/08:211020	4500HB	10/29/08:213240
Metals, Total^{P:15}								
Aluminum	1080	20	ug/L		200.8	10/31/08:211114	200.8	10/31/08:213382
Antimony	ND	1	ug/L		200.8	10/31/08:211114	200.8	10/31/08:213382
Arsenic	3	2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Barium	22.6	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Beryllium	ND	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Cadmium	0.4	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304

November 25, 2008
Description : MW-2

Lab ID : SP 0811920-002
Customer ID : 2-20807

Sample Result - Inorganic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Metals, Total ^{P:15}								
Chromium	5	1	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Lead	3.0	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Mercury	ND	0.02	ug/L		7470	11/10/08:211493	245.1	11/10/08:213819
Nickel	7	1	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Selenium	45	2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Silver	ND	1	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Thallium	ND	0.2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Vanadium	3	2	ug/L		200.8	10/30/08:211034	200.8	10/30/08:213304
Wet Chemistry ^{AGT:1}								
Color	10	5	units		2120B	10/29/08:211032	2120B	10/29/08:213242
Cyanide, Total	ND	0.005	mg/L		9010B	11/03/08:211169	4500CNCE	11/06/08:213640
Odor	ND	1	TON		2150B	10/29/08:211082	2150B	10/29/08:213293
Sulfide, Total	ND	0.1	mg/L		4500S D	10/30/08:211065	4500SD	10/30/08:213274
Turbidity	18.1	0.2	NTU		2130B	10/29/08:211083	2130B	10/29/08:213295

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (AST) Amber Silanized-TFE, (P) Plastic, (VOA) VOA Preservatives: Monochloroacetic Buffer, H2SO4 pH < 2, NaOH, NaOH + Zinc Acetate, HNO3 pH < 2, HCl pH < 2


 Analytical Chemists
 November 25, 2008

 Lab ID : SP 0811920-002
 Customer ID : 2-20807
Hopkins Groundwater Consultants Inc.
 Attn: Curtis Hopkins
 P. O. Box 3596
 Ventura, CA 93006-3596

 Sampled On : October 29, 2008-13:50
 Sampled By : Not Available
 Received On : October 29, 2008-12:45
 Matrix : Monitoring Well

 Description : MW-2
 Project : Title 22 - Job # 01-009-04B
Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 504.1 ^{VOA:1}								
1,3-Dibromopropane	85.2	70-130	%		504	11/08/08:211453	504.1	11/08/08:213773
DBCP	ND	0.01	ug/L		504	11/08/08:211453	504.1	11/08/08:213773
EDB	ND	0.02	ug/L		504	11/08/08:211453	504.1	11/08/08:213773
EPA 505 ^{VOA:1}								
Alachlor	ND	0.2	ug/L		505	11/07/08:211416	505	11/08/08:213715
Aldrin	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Chlordane	ND	0.1	ug/L		505	11/07/08:211416	505	11/08/08:213715
Dieldrin	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Endrin	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Heptachlor	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Heptachlor Epoxide	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Hexachlorobenzene	ND	0.01	ug/L		505	11/07/08:211416	505	11/08/08:213715
Hexachlorocyclopentadiene	ND	0.1	ug/L		505	11/07/08:211416	505	11/08/08:213715
Lindane	ND	0.05	ug/L		505	11/07/08:211416	505	11/08/08:213715
Methoxychlor	ND	0.1	ug/L		505	11/07/08:211416	505	11/08/08:213715
Toxaphene	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1016	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1221	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1232	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1242	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1248	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1254	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
PCB 1260	ND	0.5	ug/L		505	11/07/08:211416	505	11/08/08:213715
EPA 507 ^{AGT:1}								
Triphenylphosphate	122	70-130	%		507	10/30/08:211073	507	11/04/08:213422
Alachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Atrazine	ND	0.5	ug/L		507	10/30/08:211073	507	11/04/08:213422
Bromacil	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Butachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Diazinon	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Dimethoate	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Metolachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Metribuzin	ND	0.5	ug/L		507	10/30/08:211073	507	11/04/08:213422
Molinate	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422
Prometryne	ND	2	ug/L		507	10/30/08:211073	507	11/04/08:213422

November 25, 2008
Description : MW-2

Lab ID : SP 0811920-002
Customer ID : 2-20807

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 507^{AGT:1}								
Propachlor	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Simazine	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Thiobencarb	ND	1	ug/L		507	10/30/08:211073	507	11/04/08:213422
Cyanazine	ND	0.5	ug/L		507	10/30/08:211073	507	11/04/08:213422
EPA 515^{AGT:1}								
2,4-DCAA	77.3	70-130	%		515.3	11/11/08:211532	515.3	11/12/08:213878
Bentazon	ND	2	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
2,4-D	ND	2	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Dalapon	ND	10	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Dicamba	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Dinoseb	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Pentachlorophenol	ND	0.2	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
Picloram	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
2,4,5-TP (Silvex)	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
2,4,5-T	ND	1	ug/L		515.3	11/11/08:211532	515.3	11/12/08:213878
EPA 524.2^{VOA:13}								
4-Bromofluorobenzene	105	70-130	%		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichlorobenzene-d4	98.5	70-130	%		524.2	11/07/08:211457	524.2	11/07/08:213765
Benzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromochloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromodichloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromoform	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Bromomethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
n-Butylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
sec-Butylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
tert-Butylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Carbon Tetrachloride	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
tert-Butanol	ND	2	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chloroform	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Chloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
2-Chlorotoluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
4-Chlorotoluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dibromochloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dibromomethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765

November 25, 2008
Description : MW-2

Lab ID : SP 0811920-002
Customer ID : 2-20807

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 524.2 ^{VOA:13}								
1,3-Dichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,4-Dichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dichlorodifluoromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1-Dichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1-Dichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
cis-1,2-Dichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
trans-1,2-Dichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2-Dichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,3-Dichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Dichloromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
2,2-Dichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
cis-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
trans-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,3-Dichloropropene (Total)	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
cis-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
trans-1,3-Dichloropropene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Di-isopropyl ether (DIPE)	ND	3	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Ethyl Benzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Ethyl tert-Butyl Ether (ETBE)	ND	3	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Hexachlorobutadiene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Isopropylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
p-Isopropyltoluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Methyl tert-Butyl Ether (MTBE)	ND	1	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Naphthalene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
n-Propylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Styrene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Tert-amyl-methyl Ether (TAME)	ND	3	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,1,2-Tetrachloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Tetrachloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Toluene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,3-Trichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,4-Trichlorobenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,1-Trichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,2-Trichloroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Trichloroethylene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765

November 25, 2008
Description : MW-2

Lab ID : SP 0811920-002
Customer ID : 2-20807

Sample Result - Organic

Constituent	Result	PQL	Units	Note	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
EPA 524.2 ^{VOA:T3}								
Trichlorofluoromethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,3-Trichloropropane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,1,2-Trichlorotrifluoroethane	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,2,4-Trimethylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
1,3,5-Trimethylbenzene	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Vinyl Chloride	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes m,p	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes o	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes (Total)	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes m,p	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Xylenes o	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
Total Trihalomethanes	ND	0.5	ug/L		524.2	11/07/08:211457	524.2	11/07/08:213765
EPA 525.2 ^{AGT:1}								
Perylene-d12	93.4	70-130	%		525.2	11/08/08:211454	525.2	11/18/08:214217
Benzo(a)pyrene	ND	0.1	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
bis(2-Ethylhexyl)adipate	ND	1	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
bis(2-Ethylhexyl)phthalate	ND	3	ug/L		525.2	11/08/08:211454	525.2	11/18/08:214217
EPA 531.1 ^{AGT:18}								
Aldicarb	ND	3	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Aldicarb Sulfone	ND	2	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Aldicarb Sulfoxide	ND	3	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Carbaryl	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Carbofuran	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
3-Hydroxycarbofuran	ND	10	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Methomyl	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
Oxamyl	ND	5	ug/L		531.1	11/13/08:211656	531.1	11/14/08:214011
EPA 547 ^{AGT:1}								
Glyphosate	ND	20	ug/L		547	10/29/08:211024	547	10/30/08:213230
EPA 548.1 ^{AGT:1}								
Endothall	ND	40	ug/L		548.1	11/05/08:211320	548.1	11/10/08:213817
EPA 549 ^{AST:1}								
Diquat	ND	2	ug/L		549	11/05/08:211299	549.2	11/14/08:214038
EPA 632 ^{AGT:1}								
Diuron	ND	0.1	ug/L		632	11/03/08:211179	632	11/13/08:213944

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (AST) Amber Silanized-TFE, (P) Plastic, (VOA) VOA Preservatives: Monochloroacetic Buffer, H2SO4 pH < 2, NaOH, NaOH + Zinc Acetate, HNO3 pH < 2, HCl pH < 2



Analytical Chemists
 November 25, 2008

Lab ID : SP 0811920-002
 Customer ID : 2-20807

Hopkins Groundwater Consultants Inc.

Attn: Curtis Hopkins
 P. O. Box 3596
 Ventura, CA 93006-3596

Sampled On : October 29, 2008-13:50
 Sampled By : Not Available
 Received On : October 29, 2008-12:45
 Matrix : Monitoring Well

Description : MW-2
 Project : Title 22 - Job # 01-009-04B

Sample Result - Radio

Constituent	Result $\pm$ Error	MDA	Units	MCL/AL	Sample Preparation		Sample Analysis	
					Method	Date/ID	Method	Date/ID
Radio Chemistry^{P-1}								
Gross Alpha	11.3 $\pm$ 3.11	1.64	pCi/L	15/5	SM7110C	11/10/08:211492	SM7110C	11/13/08:214029
Gross Beta	3.56 $\pm$ 6.93	9.66	pCi/L	50	900.0	11/04/08:211241	900.0	11/07/08:213778
Uranium	12.2 $\pm$ 1.82	0.278	pCi/L	20	908.0	11/18/08:211822	908.0	11/21/08:214468

ND=Non-Detected. PQL=Practical Quantitation Limit. Containers: (AGT) Amber Glass TFE-Cap, (AST) Amber Silanized-TFE, (P) Plastic, (VOA) VOA Preservatives: Monochloroacetic Buffer, H₂SO₄ pH < 2, NaOH, NaOH + Zinc Acetate, HNO₃ pH < 2, HCl pH < 2

MDA = Minimum Detectable Activity (Calculated at the 95% confidence level) = Data utilized by DHS to determine matrix interference.
 MCL / AL = Maximum Contamination Level / Action Level. Alpha's Action Level of 5 pCi/L is based on the Assigned Value (AV).
 AV = (Gross Alpha Result + (0.84 x Error)). CCR Section 64442: Drinking Water Compliance Note: Do the following
 If Gross Alpha's (AV) exceeds 5 pCi/L run Uranium. If Gross Alpha's (AV) minus Uranium exceeds 5 pCi/L run Radium 226.

Drinking Water Compliance:

Gross Alpha (AV) minus Uranium is less than or equal to 15 pCi/L
 Uranium is less than or equal to 20 pCi/L
 Radium 226 + Radium 228 is less than or equal to 5 pCi/L

Note: Samples are held for 3-6 months prior to disposal.

**Analysis of Water by Transmission Electron Microscopy
(EPA-600 R 94 134) EPA 100.2**

EMS No.	125041	Client	FGL Environmental
Sample No.	1 MW-1	Date Analyzed	11/10/2008

Fibers > 10 µm in length (chrysotile)	<u>BDL*</u>	MFL
Mass (chrysotile)	<u>0</u>	ug/L
More/Less than 5 Fibers in Sample (chrysotile)	<u>LESS</u>	
Poisson 95% Confidence Interval	<u>0 to 0.7</u>	MFL
Detection Limit	<u>0.2</u>	MFL

* BDL : Below Detection Limit; MFL: Million Fibers per Liter

Particle Size Distribution (Chrysotile)

Particle Length - Microns							
O - 0.49	0.50 - 0.99	1.00 - 1.49	1.50 - 1.99	2.00 - 2.49	2.5 - 4.99	5.00 - 9.99	10 & UP
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Particle Width - Microns							
O - .04	.05 - .09	.1 - .14	.15 - .19	.2 - .24	.25 - .49	.50 - .99	1 & UP
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Aspect Ratio L/W							
0 - 9.9	10 - 19.9	20 - 29.9	30 - 39.9	40 - 49.9	50 - 99	100 - 199	200 & UP
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

TEM 7B (1994)

**Analysis of Water by Transmission Electron Microscopy
(EPA-600 R 94 134) EPA 100.2**

EMS No. 125041

Client FGL Environmental

Sample No. 2 MW-2

Date Analyzed 11/10/2008

Fibers > 10 µm in length (chrysotile)

BDL* MFL

Mass (chrysotile)

0 ug/L

More/Less than 5 Fibers
in Sample (chrysotile)

LESS

Poisson 95% Confidence Interval

0 to 8.1 MFL

Detection Limit

2.2 MFL

* BDL : Below Detection Limit; MFL: Million Fibers per Liter

Particle Size Distribution (Chrysotile)

Particle Length - Microns

0 - 0.49	0.50 - 0.99	1.00 - 1.49	1.50 - 1.99	2.00 - 2.49	2.5 - 4.99	5.00 - 9.99	10 & UP
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

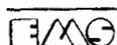
Particle Width - Microns

0 - .04	.05 - .09	.1 - .14	.15 - .19	.2 - .24	.25 - .49	.50 - .99	1 & UP
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Aspect Ratio L/W

0 - 9.9	10 - 19.9	20 - 29.9	30 - 39.9	40 - 49.9	50 - 99	100 - 199	200 & UP
<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

TEM 7B (1994)





ANALYTICAL CHEMISTS

December 1, 2008

Hopkins Groundwater Consultants, Inc.
P.O. Box 3596
Ventura, CA 93006-3596

**Subject: Dioxin-Dioxin, HR 2,3,7,8-TCDD EPA 1613B Analysis – FGL
Lab No. SP 811920**

Enclosed please find results for the above sample(s) which were received by FGL.

Please note that this analysis was performed by Test America, Inc.

Thank you for using FGL Environmental.

Sincerely,

FGL Environmental

Dawn Bavero
Customer Service Representative

Enclosure

WATER, 1613B, 2,3,7,8-TCDD

FGL Environmental

Client Sample ID: MW-1

Trace Level Organic Compounds

Lot-Sample #....: G8J310134-001 Work Order #....: K11NQ1AA Matrix.....: WATER
 Date Sampled...: 10/29/08 Date Received...: 10/31/08
 Prep Date.....: 11/05/08 Analysis Date...: 11/11/08
 Prep Batch #....: 8310342

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	6.2	pg/L	EPA-5 1613B
INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS		
13C-2,3,7,8-TCDD	56	(25 - 164)		
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
37Cl4-2,3,7,8-TCDD	78	(35 - 197)		

FGL Environmental

Client Sample ID: MW-2

Trace Level Organic Compounds

Lot-Sample #....: G8J310134-002 Work Order #....: K11NV1AA Matrix.....: WATER
 Date Sampled...: 10/29/08 Date Received...: 10/31/08
 Prep Date.....: 11/05/08 Analysis Date...: 11/11/08
 Prep Batch #....: 8310342

PARAMETER	RESULT	DETECTION LIMIT	UNITS	METHOD
2,3,7,8-TCDD	ND	5.3	pg/L	EPA-5 1613B
INTERNAL STANDARDS	PERCENT RECOVERY	RECOVERY LIMITS		
13C-2,3,7,8-TCDD	69	(25 - 164)		
SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS		
37C14-2,3,7,8-TCDD	80	(35 - 197)		

APPENDIX D
WATER QUALITY CHARACTERIZATION

Well Name:	Camino Park Monitoring Well - Deep		Well Sample		
Date:	3/11/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	129	6.44	18.9%	37.1%	<i>Calcium-Sodium Sulfate</i>
Mg	49	4.03	11.9%	23.2%	
Na	156	6.78	20.0%	39.1%	
K	4.6	0.12	0.3%	0.7%	
CO ₃ +HCO ₃	381	6.24	18.4%	37.6%	
SO ₄	401	8.35	24.6%	50.2%	
Cl	72	2.03	6.0%	12.2%	
NO ₃ -N	0				
EC	1549				
TDS	1182	33.99	100.0%		

Well Name:	Camino Park Monitoring Well - Medium		Well Sample		
Date:	3/11/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	113	5.64	18.9%	38.2%	<i>Sodium-Calcium Bicarbonate-Sulfate</i>
Mg	48	3.95	13.3%	26.7%	
Na	116	5.04	16.9%	34.2%	
K	5.2	0.13	0.4%	0.9%	
CO ₃ +HCO ₃	396	6.49	21.8%	43.3%	
SO ₄	330	6.87	23.1%	45.8%	
Cl	58	1.64	5.5%	10.9%	
NO ₃ -N	4				
EC	1347				
TDS	987	29.76	100.0%		

Well Name:	Camino Park Monitoring Well - Shallow		Well Sample		
Date:	3/11/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	485	24.70	19.4%	38.7%	<i>Calcium Sulfate</i>
Mg	245.1	20.16	15.9%	31.6%	
Na	423	18.39	14.5%	28.8%	
K	21	0.64	0.4%	0.8%	
CO ₃ +HCO ₃	688	11.28	8.9%	17.8%	
SO ₄	1991	41.44	32.6%	65.4%	
Cl	378	10.66	8.4%	16.8%	
NO ₃ -N	88				
EC	4770				
TDS	4404	127.17	100.0%		

Well Name:	Victoria Well No. 2		Well Sample		
Date:	9/8/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	186	9.28	20.8%	42.5%	<i>Calcium Sulfate</i>
Mg	63	5.18	11.6%	23.7%	
Na	167	7.26	16.3%	33.2%	
K	5.2	0.13	0.3%	0.6%	
CO ₃ +HCO ₃	370	6.06	13.6%	26.6%	
SO ₄	686	14.28	32.0%	62.6%	
Cl	87	2.45	5.5%	10.8%	
NO ₃ -N	0				
EC	1926				
TDS	1485	44.65	100.0%		

CAMINO PARK MONITORING WELLS AND VICTORIA WELL NO. 2
CHEMICAL CHARACTER
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California

Well Name:	Mound Well No. 1		Well Sample		
Date:	9/8/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	249	12.43	23.1%	46.1%	Calcium Sulfate
Mg	74	6.09	11.3%	22.6%	
Na	190	8.26	15.4%	30.7%	
K	6.8	0.17	0.3%	0.6%	
CO ₃ +HCO ₃	349	5.72	10.6%	21.3%	
SO ₄	900	18.73	34.8%	69.8%	
Cl	85	2.40	4.5%	8.9%	
NO ₃ -N	13				
EC	2200				
TDS	1983	53.80	100.0%		

Well Name:	Marina Park MW-Deep		Well Sample		
Date:	9/8/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	173	8.63	22.0%	44.0%	Calcium Sulfate
Mg	46	3.78	9.6%	19.3%	
Na	162	7.04	18.0%	35.9%	
K	6	0.15	0.4%	0.8%	
CO ₃ +HCO ₃	380	6.23	15.9%	31.8%	
SO ₄	530	11.03	28.1%	56.3%	
Cl	83	2.34	6.0%	11.9%	
NO ₃ -N	0				
EC	1760				
TDS	1320	39.21	100.0%		

Well Name:	Marina Park MW-Medium		Well Sample		
Date:	9/23/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	129	6.44	23.0%	45.5%	Calcium Sulfate
Mg	36	2.96	10.6%	20.9%	
Na	106	4.61	16.5%	32.6%	
K	5	0.13	0.5%	0.9%	
CO ₃ +HCO ₃	290	4.75	17.0%	34.3%	
SO ₄	380	7.91	28.3%	57.1%	
Cl	42	1.18	4.2%	8.6%	
NO ₃ -N	0				
EC	1320				
TDS	900	27.98	100.0%		

Well Name:	Marina Park MW-Shallow		Well Sample		
Date:	9/23/2008				
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	328	16.37	15.8%	33.0%	Calcium-Magnesium Sulfate
Mg	226	18.59	17.9%	37.4%	
Na	325	14.13	13.6%	28.5%	
K	22	0.56	0.5%	1.1%	
CO ₃ +HCO ₃	1310	21.47	20.7%	39.7%	
SO ₄	1440	29.98	28.9%	55.4%	
Cl	93	2.62	2.5%	4.9%	
NO ₃ -N	0				
EC	4000				
TDS	3240	103.72	100.0%		

**MOUND WELL NO. 1 AND MARINA PARK MONITORING WELLS
CHEMICAL CHARACTER**

Mound Well No. 2 Siting Study

City of San Buenaventura
Ventura, California

PLATE D2

Well Name: 02N22W10N02S		Well Sample			
Date: 9/4/2008					
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	211	10.53	20.7%	42.4%	Calcium Sulfate
Mg	73	6.00	11.8%	24.2%	
Na	187	8.13	16.0%	32.8%	
K	6	0.15	0.3%	0.6%	
CO ₃ +HCO ₃	320	5.25	10.3%	20.1%	
SO ₄	870	18.11	35.6%	69.4%	
Cl	97	2.74	5.4%	10.5%	
NO ₃ -N	23				
EC	2120				
TDS	NA	50.91	100.0%		

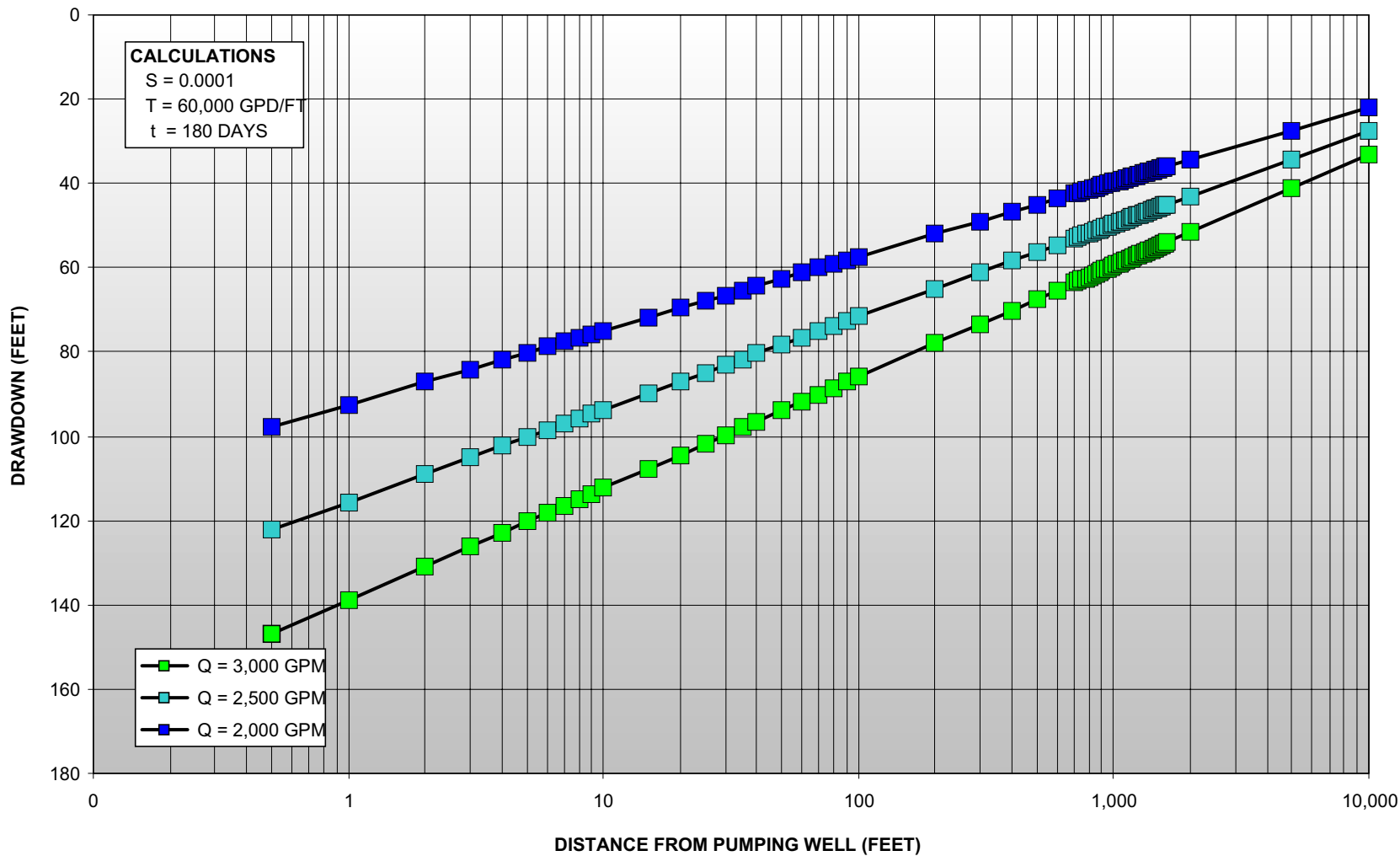
Well Name: 02N22W09K07S		Well Sample			
Date: 9/4/2008					
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	130	6.49	19.7%	39.6%	Sodium Sulfate
Mg	24	1.97	6.0%	12.1%	
Na	179	7.78	23.6%	47.5%	
K	5	0.13	0.4%	0.8%	
CO ₃ +HCO ₃	210	3.44	10.5%	20.8%	
SO ₄	540	11.24	34.2%	67.9%	
Cl	66	1.86	5.7%	11.3%	
NO ₃ -N	0				
EC	1490				
TDS	NA	32.92	100.0%		

Well Name: Community Park Monitoring Well - Deep Well Sample					
Date: 10/29/2008					
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	122	6.09	16.1%	33.1%	Sodium Sulfate
Mg	39	3.21	8.5%	17.4%	
Na	205	8.91	23.5%	48.5%	
K	7	0.18	0.5%	1.0%	
CO ₃ +HCO ₃	240	3.93	10.4%	20.2%	
SO ₄	630	13.11	34.6%	67.3%	
Cl	86	2.43	6.4%	12.5%	
NO ₃ -N	0				
EC	1730				
TDS	1220	37.96	100.0%		

Well Name: Community Park Monitoring Well - Shallow Well Sample					
Date: 10/29/2008					
Constituent	mg/l	meq/l	%	anion/cation%	Chemical Character
Ca	485	24.20	12.9%	25.5%	Sodium Sulfate
Mg	237	19.49	10.4%	20.5%	
Na	1170	50.87	27.2%	53.5%	
K	20	0.51	0.3%	0.5%	
CO ₃ +HCO ₃	207	3.39	1.8%	3.7%	
SO ₄	4040	84.10	44.9%	91.3%	
Cl	165	4.65	2.5%	5.0%	
NO ₃ -N	82				
EC	7240				
TDS	6600	187.22	100.0%		

**SWN 02N22W10N02S, SWN 02N22W09K07S, AND
COMMUNITY PARK MONITORING WELLS
CHEMICAL CHARACTER
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California**

APPENDIX E
ESTIMATED AQUIFER
RESPONSE TO PUMPING



**THEORETICAL DISTANCE VERSUS
DRAWDOWN PROJECTIONS**
Mound Well No. 2 Siting Study
City of San Buenaventura
Ventura, California