Groundwater Exploration Program Report for Cantinas Camp, San Luis Obispo County, California

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 Project Assignment: 210067

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

FOCUSED SUMMARY

Cantinas Camp, an innovative Christian arts center, seeks a supply of groundwater to meet a demand of 50,000 gallons per day, or about 35 gallons per minute. The site is underlain almost entirely by the Vaqueros formation, an aquifer of limited extent in this region between Lakes Nacimiento and San Antonio, and one for which little or no hydrogeologic information was available.

Working for water-systems coordinator Fall Creek Engineering and overall Cantinas Camp project planner Rachel Kovesdi, Balance staff used multiple lines of reasoning to site and complete a 3-phase drilling program. Work was conducted during the summer of 2011, following the second consecutive wet year. Eleven boreholes were drilled to depths of 200 to 550 feet, with six completed as wells. Airlift yield estimates total approximately 150 gallons per minute, yielding water of excellent to adequate quality relative to Title 22 standards.

This report describes the groundwater exploration program to date, and includes the well logs, water-quality analyses, historical information and other materials which will be needed to take the final steps to completing a water-supply system. Overall results are summarized and evaluated in Section 6. Hydrogeologic findings are presented in Section 4 and water-quality findings and interpretations in Section 5.

1. THE PROJECT AND SITE

1.1 Exploratory Program Objectives

The Cantinas Camp project is a Christian arts camp proposed for Cantinas Ranch, a 600-acre site in northwestern San Luis Obispo County. Cantinas Ranch is situated between Lakes San Antonio and Nacimiento, along Lynch Canyon Road, immediately to the east of the small community of Christmas Cove (Figure 1). Very little hydrogeologic information beyond regional geology literature is available bearing on groundwater at the ranch.

Our work was authorized by Rachel Kovesdi, project manager for Cantinas Camp, and was conducted under the auspices of Peter Haase, PE, of Fall Creek Engineering, who is directing the water-supply program for the camp. We conducted a reconnaissance visit on June 8, 2010, and a drilling-planning visit on September 23, 2010. Fall Creek identified a target of 35 gallons per minute (gpm), equivalent to about 50,000 gallons per day (gpd). Together, we concluded that a multi-well exploratory program would be needed to meet this goal, as well as a parallel goal of providing as good water quality as possible at the site – an objective of the project sponsors.

Phase 1 of the drilling program was completed during the first half of May 2011. Following a brief hiatus for analysis and re-evaluation, phase 2 was continued through much of June 2011. A third phase of drilling took place in late August 2011. Phases 1 and 2 were field-directed by Balance, with a site geologist present during drilling, making measurements of yield, salinity (specific conductance) and drilling rates, plus leading decisions about drilling locations, depths, and construction, plus conducting water-quality sampling and lab coordination. Phase 3 was led by Rachel Kovesdi and the drilling contractors, Filipponi & Thompson (F&T), with Balance staff selecting well sites, target depths, and consulting on well construction; Balance advised F&T on how to collect, preserve and ship the water-quality sample, and coordinated with the analytical laboratory.[1] At the end of Phase 3, wells with air-lift yields of about 150 gallons per minute had been completed, yield water of variable, but generally good mineral quality by the standards of the area. It is reasonable to project that the project wells will be able to sustain a yield of 35 gpm. The current exploratory program has now concluded, pending further testing and development of the wells.

1.2 The Site

The ranch is vegetated in an oak savannah, with areas of open grassland and chaparral. Elevations range from about 800 to 1600 feet above mean sea level, the lower elevation being the full-pool elevation of Lake Nacimiento, which bounds the site to the south and east (Figure 2).

[1] Balance geologists were not present during drilling or sampling tasks of Phase 3.

Mean annual precipitation at Cantinas Camp is about 23.5 to 24 inches[2], in contrast to about 14.4 inches at Paso Robles, the nearest rain gage with a long-term record. Year-to-year variability in the Paso Robles area ranges from about 45 to 225 percent of mean annual (Figure 3).[3] Regionally, groundwater levels have recovered from historical lows during the 1970s (Nacitone and CCSE, 2008), and have gradually receded over the past decade, one of the driest decades of past 60 years at Paso Robles (Hecht, 2010). The past two years have been wetter than normal (Figure 3).

Consolidated sedimentary rocks of the Vaqueros formation underlie most of the site (Durham, 1968; Dibblee, rev. 2006), one of very few locations in the Nacimiento and San Antonio watersheds where the Vaqueros formation outcrops sufficiently to serve as a developable aquifer (c.f., Nacitone and CCSE, 2008, which does not specifically identify the Vaqueros as an aquifer). Little information about the water-bearing properties of this unit in San Luis Obispo County is available. Locally and throughout the central coast, this relatively low-permeability formation tends to weather to deep, sandy-loam and loamy soils with considerable recharge potential (Lindsey, 1983). While Lake Nacimiento is next to the site, our results show virtually no exchange of groundwater with lake, in part because water levels are generally above the maximum pool elevation, commonly by 200 feet or more. The salinity of Lake Nacimiento and well water is also different. In one recent sample, the specific conductance of Lake Nacimiento water is 277 μmhos at 25ºC, which is much lower than the specific conductance of well water on Cantinas Ranch.

[2] San Luis Obispo County map of average annual rainfall,1937 -1967, and Calfire's FRAP precipitation map of July 2000, attributed to Sol Rantz of USGS (1969, 1972).

[3] Most hydrologic monitoring occurs for a period defined as a water year, which begins on October 1 and ends on September 30 of the named year. For example, this water year (water year 2011) began on October 1, 2010 and will end on September 30, 2011.

2. DRILLING OBJECTIVES

Two primary objectives were proposed:

a. To document the presence of sufficient water with a drillers' airlift estimate of about 50 gallons per minute (gpm) from all wells to support the proposed project. This water will supplement yields of approximately 11 gpm from the existing well no 1.

b. To locate water of as good of quality as possible in accord with the expressed desires of the project sponsors.

Secondary objectives were (c) to provide a hydrogeologic context and framework to plan future drilling and to plan groundwater withdrawals and manage recharge in a reasonably sustainable manner, and (d) obtain additional hydrogeologic information in the western-most portion of the ranch to assess hydrogeologic linkages with occupied, and potentially occupied, parcels to the west, in support of future environmental impact analysis. The eventual water-supply system for the project will be designed at a later stage, once the configuration of facilities and infrastructure has been further refined.

We were not constrained by utility considerations in selecting well sites. To meet the drilling-program objectives, project managers for the project thought it more important to develop water where it was found and to acquire an overall hydrogeologic understanding of the project site, rather than limit well-site selection to clusters of wells along potential transition corridors or near power sources. For cost control, neither borehole geophysics nor surface geophysics was used prior to the groundwater exploration.

Before inception of Phase 1, project sponsors signed an agreement with the County calling for payment of a fixed fee per acre-foot for all groundwater pumped from within a mile of the shorelines of Lake Nacimiento. This agreement allows water to be taken in reasonable amounts from anywhere on the property, including from the lake. Hydrogeologic connections to the lake are therefore not a water-rights consideration. They are discussed in this report to help characterize and assess the groundwater system.

3. GROUNDWATER EXPLORATION RATIONALE

3.1 Geologic Conditions

Cantinas Camp is underlain almost entirely by the Vaqueros formation. Durham (1968) describes the Vaqueros formation as tan or gray fine- to coarse-grained sandstone, consisting of mainly quartz and feldspar sub-angular or sub-rounded grains generally in a calcite matrix. Mudstone or shale is interbedded with sandstone, and is typically yellow gray or olive and non-calcareous. At this site, fine-grained silty sandstones seem to be mixed with a nearly equal thickness of siltstones and mudstones, with occasional beds of medium or coarse sands. These Miocene marine sediments are reported to be approximately 1,300 feet thick, underlain by an Unnamed formation (referred to as "Red Beds") composed of gray and colored sandstone and conglomerate of terrestrial origin. The Vaqueros formation is generally conformably overlain throughout San Luis Obispo and Santa Barbara Counties by the Rincon shale; this unit is absent or has been eroded away between Lakes San Antonio and Nacimiento. It can therefore be directly recharged by rainfall or by other percolation from the surface.

Previous mapping (Durham, 1968; Dibblee, rev. 2006) had established that beds dip gently or moderately to the south and southwest, typically at 15 to 30 degrees, with folding more pronounced in the southern portion of the site (see Figs 4 and 5). We observed several outcrops with steeper dips, including southeastward, suggesting that, in ancient geologic times, the formation was deformed or locally faulted to a greater degree than shown on the regional maps.

The northwest-trending Nacimiento and San Marcos faults are located about 3 miles southwest and 6 miles northeast of the project site, respectively (Figure 4; Jennings, 1958). Two other unnamed northwest-trending faults are located less than a mile southwestward (on the other side of Lake Nacimiento) and about a mile to the northeast of the project site, respectively. The Vaqueros formation follows this northwest orientation and dips predominately to the southwest (Dibblee, rev. 2006). Durham (1968) proposed that most faults and folds were related to the same geological episode of deformation (Pliocene – Pleistocene).

3.2 Data Available Prior to the Groundwater Exploration Program

Wells 1 and 2[4] had previously been drilled at the site, yielding a reported 11 and 9 gpm during airlift testing, respectively. Existing well 3 is a shallow alluvial well without a well seal adjoining Well 5b. A new home just west of the site has two wells, seemingly developed in the Vaqueros aquifer. The owner reports well yields of 15 to 20 gpm in the well currently in use and artesian conditions in their other well not in use. She granted access for measurement of

[4] Well 2 is on a separate parcel, and is not a part of this project. Data included for completeness only.

specific conductance of water on 6/22/11 from a faucet with untreated well water, which proved to be 1,348 micromhos/cm at 25°C. We are awaiting information from the County on the yields and water quality of the Christmas Cove well(s), which may also be developed in Vaqueros formation.

On June 8, 2010, in preparation for planning the exploratory program, Balance completed a seep and spring inventory of the ranch and adjoining parcels where we could obtain access. A handful of sources from the Vaqueros formation yielded waters with specific conductances of 700 to 1200 micromhos/cm at 25ºC.

A number of seeps originating from the Unnamed ("Red Bed") formation yielded waters with specific conductances in the range of 2000 to 5000+ micromhos/cm, which discouraged considering this unit as a potential water source.

3.3 Exploration Approach

Once it was clear that only limited information might be obtained from existing wells or a seep-and-spring canvass, exploration proceeded using five independent lines of evidence: Geologic analysis (including likely facies evaluation of the Vaqueros sediments), interpretation of vegetation patterns, analysis of water-surface elevation measurements in seeps and ponds, and wells (once constructed), use of salinity (as specific conductance measurements) and ionic-constituent data, and mean recharge analysis as described below.

The Phase 1 drilling program explored different sections of the Vaqueros formation to better understand the stratigraphy and hydrogeology (Figure 5). We drilled in the lower, middle, and upper portions of the Vaqueros stratigraphy. For example, BH-5a is less than 500 feet from BH-5b but about 250 feet stratigraphically higher; BH-30 and BH-31a[5] are on the same ridge as BH-7, and BH-33 is in between existing wells #1 and #2, both of which are currently usable.

The program recognized that the Vaqueros sediments were deposited in a shallow marine environment, where continuous coarser zones might be found from which usable quantities of water might be produced. Our objective was to find the coarser zones. We explored in the direction of the sediment sources, seeking coarser-grained littoral and beach deposits likely to yield water of higher quality, with sufficient extent and continuity that water levels and water quality can be sustained with little change over the course of a summer or – once measurements are available – over multiple years. The geological analysis proceeded during the Phase 1 and 2 drilling and during the week or two following each phase. Measurements of water level and specific conductance were made throughout these phases, during a subsequent trip in late July and a concluding set of observations on September 12, 2011 (see figures 6 and 7).

[5] BH-31 collapsed at a "heaving mudstone" horizon around 200 feet below ground surface. The drillers chose to drill BH-31a 50 feet to the west rather than try to repair a compromised hole.

4. HYDROSTRATIGRAPHIC RESULTS OF EXPLORATORY DRILLING

This section describes the boring logs (Appendix A) and develops initial conclusions on the hydrogeology of Cantinas Ranch, subject to refinement and revision as additional analysis and drilling are conducted. Drilling started on May 9, 2011 and ended on June 23, 2011, with a 2-week re-evaluation period separating Phases 1 and 2. Table 1 summarizes the location and drilling details for each successfully-completed well, with a construction summary. Table 2 presents a log of the drilling activities. Table 3 shows the monitoring results of our depth to water measurements and specific conductance[6] readings at the constructed wells.

4.1 Producing Wells

Our observations of the Phase 1 and Phase 2 borings are summarized below. Phase 3 observations were made by drillers Wes Powell and Rob Thompson of Filipponi and Thompson; they were recorded on standard well-driller's completion report ("well logs"), presented in Appendix A.

4.1.1 BH-7

We observed primarily gray fine sandstone from the surface to 400 feet below ground surface (bgs), with some tan fine sandstone and gray mudstone layers ranging from 10 to 40-feet thick. We encountered first water at 300 feet bgs and found tan brown gravelly sandstone at 425 to 450 feet bgs, underlain by gray sandy silty mudstone to a depth of 580 feet bgs. A well was completed in BH-7 with perforated casing from 280 to 570 feet bgs to target the brown gravelly sandstone. During development, the airlift estimate was about 10 gpm and specific conductance was 980 μmhos at 25 degrees Celsius.

4.1.2 BH-30

We chose to drill at BH30, as our interpretation of the BH-7 cuttings suggested that Vaqueros may coarsen to the west. We observed gray fine sandstone with calcite cement from the surface to 100 feet bgs, underlain by gray mudstone to 200 feet bgs. We encountered first water at the contact between these layers at 100 feet bgs. At 200 feet bgs, we found gray sandstone coarsening with depth to a dark gray well-graded, subrounded sandstone with gravel from 240 to 255 feet bgs, which initially yielded 15 to 20 gpm (airlifted) of water. From 255 to 300 feet bgs, there was brown silty sand with some gravel, underlain by brown sandy silty mudstone to 500 feet bgs, with little change in yield or salinity. A well was completed in BH-30 with

[6] Specific conductance is the ability of water to pass a current through a fixed distance. It closely correlates with total dissolved solids, or 'salinity' of water, and is an easily measured index of mineral water quality used widely throughout the world when decisions need to be made before certified water-quality analyses can be completed.

perforations from 90 to 290 feet bgs to target the well-graded sandstone and gravels. During development, the measured airlift estimate of yield was about 6 gpm and specific conductance was 720 μmhos at 25ºC.

4.1.3 BH-31a

We observed brown interbedded sandstone and mudstone from the surface to 40 feet bgs, underlain by gray fine to medium sandstone to 190 feet bgs with calcite cement. We encountered first water around the contact between these two layers at 60 feet bgs. We found dark gray mudstone from 190 to 230 feet bgs with increasing sand with depth. From 230 to 310 feet bgs, we found additional fine to medium sandstone with calcite cement, which coarsened and became well-graded from 310 to 340 feet bgs. [7] We drilled through a zone of dark gray mudstone from 340 to 350 feet bgs and angular fine gravel, of multiple local lithologies up to 10 millimeters in intermediate diameter, from 350 to 360 feet bgs, underlain by brown sandy mudstone to 380 feet bgs. A well was completed in BH-31a with perforated casing from 240 to 340 feet bgs to target the well-graded sandstone. During development, the measured airlift estimate was about 10 gpm and specific conductance was 474 μmhos at 25ºC..

4.1.4 BH-5a

The upper 20 feet of BH-5a were brown sandy silty mudstone. From 20 to 77 feet bgs, we encountered grayish fine to medium sandstone, and from 77 to 100 feet bgs, there was a slightly damp sandy silty mudstone layer. From 100 feet to 170 feet we encountered gray well graded sandstone, where the driller measured 8 gpm (initially) flowing out of the borehole at 140 feet bgs. At 170 feet bgs, we drilled through a 10 to 20 foot layer of tan-brown silty sandstone, underlain by gray mudstone to 190 feet bgs, both of which we considered non-water-bearing. A well was completed with perforated casing from 100 to 160 feet bgs. During development, the measured airlift estimate was 6 gpm with a specific conductance of 637 μmhos/cm at 25°C.

4.1.5 BH-36

Balance staff sited the location of well 36. Filipponi & Thompson staff drilled, logged, and measured the quality of water in this well. The drilling staff have provided well logs describing the sequences they encountered (see Appendix E). Borehole 36 produced water under artesian conditions at a rate estimated by the driller at 100 to 120 gpm. Following development and completion of the well, we requested that F&T sample the well. Greg Filipponi collected a sample and shipped it chilled to the laboratory per our instructions (see Section 7, below).

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[7] BH-31 appeared to yield approximately 20 gpm at 320 feet bgs, before it collapsed and was abandoned; it was not possible to directly measure this yield in BH-31a because it was drilled with mud below 160 feet bgs.

4.2 Non-producing Boreholes

4.2.1 BH-5b

This boring was drilled near the existing well #3 (a shallow, uncased well without prior plumbing), 50 feet from the stream bisecting the meadow. From the surface down to 35 feet, we encountered well-graded gravelly sands, which we interpreted to be alluvium. We first found water at approximately 30 feet bgs with specific conductance of 1200 µmhos at 25ºC. At 40 feet bgs, we reached a narrow stratum of silty mudstone. From 50 to 100 feet bgs, we encountered a damp, tan fine silty sandstone, underlain by a damp, fine to medium, rounded to sub-rounded, well-sorted silica sand ('beach sand') to 180 feet bgs, yielding an incremental 2 to 3 gpm with specific conductance of 2300 µmhos at 25ºC around 125 feet bgs and some silts and clays from 130 to 140 feet bgs. Between 190 and 210 feet bgs, we encountered a layer of hard sandstone, underlain by mudstone that transitioned from gray to green at 270 feet bgs. The borehole was backfilled with native material to a depth of 60 feet bgs, and a well was completed with a perforated section from 30 to 50 feet bgs to tap into shallower water found in the alluvium. The County issued a variance for a cement seal of 25 feet bgs. During development, the airlift estimate was 10 gpm. The well was inadvertently disinfected prematurely with chlorine bleach, resulting in specific conductance measurements of 4,000 and 5,000 µmhos at 25°C. Over the course of the season, the specific conductance initially decreased, then increased (as alluvial flows dried for the season) to higher values which we believe to reflect connate formation waters from either the very lowermost Vaqueros formation or perhaps from the Red Beds of the underlying formation. The combination of high salinity, proximity to Cantinas Creek, and low yield (when adjusted for this proximity) lead us to recommend this well be used for non-potable water supplies (see below).

4.2.2 BH-33

This well was drilled between existing wells #1 and #2 (off-site), both of which are producing wells. The well was positioned along the mapped geologic strike between the two wells. We encountered sandstone with varying amounts of fines down to 100 feet bgs. Between 100 and 200 feet bgs, we encountered a sandy expansive 'heaving' mudstone with very little, if any, water. Upon reaching 200 feet bgs, we decided to abandon and backfill the borehole.

4.2.3 BH-2

BH-2 had a gravel stringer 30 feet from the surface. From 30 to 160 feet bgs, we encountered gray fine sandstone with a couple of interbedded gray-green mudstone layers. From 160 to 300 feet bgs, we drilled through gray sandy mudstone with sandstone stringers, particularly between 180 and 240 feet bgs. BH-2 was dry, with only slight and spotty 'shows' of water near its total depth of 300 feet. A day after drilling this borehole, water level was at 188 feet from the surface and the specific conductance of this water was 4,600 µmhos at 25°C. It was backfilled and abandoned.

4.2.4 BH-22

From 5 to 40 feet bgs, we encountered gravelly sediments with first water at about 10 feet bgs. We encountered a fine sandy mudstone from 40 to 68 feet bgs, underlain by blue-gray consolidated sandstone to a depth of 78 to 80 feet. The rest of the borehole was mostly blue-gray mudstone with some thin layers of fine to medium sandstone and gravel with very little water. The upper 35 feet where we encountered sand, gravels and cobbles was producing a small yield of water, but still not enough to make this a viable well so we decided to abandon the borehole.

4.2.5 Other boreholes

Balance staff sited boreholes at sites 32 and 35. Filipponi & Thompson staff drilled, logged and subsequently backfilled and abandoned boreholes at these locations. The drilling staff have provided well logs describing the sequences they encountered (see Appendix E). Borehole 32 was drilled at a location other than the one we had identified; it proved to be a dry hole, as was borehole 35.

4.3 Initial Hydrostratigraphic Conclusions

a. At this site, our working hypothesis is to divide the Vaqueros formation into a lower and upper member. The lower member seems to be composed mainly of sandy mudstone, probably deposited in an inner continental shelf setting with relatively little stratigraphic variability beyond the basal littoral (below-beach environment) sands. The upper member is more diverse, comprising fine- to coarse-grained sandstone with varying amounts of gravels and calcite cement, possibly of neritic origin.[8] The lower member tends to contain water that is too saline for consumption without extensive treatment (e.g., boreholes 2 and 5b), while the upper member has zones of water that is of better quality[9] and appears to be of sufficient continuity to likely serve as a developable water-supply aquifer..

b. Boreholes in the western part of the site included more sandstone than those in the east, e.g., BH-30, -31a, -7 versus BH-22 and -2, in order from west to east, respectively,

[8] We were not able to identify the same water-bearing "marker bed" (well-graded sandstone) in BH-30, 31a, -7, -5a, and -5b. These coarser sands and gravels appear to be terrestrial inputs, from a presumed source area to the west, to a deltaic environment in a shallow marine basin.

[9] In this memo, "water quality" is an informal term based solely on the measurements and variability of specific conductance. The lower and more continuous (with depth) the specific conductance, the more likely it is that a well with desirable potable quality will be found – consistent both with good practice and with the particular desires of the project sponsors. Until acceptable Title 22 laboratory analyses are obtained, the water quality of a well should not be presumed to be suitable for a community water supply system.

suggesting the Vaqueros formation (and particularly its upper member) seems to coarsen westward in certain zones.

c. The fact that we did not find sufficient water in BH-22 and -2 may be related to the relatively finer stratigraphy in the eastern portion of the site, or to the unnamed fault immediately south of these wells (mapped on the other side of the lake; Figure 3). We observed tight folds and steep dips near the Lake Nacimiento shoreline, which are not mapped on the most recent geologic map (Dibblee, rev. 2006). It is also possible that faulting and fracturing is draining groundwater.

d. The "heaving mudstone" found around 200 feet bgs in BH-31a is possibly the confining layer that produces the artesian conditions observed in this well. We hypothesize that the localized occurrence of this mudstone reflects the variable depositional environment of the Vaqueros formation along a shallow inner continental shelf depositional setting.

e. Both BH-5a and BH-5b have similar gray/brown sandy mudstone overlain by a productive layer of coarser-grained material. This coarser layer is thicker in BH-5a than in BH-5b, and yielded more water. BH-5b tapped into some of the lowest, saltiest sections of the Vaqueros formation and into the immediately underlying Red Beds (Trb) (Figure 5). During our reconnaissance trip in June 2010, we established that springs and low flows in Cantinas Creek emanating from the Red Beds elsewhere in the watershed tend to have high salinities (1300 to 3000 μmhos at field temperatures).

5. WATER QUALITY

In addition to measuring whether a well can yield potable water, water-quality analysis can be informative of the where and when groundwater was recharged and how the ambient formations can affect it.

5.1 Sampling, Preservation and Analysis

Groundwater samples were collected from four of the completed wells (BH-7, BH-30, BH-31a, and BH-36). The water quality samples were collected shortly after each of the wells were completed, at least one hour into a procedure known as "well development".[10] They were then iced and immediately express-shipped to Soil Control Laboratories (in Watsonville), a state-certified laboratory, for analysis of general physical condition, general mineral composition, and Title 22 inorganic constituents. Samples were analyzed within standard holding times. Results of the analyses are shown, interpreted relative to water-quality standards in Table 4, which also includes some internal checks of data validity. The laboratory reports are included in Appendix _. Wells BH-5a and BH-5b were not sampled because the driller had previously added bleach to the well for disinfection. Previously drilled wells #1 and #2 were also not sampled.

5.1.1 Mineral composition of the groundwater

An often used method to illustrate the dissolved mineral composition of specific water samples is by plotting the laboratory results on a Piper Diagram, a tool long used in California to identify and differentiate (or 'fingerprint') water sources. Figure 8 is a Piper Diagram showing the general mineral composition of water quality samples collected from four completed wells. Wells BH-5a and BH-5b were not sampled for water quality. We also include County laboratory results from a typical recent sample from Lake Nacimiento (reported to have been collected in the hypolimnion 57 feet below the water surface on May 3, 2010). Groundwater from BH 30 and BH-36 are characterized as a mix of calcium and magnesium bicarbonate ions, as is the sample from well BH-31a but with slightly more sodium. Lake Nacimiento water is also characterized as a mix of calcium and magnesium bicarbonate ions but with a slightly higher proportion of sulfate. The groundwater sample collected from well BH-7, however, is distinctly different and characterized as sodium bicarbonate groundwater (with minor proportions of sulfate and chloride). The BH-7 sample also has distinctly higher amount of total dissolved solids (identified in the size of the circle around the plotted points on the Piper Diagram).

[10] During well development, the driller removes drilling fluids from the well and draws groundwater into the well by blowing compressed air into the bottom of the well. The driller also surges the flow to obtain better results. After well development an 'air-lift' flow rate is measured as an estimate of well yield.

5.1.2 Conformance with Title 22 (Potability) Standards

Laboratory results for the sample collected from BH-36 and the other wells satisfied the tested primary and secondary drinking water limits listed in California Administrative Code, Title 22 (Table 4). The concentration of iron, manganese, and aluminum ions in samples collected from wells BH-30 and BH-31a, however, significantly exceeded their maximum contaminant level (MCL). We recommend resampling these wells after pumping them for an extended time, for example during a 72-hour pumping test. It is possible that suspended clays or colloids from residual drilling mud were dissolved when the sample was acidified in the lab during analysis, as clays and colloids contain much aluminum (in particular), iron and manganese. Under Title 22, iron and manganese are secondary limits, and aluminum is a primary limit. Primary limits protect public health, while secondary limits are consumer acceptance levels. Dissolved iron and manganese precipitates on plumbing fixtures causing a rust-colored stain from iron and a black stain from manganese that may be removed using common household cleaning agents. We note that there is an iron/manganese stain forming on the inside of the well casing of BH-31a, the well from which the concentrations were highest. There are general health concerns if the iron or manganese concentration exceeds ten times the MCL, which they did. It should be noted that iron and manganese are frequently found at concentrations exceeding the secondary MCL in local sandstones (e.g., Nacitone, 2008), and that off-the-shelf treatment for such exceedances are available, if proved needed by subsequently sampling after the well is further developed.

The sample from well BH-7 satisfied all of the tested primary and secondary MCLs except for the quantity of total dissolved solids. In addition, the specific conductance of the BH-7 sample exceeded its recommended MCL of 900 μmhos/cm at 25°C, but not its upper allowable specific conductance MCL of 1,600 μmhos/cm at 25°C. The turbidity of this sample was extraordinarily high, suggesting additional well development is warranted and/or the filter pack is not as effective as it might be.

Both nitrate and boron are present at very low levels, well below regulatory or irrigation thresholds of concern.

Microbiological testing is typically conducted after aquifer testing, and after a pump and piping has been installed in the well and it has been disinfected with bleach. The wells have also not been tested for radiological parameters or for synthetic organic constituents (commonly known as 'contaminants') identified in Title 22. Analysis for these constituents is best conducted following sustained well tests.

Specific conductance and temperature were measured several times after well completion until the season's final measurement on September 12, 2011. Results are plotted in Figures 6 and 7μ, and include measurements from completed wells BH-5a and BH-5b, as well as measurements from previously existing Well #1, Ponds A and B, and Lake Nacimiento. The specific conductance of the Lake Nacimiento is the lowest and represents a regional base level (200 to 300 μmhos/cm at 25°C). On-site Ponds A and B have considerably higher specific conductance

measurements (~ 780 μmhos/cm at 25°C), and are at similar levels measured in groundwater from most of the wells; wells BH-31a and BH-36 were lower and wells BH-7 and #2 were higher, but the specific conductance of all well waters were below the upper MCL except for BH-5a and B-5b. The specific conductance of BH-5a well water was initially well above its upper MCL because of bleach added to the well after completion, but it stabilized below its upper MCL after about a month from dilution in the aquifer. Bleach was also added to well BH-5b but the specific conductance remained elevated well above its MCL because the proportion of water originating in the 'Redbed' aquifer (locally with high connate[11] salinity) increased as lower-salinity near-surface alluvial aquifer inflows diminished over the course of the summer. We do not recommend that well 5b be used for water supply purposes; it may prove to be a suitable source for seasonal irrigation or dust control when salinities are low.[12] We do recommend that well 5a be sampled for mineral analysis after it has been pumped for a considerable amount of time, then be assessed as a source of potable and/or irrigation supply based on results of the tests.

[11] Naturally-occurring salts found in formation waters, and thought to remain from the original deposition in a marine environment.

[12] Well 5b was drilled to assess water supply near existing well #3, which historically is reported to have been used for irrigation and stockwatering. This old well lacks a well seal, and cannot be used for human consumption. We believe that salinities in well 5b can be lowered by sealing off the lower 15 feet of the well, drilled into 'redbed' bedrock; yields will diminish, but the water is likely to be more usable for ranching purposes, if needed. If so sealed off, this well may also prove useful as a monitoring well to assess the effects of land use further upstream or as an upgradient well for tracking long-term effects of uses of the meadow.

6. PRELIMINARY HYDROGEOLOGIC INTERPRETATION AND CONCLUSIONS

Fall Creek Engineering ("Fall Creek") identified our goals to be locating supplies meeting Title 22 standards likely to sustain a yield of 35 gpm in addition to their inferred yield estimate from pre-existing wells #1. Accordingly:

We have completed six new wells which, cumulatively, yield about 150 gpm by airlift testing. It is likely that these wells may produce the target of 35 gpm of sustainable yield. Additional drilling can be conducted at any time, so we chose to curtail drilling once our target had been achieved.

The northwestern portion of Cantinas Camp can provide water of suitable volume and quality under present conditions. Wells with airlift yields ranging from 7 to about 120 gallons per minutes were obtained from this part of the site, with only one dry hole encountered (No. 35). Groundwater supplying these wells, we believe, is recharged from rainfall both onsite and on a ridge of bedded partly-sandy sedimentary rocks which extends northwestward from the site approximately 1.2 to 1.5 miles. We see no reason to anticipate changes in groundwater recharge in the foreseeable future.

In at least portions of the upper Vaqueros, water quality generally improves and salinities decrease moving westward across the northwestern part of the site. This seems to be associated with a geologic gradient of deposits coarsening toward the west and northwest, likely in the direction of the source areas for the sands deposited as the Vaqueros formation. Over the course of the summer of 2011, the salinity of wells in this part of the site held essentially constant, suggesting that the groundwater source for this area is substantial. One significant exception was well 7, in which salinities gradually decreased over the summer. We interpret this response – unusual and likely significant – to an increasing proportion of water entering the well from the west as the saltier waters on the east side of this well gradually receded seasonally.

The lower unit of the Vaqueros formation seems to typically have relatively high salinity and low yield. Even higher salinities were found in the unnamed formation mapped as 'Red Beds' (Trb) on the geologic maps, based on results from well 5b and from elevated salinities mapped in springs which we canvassed during June 2010 at sites where the redbeds are the inferred source of yield. Further exploration in this portion of the geologic section is not a current priority.

BH-22 proved to be dry. This borehole was sited to draw upon what seemed to be the most fractured portion of the formation near the center of a tight structural fold. We learned that fractures alone may not be sufficient to supply a well in the upper Vaqueros formation, based on this one attempt.

Water of acceptable quality may likely be obtainable from the northwestern portion of the site, pending additional analyses and sustained-yield tests. Additional testing is warranted,

particularly for selected trace elements. Bacterial and radiometric testing has also not been conducted.

As noted above, groundwater does not appear to be moving from the lake into the units beneath this site. Most anticipated production will be from wells with static water levels 200 to 300 feet above the lake, and many thousands of feet away from it. It is exceedingly unlikely that the lake, even when full, will be the source of measurable recharge to Cantinas Ranch.

For those constituents tested, the water quality in all wells conforms with Title 22 standards for community water supply, or is likely to conform once the wells are further developed (for turbidity and aluminum) or routine treatment (for iron and manganese) provided. One possible exception is well 5a, where reported concentrations of total dissolved solids slightly exceed the secondary standard of 1000 mg/L; as recent measurements of specific conductance (the field proxy for total dissolved solids) have consistently fallen below the MCL of 1600 µmhos/cm at 25ºC, it is probable that this well will prove usable.

Because turbidity and several trace-metal constituents associated with fine clays are elevated in several wells (while remaining below allowable limits), it is possible that the customary gravels locally used for the well filter packs may be too coarse for the Vaqueros aquifer at Cantinas Ranch. We suggest that future wells at the site be constructed with a finer-grained filter pack. Similarly, we suggest that Cantinas Camp use the optional EPA protocol of field-filtering through 0.45 micron glass-fiber filters prior to submitting future samples for analysis.

7. DISCUSSION

In this part of the memo, we explore (a) future yields and yield tests, (b) aquifer recharge, (c) dry-year resilience, (d) water quality, and (e) presence or absence of connection to Lakes Nacimiento and San Antonio. All portions of this discussion are based on the assumption that sustained well tests fall within or near the typical range of 50 to 75 percent of the airlift yields, and that quality of the water produced will be similar to the quality produced in airlift tests or post-airlift artesian conditions. We believe that these are reasonable assumptions in this hydrogeologic setting. The inferences can be reassessed once data are available from sustained pump tests.

Reported airlift yields relative to those likely to be confirmed by longer-duration formal aquifer ("pump") tests

For bedrock wells, sustainable yields established by pump tests tend to be lower than the airlift yields. Our experience with Vaqueros (and similar) formation wells in Monterey and Santa Cruz counties is that sustained production of 50 to 75 percent of the measured yields of conventional airlift yields are typical. For the very limited purpose of deciding when to halt the exploratory program, we assumed that sustained-tested yields will equal about two-thirds of the airlift yields. Hence, we have assumed that an airlift yield total of more than about 51.5 gpm may meet the goal of 35 gpm. With airlift tests totaling about 150 gpm, sustained pumping yields in the range of 75 to 100 gpm are well within the range of likelihood, but should be confirmed.

Conventional sustained pumping tests often have both pumping and recovery phases. Public health departments sometimes establish expectations for 90 or 95 percent recovery to pre-test static water levels. They use this very specific information for a qualitative assessment as to whether the well can be replenished by recharge. This rule of thumb – developed for wells in valleys – may not be hydrogeologically applicable to portions of Cantinas Ranch, with its many wells sited on ridgelines, where recharge of the cone of depression can occur during summer months from only one or two directions, rather than from all directions, as holds true for a valley-floor well. It may be physically impossible for ridgeline wells to recover quickly during summer months. We will attempt to establish logical expectations for each well with County Environmental Health staff prior to conducting the sustained yield tests.

Resilience during drier years

The exploratory drilling campaign was conducted during, or just following, a wet year with a very wet spring (see Fig. 3). Over the short term of this investigation, it is difficult to establish wet/dry year(s) resilience under such conditions when the few wells have been developed in the affected aquifer.

Potential well interference

Wells sites were planned to minimize excessive interference between wells, assuming unconfined conditions. In light of artesian conditions encountered in one of the wells, we installed transducers on July 19 in several wells to monitor possible effects of pumping other wells which might be drilled during Phase 3 in the northwestern part of the ranch. As it happened, well 36 was successfully completed as part of Phase 3 and pumped for several hours at 100 to 120 gpm. We were not able to discern dynamic effects of this pumping on the adjoining wells. Effects of pumping one well on others might be measured as part of a sustained pumping testing program, if one is conducted, to assess whether such effects are present and appreciable.

Sufficiency of recharge

This aquifer is primarily recharged directly from rainfall. We believe that only limited stream recharge and no lake recharge relevant to the exploratory-program wells presently exist. Therefore, well sites were chosen such that each well has a minimum of 30 to 50 acres of recharge surrounding its wellhead. Recharge of 4 inches per year – a reasonable mean for sandy soils in a 24-inch rainfall zone -- over a typical wet/dry year cycle may sustain mean yields of about 12 to 20 gpm, respectively. In reality, recharge to individual wells is likely from an area much greater than that immediately surrounding the wells, as noted above, so the preliminary recharge provision included in the well siting is substantially conservative. The water levels, artesian conditions, and near-constant salinity observed over the course of the summer suggest that the groundwater body supporting the western wells (with the exception of well 7) is large and recharged from a larger area.

Sustaining current water quality

Similar concentrations and ionic ratios in the mineral composition of samples from the main northwestern wells (again, with the exception of well 7) suggests that they draw water source(s) likely to sustain that water quality. General-mineral analysis of samples collected (a) at the end of a sustained well test and/or (b) during a subsequent dry year will help verify this inference.

Initial laboratory analyses show slightly-elevated concentrations of aluminum, other trace elements, and possibly iron and manganese which may be associated with drilling muds and incompletely developed wells. We suggest that the wells be re-sampled following a sustained well test. The sustained pumping may also "help develop" the wells and purge drilling muds and clays associated with the drilling, providing samples that are freer of sediment and the absorbed constituents, which may dissolve during the preservation with acid required of formal Title 22 water quality samples. The results will therefore be more indicative of the sediment-free quality of formation waters and, therefore, the quality of the well water over time.

8. ACKNOWLEDGMENTS

San Luis Obispo County Environmental Health staff permitted the Phase 1 and Phase 2 wells, inspected well seals, and made useful suggestions in the field. Rachel Kovesdi, of Kirk Consulting, provided overall project guidance plus logistic assistance on site, including assembling the limited information on existing wells and springs with which we began the analysis. Drilling was conducted by Filipponi and Thompson, under the direction of Greg Filipponi, whose lead driller was Wes Powell, assisted by Rob Thompson; we appreciate the clear and frequent communication with the drilling team. We are grateful for the effort and dedication from everyone involved with this campaign, as we dealt with summer rainfall, collapsing holes, and other seemingly-inevitable "drilling surprises". Finally, the neighbor directly west of Cantinas Ranch kindly shared information regarding the yields and specific conductance of her wells.

9. LIMITATIONS

This memo was prepared in general accordance with the accepted standard of practice in surface-water and ground-water hydrology existing in Central California for projects of similar scale at the time the investigations were performed. No other warranties, expressed or implied, are made.

As is customary, we note that readers should recognize that interpretation and evaluation of subsurface conditions and physical factors affecting the hydrologic context of any site is a difficult and inexact art. We note, in particular, that many factors affect local and regional ground-water levels. Judgments leading to conclusions and recommendations are generally and customarily made with an incomplete knowledge of the conditions present. Continued work on this project, including sustained yield tests and water-quality samples, should reduce the inherent uncertainties associated with this study.

We have used standard environmental information -- such as topographic and geologic mapping -- in our analyses and approaches without verification or modification, in conformance with local custom. New information could influence recommendations, perhaps fundamentally. As updated information becomes available, the interpretations and recommendations contained in this memo may warrant change. To aid in revisions, we ask that readers or reviewers advise us of new plans, conditions, or data of which they are aware.

Concepts, findings and interpretations contained in this memo are intended for the exclusive use of the property owners and managers of Cantinas Ranch under the conditions presently prevailing except where noted otherwise. Their use beyond the boundaries of the site could lead to environmental or structural damage, and/or to noncompliance with water-quality policies, regulations or permits.

10. REFERENCES CITED

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TABLES

Table 1. Well drilling and construction descriptors, May-August 2011
Cantinas Ranch, San Luis Obispo County, California

Site locators	**Existing Wells pre-2011[a]**		**Phase 1**		**Phase 2**			**Phase 3**
Well number	**Well 1**	**Well 2**	**BH-7**	**BH-5b[b]**	**BH-5a**	**BH-31A**	**BH-30**	**BH-36**
Well drillers report number	n/a	529070	e0120570	e0120568	e0120567	e0132635	e0131671	e0134744
Assessors parcel number	080-062-23	080-063-030	080-011-011	080-062-39	080-062-39	080-011-011	080-011-011	080-011-011
Latitude, WGS84	35°45'31.20"N	35°45'35.57"N	35°45'50.64"N	35°45'51.31"N	35°45'47.52"N	35°45'51.36"N	35°45'55.91"N	35°45'50.97"N
Longitude, WGS84	121° 1'14.66"W	121° 1'32.19"W	121° 1'18.69"W	121° 0'58.50"W	121° 1'0.79"W	121° 1'26.70"W	121° 1'32.66"W	121° 1'32.08"W
Elevation, feet	943	946	1160	841	856	1115	1180	1088
Drilling and well construction descriptors								
Date drilling began	n/a	11/30/1999	5/10/2011	5/23/2011	6/7/2011	6/14/2011	6/20/2011	8/10/2011
Date of well completion	n/a	12/1/1999	5/12/2011	5/24/2011	6/8/2011	6/15/2011	6/21/2011	8/11/2011
Depth of static water, feet	53	42	64	75	50	Artesian	85	Artesian
Air lift test estimates, gpm[d]	**11**	**9**	**10**	**10**	**6**	**10**	**6**	**100+[e]**
Specific conductance, µmhos/cm @ 25 °C	970	n/a	700	4244[c]	2046[c]	474	720	556
Field temperature, °C	n/a	n/a	23	18	20	22.1	21.3	22.0
Diameter of well casing, inches	6	5	5	5	5	5	5	5
Depth of seal, feet	n/a	50	50	25	50	50	50	50
Screen slot size, inches	n/a	0.06	0.032	0.032	0.032	0.032	0.032	0.032
Screened intervals, feet bgs	n/a	81 to 141	280 to 570	30 to 50	100 to 180	240 to 340	90 to 290	80 to 220
Bottom of casing, feet bgs	n/a	141	580	60	180	380	300	220
Depth of borehole, feet bgs	101	142	580	300	190	380	500	220

Notes:

a) Drilled by Miller Drilling. Variable and partial information available at present. Well 2 is not a part of the present Cantinas Ranch proposal; it is included here solely for completeness.

b) Well 5b has limited potential use for seasonal irrigation or stockwatering, if the lowermost 15 feet are cemented back, or for monitoring. It cannot be used for community water supply, and is not included in calculations of potable water supply.

c) Reported SCT values seem to include remnant effects from disinfecting these wells with bleach about 1 week earlier. We anticipate that, upon re-testing, values will fall below the secondary MCL of 1600 umhos/cm

d) Measured by Balance geologist near conclusion of airlift tests using calibrated bucket and stopwatch method. The combined airlift estimate for BH-7, 5a, 31A and 30 is 32 gpm.
For bedrock wells, sustainable yields established by pump tests tend to be lower than the airlift yields.
For the very limited purpose of deciding when to stop the exploratory program, we assumed that sustained-tested yields will equal to about 60% of the airlift yields or about 19 gpm. See text.
Sustained testing will provide better estimates of yield.

e) Estimated by driller to yield 100-120 gpm during airlift testing.

Table 2. Log of drilling activities
Cantinas Camp, San Luis Obispo County

Date	Activity
Sunday, May 08, 2011	
Monday, May 09, 2011	Drill BH-2 to T.D. of 300 feet - dry hole
Tuesday, May 10, 2011	Drill BH-7 down to 400 feet.
Wednesday, May 11, 2011	Drill BH-7 down to 485 feet.
Thursday, May 12, 2011	Drill BH-7 down to T.D. of 580 feet.
Friday, May 13, 2011	Well BH-7 development
Saturday, May 14, 2011	
Sunday, May 15, 2011	
Monday, May 16, 2011	Continued development of BH-7; rain tonight
Tuesday, May 17, 2011	Rain today, tonight - no drilling
Wednesday, May 18, 2011	Rain today - no drilling
Thursday, May 19, 2011	Started drilling BH-22 down to 43 feet; rattlesnake in camp
Friday, May 20, 2011	Continued drilling of BH-22 down to 80 feet.
Saturday, May 21, 2011	
Sunday, May 22, 2011	
Monday, May 23, 2011	Continued to drill BH-22 down to T.D. of 420 feet; started to drill BH-5b down to 40 feet.
Tuesday, May 24, 2011	Drill BH-5b to T.D. of 300 feet
Wednesday, May 25, 2011	Develop/test BH-5b
Thursday, May 26, 2011	Demob and followup: boring logs, cross sections
Friday, May 27, 2011	Demob and followup: boring logs, cross sections
Saturday, May 28, 2011	
Sunday, May 29, 2011	
Monday, May 30, 2011	
Tuesday, May 31, 2011	Preparation of cross sections for well siting
Wednesday, June 01, 2011	Schedule and scope for Phase 2
Thursday, June 02, 2011	Rain predicted - no drilling
Friday, June 03, 2011	Rain predicted - no drilling
Saturday, June 04, 2011	
Sunday, June 05, 2011	
Monday, June 06, 2011	
Tuesday, June 07, 2011	
Wednesday, June 08, 2011	Drill BH-5a to 190 feet.
Thursday, June 09, 2011	Well BH-5a was completed and developed. BH-31 drilled.
Friday, June 10, 2011	Reaming BH-31
Saturday, June 11, 2011	BH-31 collapses at 200 feet.
Sunday, June 12, 2011	
Monday, June 13, 2011	Continued to ream and abandon BH-31.
Tuesday, June 14, 2011	Drilled BH-31A down to 160 feet.
Wednesday, June 15, 2011	BH-31A drilled to a TD of 380 feet. Well constructed. GP, SR
Thursday, June 16, 2011	BH-31A sealed and developed; SR as geologist
Friday, June 17, 2011	
Saturday, June 18, 2011	
Sunday, June 19, 2011	
Monday, June 20, 2011	Drill BH-30 to 500 feet.
Tuesday, June 21, 2011	Borehole BH-30 was reamed down to 300 feet.
Wednesday, June 22, 2011	BH-30 sand pack, seal and develop.
Thursday, June 23, 2011	Drill BH-33 to 200 feet.
Friday, June 24, 2011	

Date	Activity
Tuesday, August 02, 2011	Begin drilling BH-32. No Balance hydrologist on site.
Wednesday, August 03, 2011	Drilled BH-32 down to 500 feet - dry hole
Friday, August 05, 2011	Drilled BH-35 down to 520 feet - dry hole. No Balance hydrologist on site.
Wednesday, August 10, 2011	Begin drilling BH-36. No Balance hydrologist on site.
Thursday, August 11, 2011	Drilled BH-36 down to 220 feet - Air lift estimate = 100gpm.

Note: Gustavo Porras was field geologist except on days noted as SR (Sarah Richmond), or when there was no Balance hydrologist on site.

Table 3. Summary of hydrologic monitoring results for Cantinas Camp, San Luis Obispo County, California

Site Conditions			Groundwater			Water Quality			Remarks
Date/Time	Observer	Top-of-casing to water	WSE elevation (WGS84)	Depth below ground surface	Temperature	Specific Conductance at field temperature	Specific Conductance	
		(ft)	*(ft)*	*(ft)*	*(°C)*	*(µmhos)*	*at 25 (°C)*	
Well #1								
Elevation =			943	*feet*				
Stick-up =			0.80	*feet*				
Reference point (RP) elevation =			943.80	*feet*				
LL depth from RP =			---	*feet (installed 7/19/11)*				
9/23/10 17:41	gp	46.00	897.80	45.20	---	---	---	
6/16/11 13:00	sr	41.38	902.42	40.58	---	---	---	
6/23/11 15:46	gp	53.53	890.27	52.73	---	---	---	
7/19/11 18:03	gp	53.46	890.34	52.66	---	---	---	
9/12/11 15:53	gp	58.95	884.85	58.15	---	---	---	
Well #2								
Elevation =			946	*feet*				
Stick-up =			1.33	*feet*				
Reference point (RP) elevation =			947.33	*feet*				
LL depth from RP =			85	*feet (installed 7/19/11)*				
9/23/10 17:55	gp	83.90	863.43	82.57	na	na	na	
6/16/11 14:05	sr	78.03	869.30	76.70	na	na	na	
6/23/11 15:22	gp	77.80	869.53	76.47	na	na	na	
7/19/11 16:00	gp	80.03	867.30	78.70	34.3	1203	1021	
9/12/11 14:15	gp	80.59	866.74	79.26	29.2	1109	1023	
BH-5a								
Elevation =			856	*feet*				
Stick-up =			1.25	*feet*				
Reference point (RP) elevation =			857.25	*feet*				
LL depth from RP =			38	*feet (installed 7/19/11)*				
6/9/11 16:10	gp	39.57	817.68	38.32	20.2	7860	8650	Chlorine added to well for disinfection.
6/16/11 12:40	sr	34.66	822.59	33.41	19.3	3323	3726	
6/23/11 16:06	gp	34.38	822.87	33.13	19.3	1826	2046	

Table 3. Summary of hydrologic monitoring results for Cantinas Camp, San Luis Obispo County, California

Site Conditions		Groundwater			Water Quality			Remarks
Date/Time	Observer	Top-of-casing to water	WSE elevation (WGS84)	Depth below ground surface	Temperature	Specific Conductance at field temperature	Specific Conductance	
		(ft)	*(ft)*	*(ft)*	*(°C)*	*(µmhos)*	*at 25 (°C)*	
7/19/11 13:22	gp	34.96	822.29	33.71	19.3	1338	1501	
9/12/11 16:17	gp	36.22	821.03	34.97	19.1	1318	1489	
BH-5b								
Elevation =			841 *feet*					
Stick-up =			1.35 *feet*					
Reference point (RP) elevation =			842.35 *feet*					
LL depth from RP =			30 *feet (installed 7/19/11)*					
6/9/11 16:23	gp	25.33	817.02	23.98	16.6	4298	5130	Chlorine added to well for disinfection.
6/16/11 12:27	sr	25.29	817.06	23.94	16.2	4085	4904	
6/23/11 16:00	gp	25.30	817.05	23.95	16.6	3585	4244	
7/19/11 12:15	gp	25.44	816.91	24.09	16.5	5000	6030	
9/12/11 16:08	gp	26.20	816.15	24.85	16.3	5000	6000	
BH-7								
Elevation =			1160 *feet*					
Stick-up =			1.75 *feet*					
Reference point (RP) elevation =			1161.75 *feet*					
LL depth from RP =			65 *feet (installed 7/19/11)*					
6/9/11 17:00	gp	65.49	1096.26	63.74	21.0	923	1000	
6/16/11 13:14	sr	64.67	1097.08	62.92	21.1	928	983	
6/23/11 15:30	gp	64.05	1097.70	62.30	22.6	976	985	
7/19/11 16:50	gp	62.61	1099.14	60.86	22.5	925	942	
9/12/11 14:37	gp	61.56	1100.19	59.81	22.3	803	845	
BH-30								
Elevation =			1180 *feet*					
Stick-up =			1.50 *feet*					
Reference point (RP) elevation =			1181.50 *feet*					

Table 3. Summary of hydrologic monitoring results for Cantinas Camp, San Luis Obispo County, California

Site Conditions			Groundwater			Water Quality			Remarks
Date/Time		Observer	Top-of-casing to water	WSE elevation (WGS84)	Depth below ground surface	Temperature	Specific Conductance at field temperature	Specific Conductance	
			(ft)	(ft)	(ft)	(°C)	(µmhos)	at 25 (°C)	
LL depth from RP =				108	*feet (installed 7/19/11)*				
	6/23/11 14:39	gp	90.27	1091.23	88.77	21.3	672	720	
	7/19/11 14:35	gp	103.15	1078.35	101.65	20.5	703	771	
	9/12/11 12:43	gp	114.56	1066.94	113.06	21.0	732	796	
BH-31a									
Elevation =				1115	*feet*				
Stick-up =				2.00	*feet*				
Reference point (RP) elevation =				1117.00	*feet*				
LL depth from RP =				8	*feet (installed 7/19/11)*				
	6/23/11 17:03	gp	0.60	1116.40	-1.40	22.1	447	474	Artesian, flowing 0.27 gpm at surface; pond adjacent to well 744 umhos @ 25.3 C = 738 umhos @ 25 C.
	7/19/11 15:23	gp	0.60	1116.40	-1.40	21.8	440	469	Artesian, flowing ~0.25 gpm at surface
	9/12/11 13:36	gp	0.60	1116.40	-1.40	21.7	412	439	Artesian, flowing ~0.25 gpm at surface
BH-36									
Elevation =				1088	*feet*				
Stick-up =				1.80	*feet*				
Reference point (RP) elevation =				1089.80	*feet*				
LL depth from RP =					*No LL installed - Artesian conditions*				
	9/12/11 13:49	gp	0.40	1089.40	-1.40	22.0	524	556	Artesian, flowing ~1.5 gpm at surface

Table 3. Summary of hydrologic monitoring results for Cantinas Camp, San Luis Obispo County, California

Site Conditions		Groundwater			Water Quality			Remarks
Date/Time	Observer	Top-of-casing to water	WSE elevation (WGS84)	Depth below ground surface	Temperature	Specific Conductance at field temperature	Specific Conductance	
		(ft)	*(ft)*	*(ft)*	*(°C)*	*(µmhos)*	*at 25 (°C)*	
Pond A (downslope of BH-31A)								
5/25/11 12:30	gp	---	---	---	19.6	602	671	
6/10/11 12:47	gp	---	---	---	21.4	670	720	
6/23/11 15:20	gp	---	---	---	25.3	744	738	
7/19/11 15:45	gp	---	---	---	30.0	838	764	
9/12/11 14:08	gp	---	---	---				Pond is dry.
Pond B (downslope of BH-35)								
7/19/11 13:30	gp	---	---	---	26.1	800	777	
9/12/11 15:03	gp	---	---	---	28.1	736	779	
Nacimiento Lake								
5/19/11 12:00	gp	---	---	---	18.4	243	277	
9/12/11 15:44	gp	---	---	---	27.3	242	231	
Neighboring property to the west of Cantinas Ranch								
6/22/11 13:00	gp	---	---	---	25.1	1344	1348	Sample from well producing 15-20 gpm.

Notes:
Observer Key: gp = Gustavo Porras; sr = Sarah Richmond

Table 4. Summary of water quality analyses, Cantinas Ranch, San Luis Obispo County, Califorina

PARAMETER	UNITS	DETECTION LIMIT	MCL	Lake Nacimiento	GROUNDWATER SAMPLES			
DESCRIPTORS								
Sample I.D.				Hypolimnion	1050497-01	1060831.01	1060627-01	1080480-01
Site				57 ft. bws	BH-7	BH-30	BH-31a	BH-36
Assessors parcel number				n/a	080-011-011	080-011-011	080-011-011	080-011-011
Latitude, WGS84	degrees			n/a	35°45'50.64"N	35°45'55.91"N	35°45'51.36"N	35°45'50.9"N
Longitude, WGS84	degrees			n/a	121° 1'18.69"W	121° 1'32.66"W	121° 1'26.70"W	121° 1'32.0"W
Elevation, WGS84	feet			n/a	1160	1180	1115	1079
Lab used				n/a	Soil Control	Soil Control	Soil Control	Soil Control
Sample collected by				Nacimiento Project	gp	gp	sr	F&T Drillers
Sample filtering in lab				n/a	yes	yes	yes	yes
FIELD MEASUREMENTS								
Date	MM/DD/YY			5/3/10	5/16/11	6/23/11	6/16/11	8/16/11
Time	HH:MM			13:00	15:00	10:25	13:40	n/a
Specific conductance (@ 25 C°)	umhos/cm			n/a	1533	720	487	n/a
Conductance (@ field temp)	umhos/cm			n/a	1408	672	474	n/a
Temperature	deg C			11	20.6	21.3	23.6	n/a
WATER QUALITY INDICATORS								
Alkalinity (total)	mg/L CaCO3	1		80	440	330	320	270
Hardness (total)	mg/L CaCO3	5		100	100	370	270	280
pH	pH Units	0.1	10.6	7.5	8.4	7.7	8.2	7.3
Specific conductance (@ 25 C°)	umhos/cm	1	1600	n/a	1400	720	510	560
Total dissolved solids (TDS)	mg/L	10	1000	160	**1200**	420	340	310
Turbidity	NTU	2		11	2600	120	840	0.64
MBAS (surfactants)	mg/L	0.025	0.5	0	0	0	0	0
GENERAL MINERALS								
Bicarbonate (as CaCO3)	mg/L	10		66	435	336	320	271
Bicarbonate (as HCO3)	mg/L	1		80	530	410	390	330
Calcium (Ca)	mg/L	0.5		24	23	78	62	56
Carbonate (as CaCO3)	mg/L	6	120	0	0	0	0	0
Carbonate (as CO3)	mg/L	1	120	0	0	0	0	0
Chloride (Cl)	mg/L	1	250	5.69	110	24	11	11
Iron (Fe)	mg/L	0.05	0.3	0.53	0	**5.4**	**18**	0.053
Magnesium (Mg)	mg/L	0.5		9.8	10	43	28	33
Manganese (Mn)	mg/L	0.02	0.05	0.01	0	**0.084**	**0.43**	0.02
Potassiuim (K)	mg/L	0.5		1.2	3.8	4.7	6.8	3.3
Sodium (Na)	mg/L	0.5		6.9	240	41	56	25
Sulfate (SO4)	mg/L	1	250	24	200	65	57	29
TITLE 22 PRIMARY STANDARDS, INORGANIC								
Aluminum (Al)	mg/L	0.05	1	0.11	0	**5.2**	**14**	0
Antimony (Sb)	mg/L	0.006	0.006	0	0	0	0	0
Arsenic (As)	mg/L	0.002	0.010	0	0.0044	0.0054	0.010	0
Barium (Ba)	mg/L	0.1	1	0.035	0	0.16	0.2	0.12
Beryllium (Be)	mg/L	0.001	0.004	0	0	0	0.001	0
Cadmium (Cd)	mg/L	0.001	0.005	0	0	0	0	0
Chromium (Cr)	mg/L	0.001	0.05	0.0012	0.0073	0.0046	0.025	0
Fluoride (F)	mg/L	0.1	1	0.133	1.6	0.45	0.28	0.22
Mercury (Hg)	mg/L	0.0002	0.002	0	0	0	0	0
Nickel (Ni)	mg/L	0.01	0.1	0	0	0.014	0.026	0
Nitrate as (NO3)	mg/L	1	45	1.28	1.6	0	0	0
Selenium (Se)	mg/L	0.005	0.05	0	0.007	0	0	0
Thallium (Tl)	mg/L	0.001	0.002	0	0	0	0	0
OTHER CONSTITUENTS								
Boron (B)	mg/L	0.1		not tested	0.86	0	0	0
Copper (Cu)	mg/L	0.05	1	0	0	0	0	0
Cyanide (CN)	mg/L	0.05		not tested	0	0	0	not tested
Lead (Pb)	mg/L	0.005	0.015	0	0	0	0.013	0
Sliver (Ag)	mg/L	0.01		0	0	0	0	0
Zinc (Zn)	mg/L	0.05	5	0	0	0	0.069	0
LAB CHECK								
Major Cations (Ca+Mg+K+Na)	meq/L	--	--	2.33	12.51	9.33	8.01	6.68
Major Anions (HCO3+CO3+Cl+SO4)	meq/L	--	--	1.97	15.95	8.75	7.89	6.32
Ion Balance (Cations/Anions)	--	--	--	1.18	0.78	1.07	1.02	1.06

NOTES

Observer key: gp = Gustavo Porras; sr = Sarah Richmond

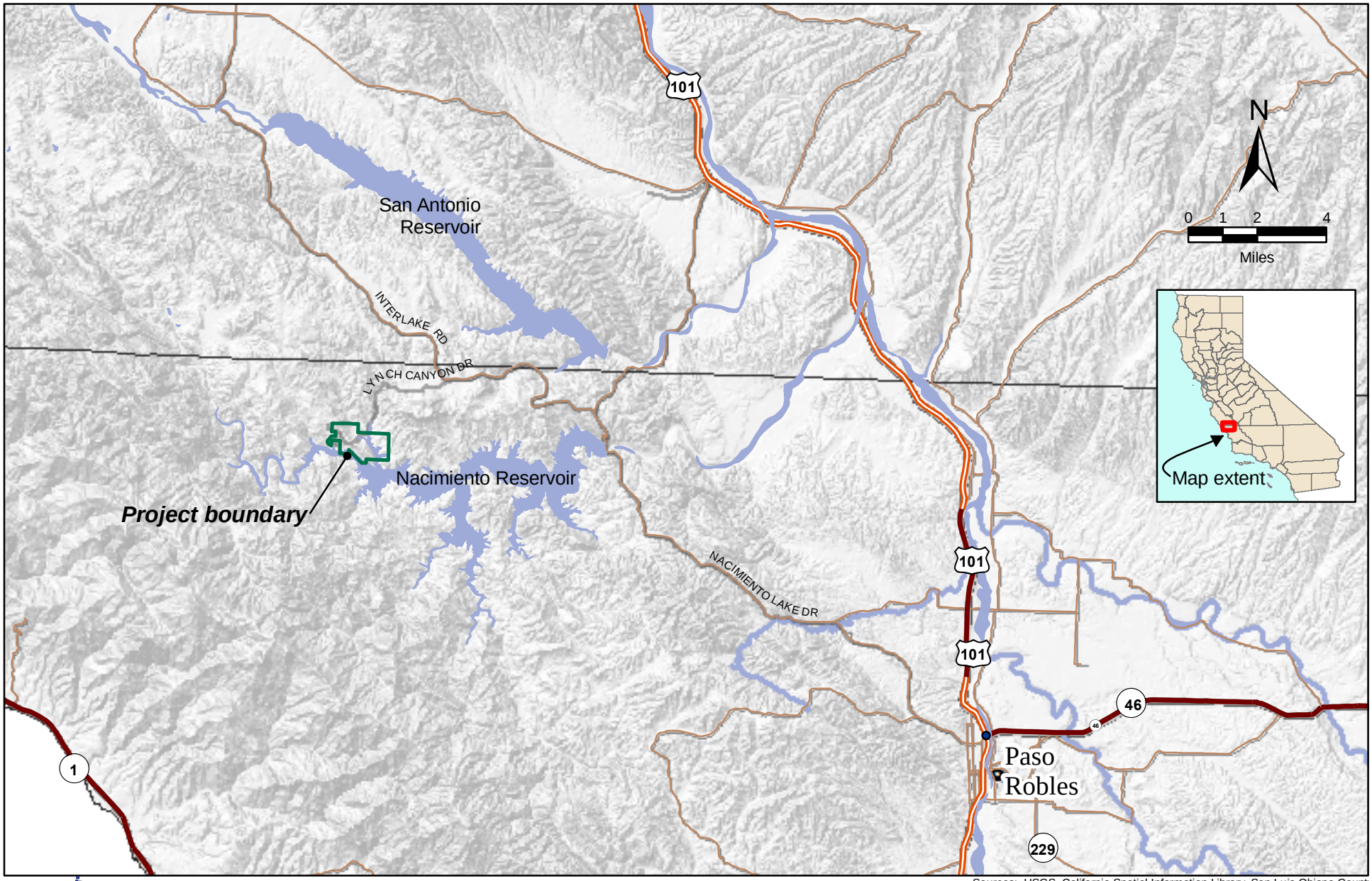
Lab results: 0 = not detected; blank value = not tested

MCL = Title 22 Maximum Contaminant Level as of June 12, 2003; the MCL of Lead is the Regulatory Action Level

Bold red font indicates a laboratory result exceeding its MCL.

Lake Nacimiento water quality data obtained from Lisa Wallander, Water Systems Chemist, Water Quality Laboratory, Public Works Department, County of San Luis Obispo. Potassium (K) results for Lake Nacimiento are from May 2009.

FIGURES



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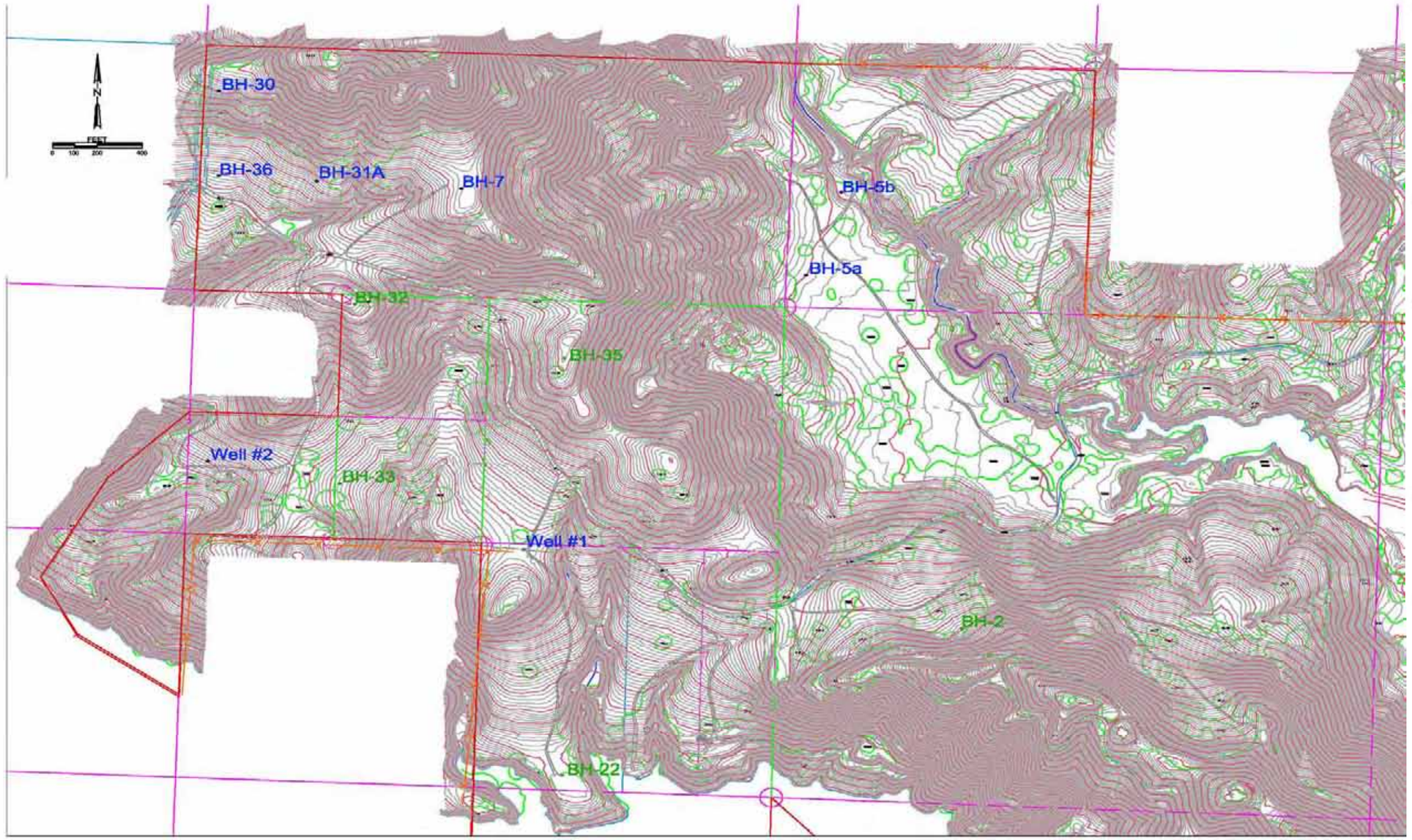
210067 location map

Figure 1. Regional project location map, Cantinas Camp, San Luis Obispo County, CA



Wells drilled during 2011

	Coordinates	Well depth
BH-30	35°45'55.91"N 121° 1'32.66"W APN 080-011-011	300 ft.
Bh-31A	35°45'51.36"N 121° 1'26.70"W APN 080-011-011	380 ft.
BH-36	35°45'50.47"N 121° 1'31.89"W APN 080-011-011	220 ft.
BH-7	35°45'50.64"N 121° 1'18.69"W APN 080-011-011	580 ft.
BH-5a	35°45'47.52"N 121° 1'0.79"W APN 080-062-39	180 ft.
BH-5b	35°45'51.31"N 121° 0'58.50"W APN 080-062-39	60 ft.

Color code
Existing wells
Dry boreholes

Contour interval
2 feet (black)
10 feet (carmine)

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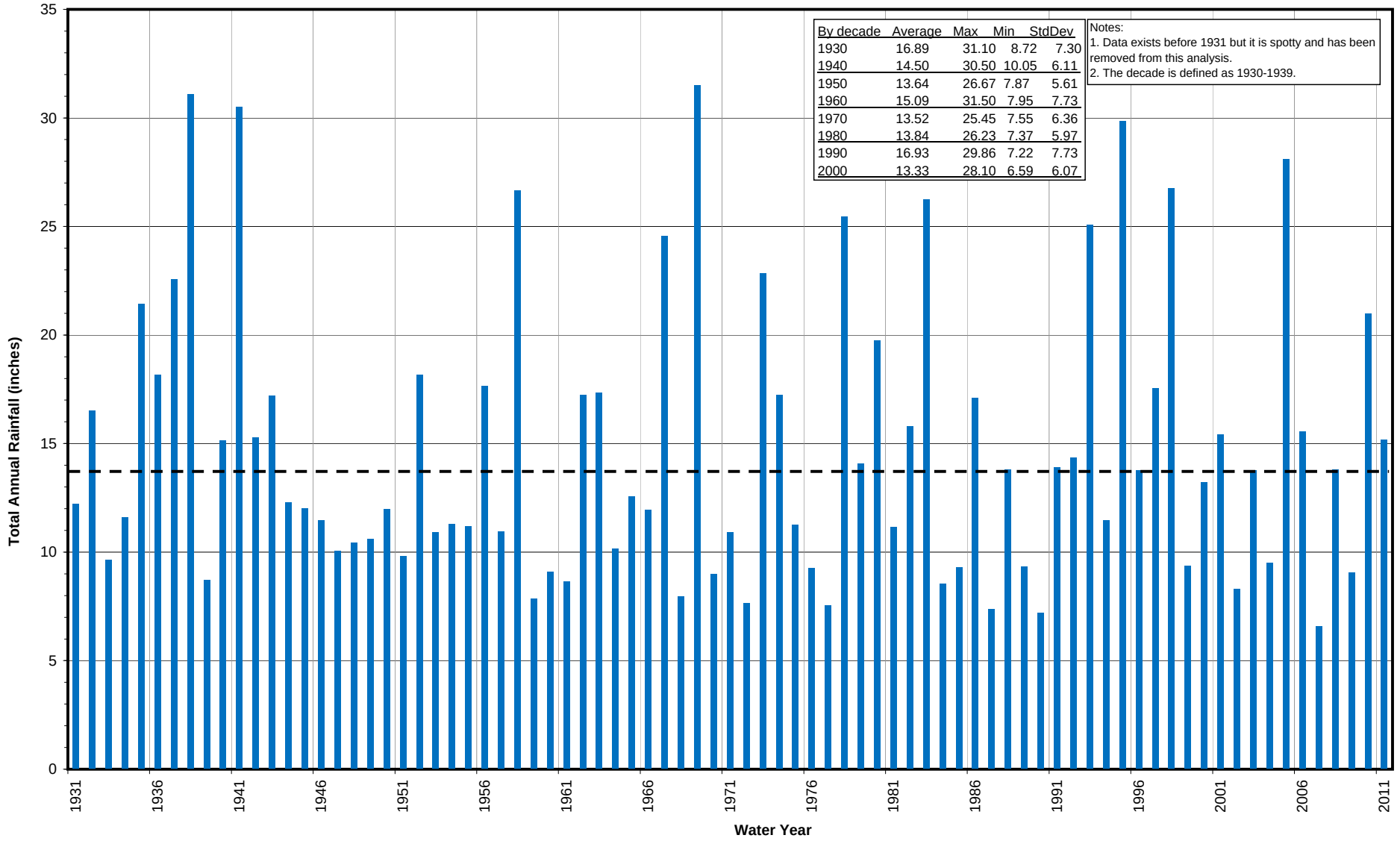
Figure 2. Location of wells and boreholes, Cantinas Camp, San Luis Obispo County, California



By decade	Average	Max	Min	StdDev
1930	16.89	31.10	8.72	7.30
1940	14.50	30.50	10.05	6.11
1950	13.64	26.67	7.87	5.61
1960	15.09	31.50	7.95	7.73
1970	13.52	25.45	7.55	6.36
1980	13.84	26.23	7.37	5.97
1990	16.93	29.86	7.22	7.73
2000	13.33	28.10	6.59	6.07

Notes:
1. Data exists before 1931 but it is spotty and has been removed from this analysis.
2. The decade is defined as 1930-1939.

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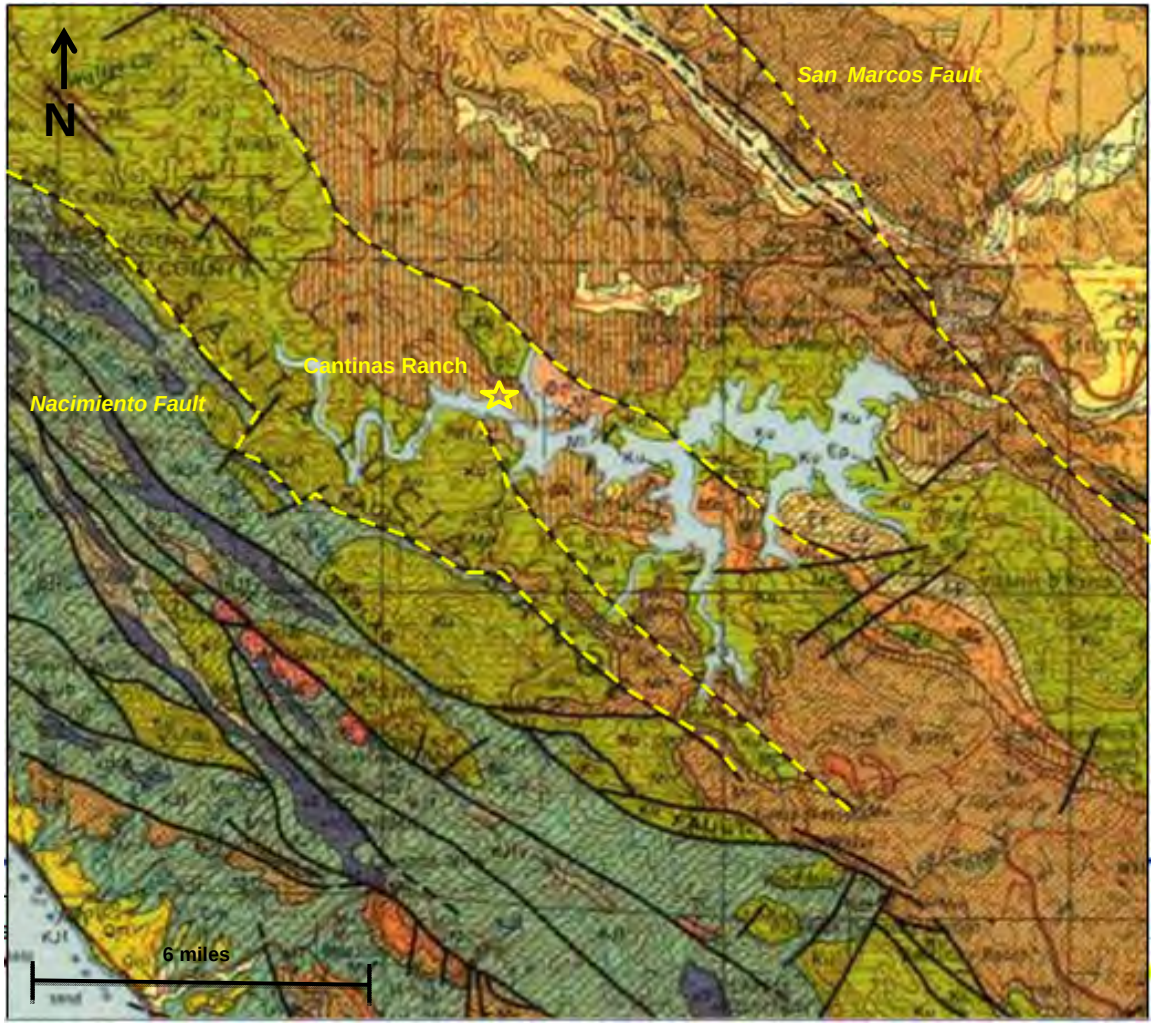
Figure 3. **Rainfall at Paso Robles station (NWS COOP # 046730) from 1931 through February 2011, San Luis Obispo County, California.** The dashed line shows mean annual precipitation during the period of record, 14.86 inches. Precipitation through February 2011 is 15.17 inches, indicating water year 2011 was an above average rainfall year (Source: Hecht, 2010; station data last updated March 24, 2011 as of July 6, 2011.)



Source: Jennings, C.W., 1958, Geologic map of California : San Luis Obispo sheet: California Division of Mines and Geology, 1:250000.

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Figure 4. **Regional geology showing faults near Cantinas Ranch, San Luis Obispo County, California.** The project site is bounded by the northwest-trending Nacimiento Fault to the west and San Marcos Fault to the east. Two smaller, unnamed faults are also located north and south of the project site.

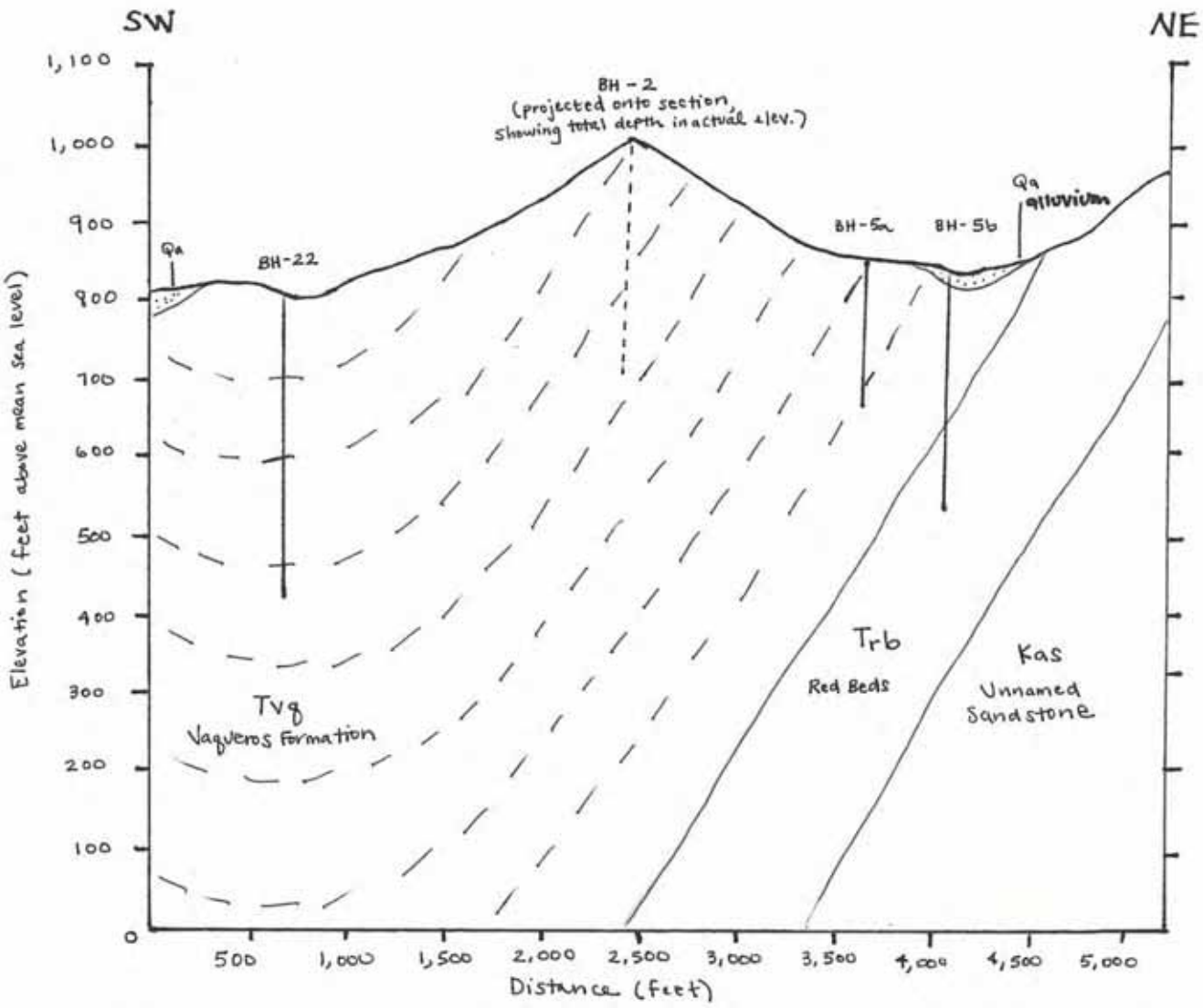

Figure 5. **Northeast-southwest schematic geologic cross section, Cantinas Ranch, San Luis Obispo County, California.** Note vertical exaggeration is 4x.

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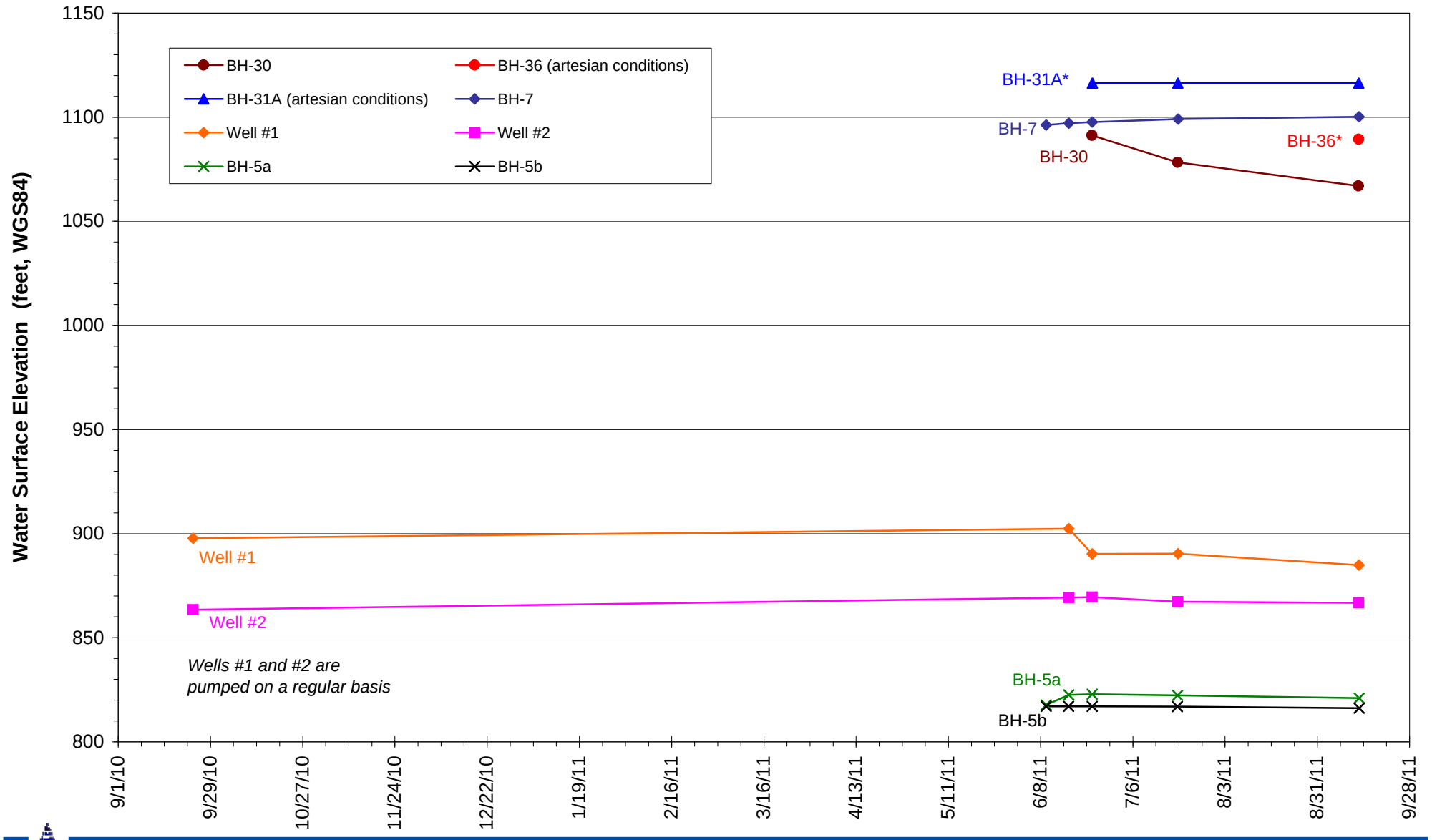

Figure 6. Water surface elevations in wells, Cantinas Camp, San Luis Obispo County, California

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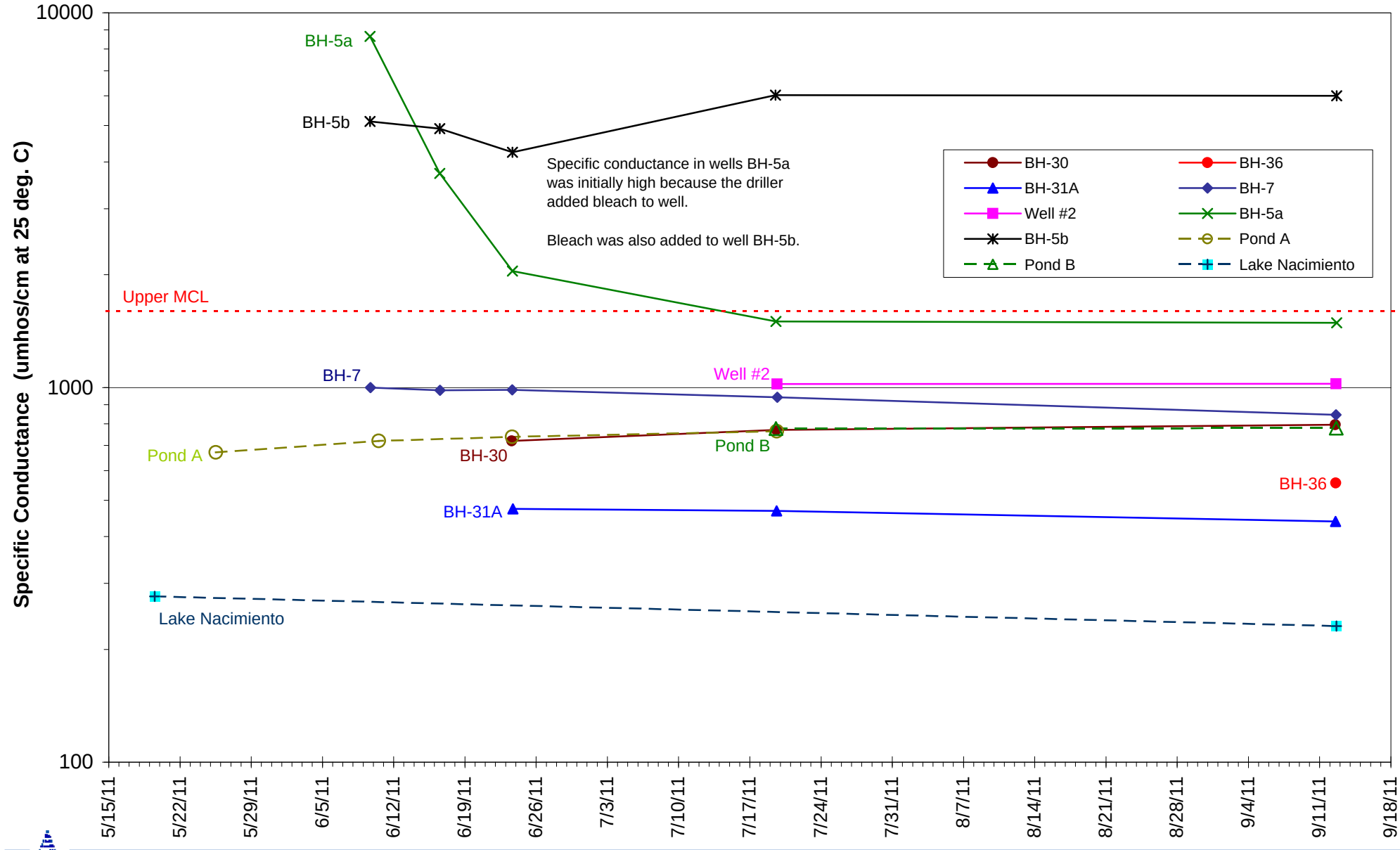

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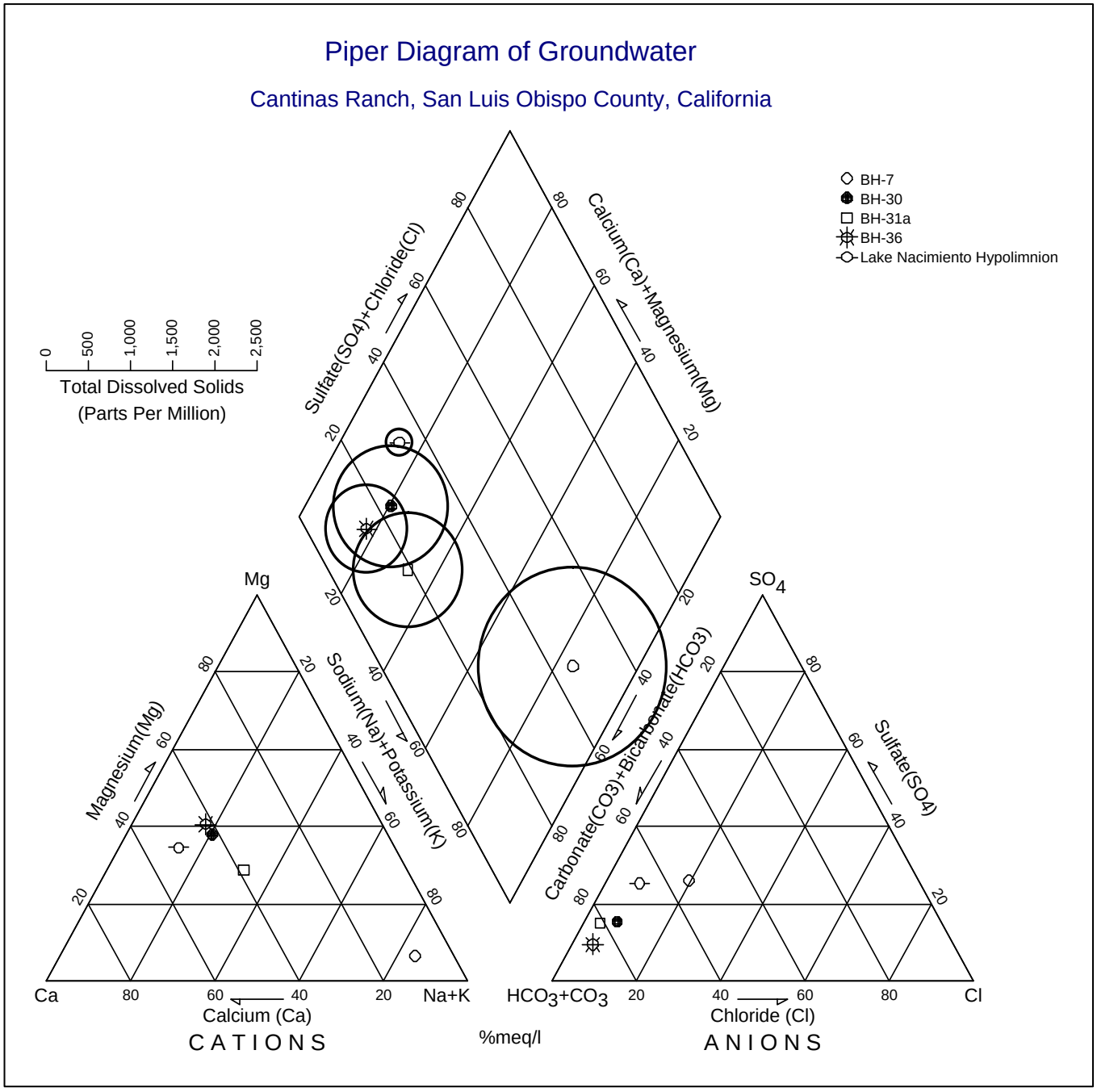
Figure 7. Specific conductance of well water and selected surface water locations, Cantinas Camp, San Luis Obispo County, California



This diagram shows cations in the ternary graph on the left and anions on the right graph. The diamond graph in the center illustrates both cations and anions. Hardness dominated water plots to the left and top of the diamond graph, soft monovalent-salt dominated water to the right, and soft alkaline water towards the bottom. The radius of circle around the plotted points represents the concentration of dissolved solids, calibrated to the scale shown.

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Figure 8. Piper diagram illustrating ionic signatures of groundwater samples collected following well development at Cantinas Camp, San Luis Obispo County, California.

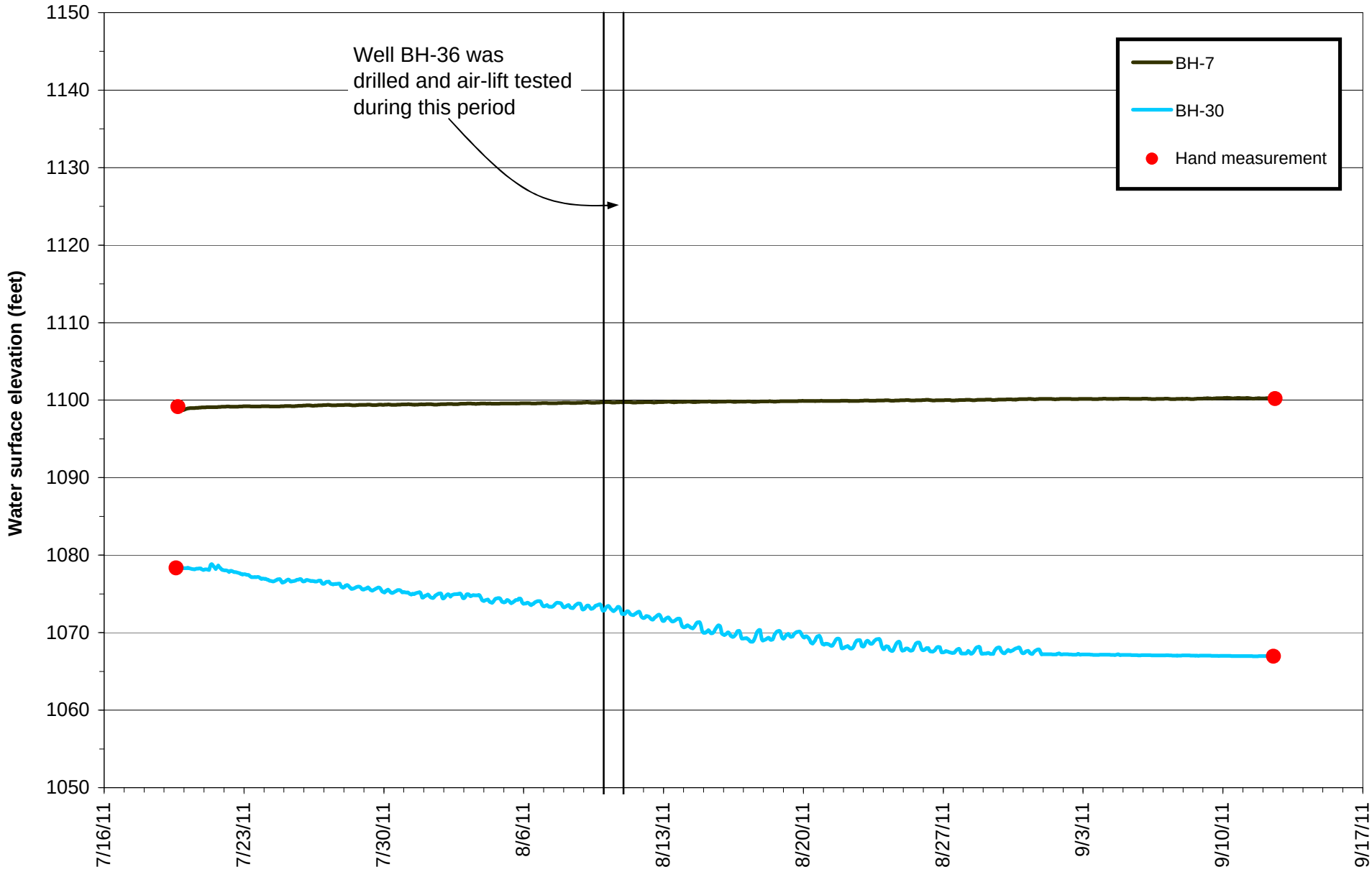

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Figure 9. Hourly groundwater levels in BH-7 and BH-30, July 19 - September 12, 2011, Cantinas Camp, San Luis Obispo County, California. Water levels in either well show no appreciable change due to short-term pumping of well BH-36.

APPENDICES

APPENDIX A

Logs of boreholes logged by Balance Hydrologics

Balance Hydrologics, Inc.

SHEET 1 OF 1

PROJECT Cantinas Camp PROJECT NO. 210067

SUBJECT Geologic log for borehole /well: BH- 2

BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN: 080-062-38

Coordinates: N 35°45'27.27" W121°0'51.74"

Ground surface elevation: 1015 ft.

Start drilling date: 5/9/11

Well completion date: 5/9/11

Drilling company: FILIPPONI & THOMPSON DRILLING, INC.

Drillers: WES POWELL, ROB THOMPSON

Depth of borehole: 300 ft.

Depth of casing: --

Screened interval: --

Diameter of casing: --

Geologists: GUSTAVO PORRAS

Depth (ft. bsg)	SC (µmhos@25°C)	Hydrology	Well	Lithology	Lithology description	Elevation (ft. WGS84)
(1)		(2)			BROWN SANDY SILTY CLAY TAN GRAVEL GRADING TO SANDSTONE	
50					GRAY GREEN SHALE	
					TAN FINE SANDSTONE GRAY GREEN SHALE	
100					GRAY TAN FINE SANDSTONE	
					TAN FINE SANDSTONE, CLAY NODULES	
150					BROWN SANDY SHALE	
	4,595	STATIC 5/10/11			BROWN SHALE-SANDSTONE INTERBEDS	
200						
250					BROWN GRAY SANDY SHALE, CALCITE CRYSTALS	775
300						

NOTES:

(1) DRILLED USING AIR

(2) NO WATER OBSERVED DURING DRILLING, SO BOREHOLE WAS BACKFILLED AND ABANDONED.

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SHEET 1 OF 1

PROJECT Cantinas Camp PROJECT NO. 210067

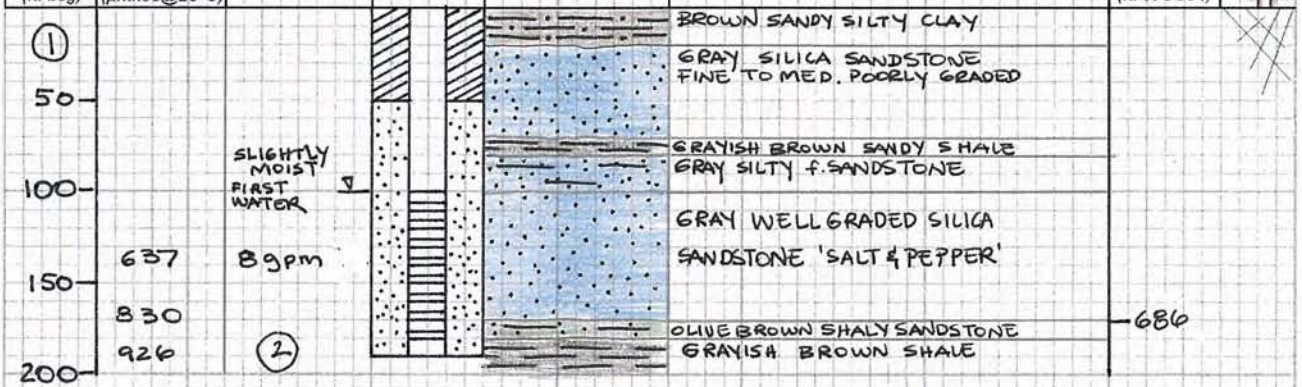
SUBJECT Geologic log for borehole /well: BH- 5a

BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN: 080-062-39
Coordinates: N35°45'47.52", W121°1'0.79"
Ground surface elevation: 856 ft.
Start drilling date: 6/7/11
Well completion date: 6/8/11
Drilling company: FILIPPONI & THOMPSON DRILLING, INC.
Drillers: WES POWELL, ROB THOMPSON

Depth of borehole: 190 ft.
Depth of casing: 180 ft.
Screened interval: 100 TO 180 ft.
Diameter of casing: 5 inches I.D.
Geologists: GUSTAVO PORRAS



NOTES:

① DRILLED USING AIR, WATER ADDED AT 100 ft. 830 umhos @ 25°C

② AFTER DEVELOPMENT ON 6/8/11 Q = 6 gpm 1,627 umhos @ 25°C

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SHEET 1 OF 1

PROJECT Cantinas Camp PROJECT NO. 210067

SUBJECT Geologic log for borehole /well: BH- 56

BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN: 080 - 062 - 39
Coordinates: N 35° 45' 51.31" W121° 0' 58.50"
Ground surface elevation: 841 ft.
Start drilling date: 5/23/11
Well completion date: 5/24/11
Drilling company: FILIPPONI & THOMPSON DRILLING, INC.
Drillers: WES POWELL, ROB THOMPSON

Depth of borehole: 300 ft.
Depth of casing: 60 ft.
Screened interval: 30 TO 50 ft.
Diameter of casing: 5 inches I.D.
Geologists: GUSTAVO PORRAS

Depth (ft. bsg)	SC (µmhos@25°C)	Hydrology	Well	Lithology	Lithology description	Elevation (ft. WGS84)
50	1203 (1)	FIRST WATER ▽ 10 gpm			DARK YELLOWISH BROWN, WELL GRADED GRAVELLY SAND	
					YELLOWISH BROWN SILTY SHALE	800
100	2300				BROWN - DARK BROWN SILTY FINE SANDSTONE	
					BROWN SILTY CLAYEY FINE SANDSTONE	
150	1720	2-3 gpm			BROWN - DARK BROWN SANDY SHALE	
					BROWN (HARD) SANDSTONE	
200	2000				GRAYISH BROWN SANDY SILT	631
					BLUE GRAY (HARD) SHALE	
250						
300		(2)			BLUE GRAY GREEN SHALE	

NOTES:

(1) DRILLED USING MUD TO 40 ft. SWITCHED TO AIR FOR REST OF DRILLING.

(2) AFTER DEVELOPMENT ON 5/24/11, Q = 10 gpm 2,000 µmhos @ 25° C

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SHEET 1 OF 1

PROJECT Cantinas Camp PROJECT NO. 210067

SUBJECT Geologic log for borehole /well: BH- 7

BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN: 080-011-011
Coordinates: N 35°45'50.64" W121°1'18.69"
Ground surface elevation: 1160 ft.
Start drilling date: 5/10/11
Well completion date: 5/12/11
Drilling company: FILIPPONI & THOMPSON DRILLING, INC.
Drillers: WES POWELL, ROB THOMPSON

Depth of borehole: 580 ft.
Depth of casing: 580 ft.
Screened interval: 280 TO 570 ft.
Diameter of casing: 5 in
Geologists: GUSTAVO PORRAS

Depth (ft. bsg)	SC (µmhos@25°C)	Hydrology	Well	Lithology	Lithology description	Elevation (ft. WGS84)
					TAN FINE SANDSTONE	
					BLUE GRAY FINE SANDSTONE	
		STATIC 5/11/11 ▼				
100	1100				TAN FINE SANDSTONE	
					BLUE GRAY SANDSTONE	
					BLUE GRAY SHALE	
200					TAN FINE SANDSTONE	950 WELL #2 WELL HEAD
	①				BLUE GRAY SANDSTONE	
300	624	FIRST WATER ▽ 1 gpm				
					BLUE GRAY SHALE	810 WELL #2 TD
400	700					
	670				GRAY GREEN SANDY SILTY SHALE	
	450				TAN BROWN GRAVELLY SAND STONE	735
	431					705
	630				GRAY GREEN SANDY SILTY SHALE	
500						
	1284					
	② 1295				BLUE GRAY SILTY SHALE	
	1314				BLUE GRAY SANDY SHALE	
	1327	③			BLUE GRAY SILTY SHALE	580
600						

NOTES:
① WATER ADDED DURING DRILLING 900 µmhos @ 25°C
② WATER ADDED IS 1330 µmhos @ 25
③ AFTER DEVELOPMENT, ON 5/16/11 Q = 10 gpm 1530 @ 25°C

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SHEET 1 OF 1

PROJECT Cantinas Camp PROJECT NO. 210067

SUBJECT Geologic log for borehole /well: BH-22

BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN: 080-062-24

Coordinates: N 35° 45' 19.76"; W 121° 1' 12.58"

Ground surface elevation: 815 ft.

Start drilling date: 5/19/11

Well completion date: 5/23/11

Drilling company: FILIPPONI & THOMPSON DRILLING, INC.

Drillers: WES POWELL, ROB THOMPSON

Depth of borehole: 420 ft.

Depth of casing: N/A

Screened interval: N/A

Diameter of casing: N/A

Geologists: GUSTAVO PORRAS

Depth (ft. bsg)	SC (µmhos@25°C)	Hydrology	Well	Lithology	Lithology description	Elevation (ft. WGS84)
0	1837	PERCHED WATER ▽ (2)			DARK BROWN LOAMY SAND W/GRAVELS	
50					BROWN SANDY GRAVEL UPTO 40 mm	
					DARK YELLOWISH BROWN SANDY SILTY SHALE	
100					GRAY SANDSTONE	
					DARK GRAY SILTY SHALE	
150					GRAY SILICA SANDSTONE	
200					GRAY TO DARK GRAY SANDY SHALE	
250					GRAY TO DARK GRAY SHALY SANDSTONE	
					GRAY TO DARK GRAY 'SALT & PEPPER' SANDSTONE	
300						515
					GRAY TO DARK GRAY SANDY SHALE	
350						
400						

NOTES:

(1) DRILLED WITH MUD TO 40 ft. bgs. SWITCHED TO AIR FOR REST OF DRILLING

(2) NOT SUFFICIENT WATER FOR CASING SO BOREHOLE BACK FILLED AND ABANDONED.

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SHEET 1 OF 1

PROJECT Cantinas Camp PROJECT NO. 210067

SUBJECT Geologic log for borehole /well: BH- 30

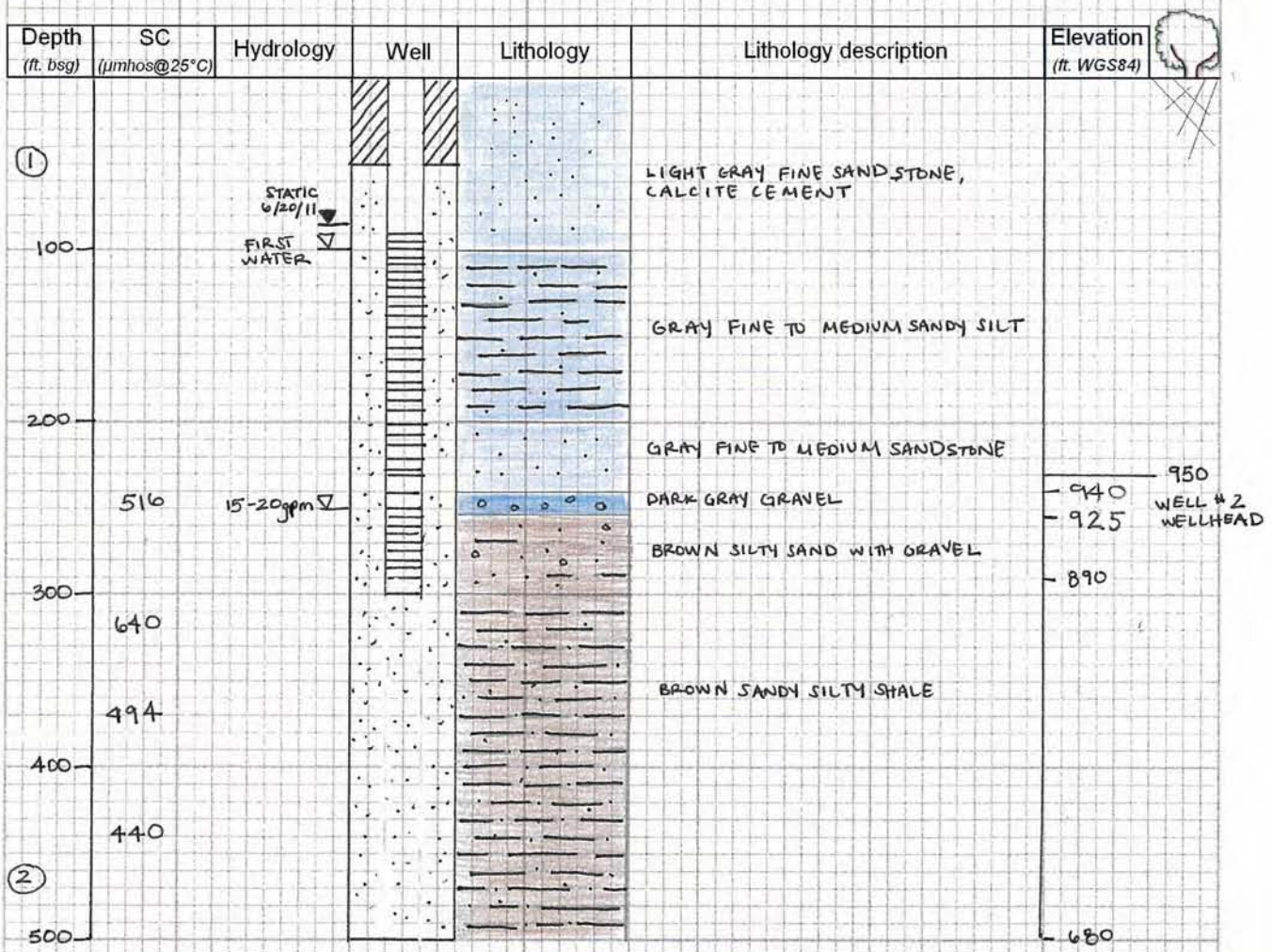
BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN:	080-011-011	Depth of borehole:	500 ft.
Coordinates:	N 35°45'55.91", W 121°1'32.66"	Depth of casing:	300 ft.
Ground surface elevation:	1180 ft.	Screened interval:	90 to 290 ft.
Start drilling date:	6/20/11	Diameter of casing:	5 inches I.D.
Well completion date:	6/21/11	Geologists:	GUSTAVO PORRAS

Drilling company: FILIPPONI & THOMPSON DRILLING, INC.

Drillers: WES POWELL, ROB THOMPSON



NOTES:

① DRILLED USING AIR

② AFTER DEVELOPMENT ON 6/23/11, Q = 6 gpm 720 µmhos @ 25° C

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SHEET 1 OF 1

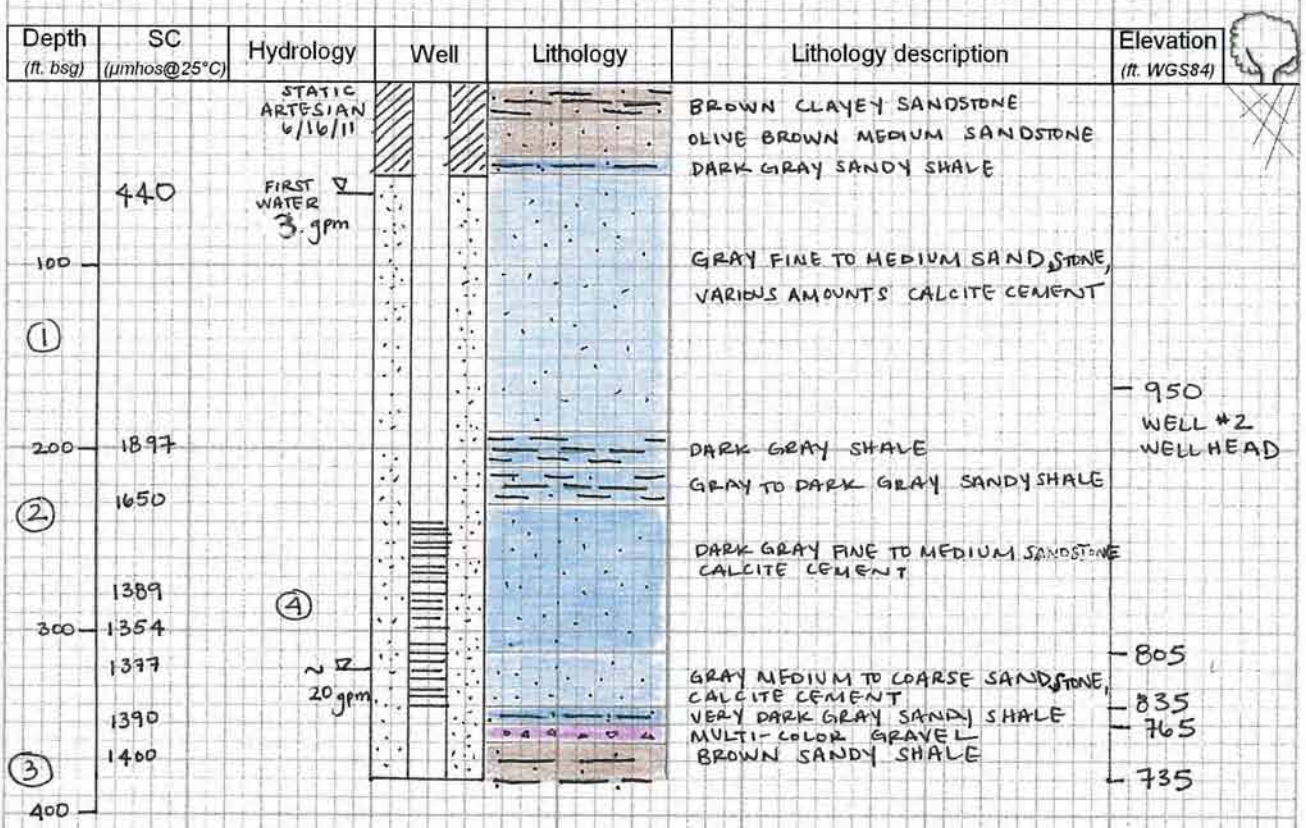
PROJECT Cantinas Camp PROJECT NO. 210067

SUBJECT Geologic log for borehole /well: BH- 31a

BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN:	080-011-011	Depth of borehole:	380 ft.
Coordinates:	N 35°45'51.36" W 121°1'26.70"	Depth of casing:	380 ft.
Ground surface elevation:	1115 ft	Screened interval:	240 to 340 ft.
Start drilling date:	6/14/11	Diameter of casing:	5 inches I.D.
Well completion date:	6/15/11	Geologists:	GUSTAVO PORRAS
Drilling company:	FILIPPONI & THOMPSON DRILLING, INC.		
Drillers:	WES POWELL, ROB THOMPSON		



NOTES:

1. DRILLED USING AIR TO DEPTH OF 160 ft.
2. DRILLED USING MUD FROM 160 TO 380 ft., WATER ADDED IS 577 µmhos @ 25°C
3. AFTER DEVELOPMENT ON 6/15/11 Q = 10 gpm 487 µmhos @ 25°C
4. BH-31 collapsed and BH-31a was drilled 50 ft. west of BH-31. The water observed at 320 ft. was in BH-31; it was not possible to detect this in BH-31a since drilling was performed with mud.

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SHEET 1 OF 1

PROJECT Cantinas Camp PROJECT NO. 210067

SUBJECT Geologic log for borehole /well: BH- 33

BY _____ DATE _____

REVIEWED BY _____ DATE _____

APN:	080-062-22	Depth of borehole:	200 ft.
Coordinates:	N 35°45'35.03 W121°1'25.93"	Depth of casing:	— —
Ground surface elevation:	995 ft	Screened interval:	— —
Start drilling date:	6/23/11	Diameter of casing:	— —
Well completion date:	6/23/11	Geologists:	GUSTAVO PORRAS

Drilling company: FILIPPONI & THOMPSON DRILLING, INC.

Drillers: WES POWELL, ROB THOMPSON

Depth (ft. bsg)	SC (µmhos@25°C)	Hydrology	Well	Lithology	Lithology description	Elevation (ft. WGS84)
① ②					DARK YELLOWISH BROWN LOAMY SAND YELLOW BROWN FINE SANDSTONE YELLOW BROWN SANDY SHALE	
100	310				GRAY BROWN FINE SANDSTONE, VARIOUS AMOUNTS CALCITE CEMENT (60-100 ft.)	895
200					DARK GRAY SANDY SHALE	

NOTES:

① DRILLED USING AIR, WATER ADDED AT 50 ft. 1117 µmhos @ 25°C

② NO WATER OBSERVED SO BOREHOLE BACK FILLED AND ABANDONED.

841 Folger Avenue • Berkeley, CA 94710-2800 • (510) 704-1000 • *(fax) 704-1001* • email: office@balancehydro.com

APPENDIX B

Water-quality analyses for wells and Lake Nacimiento

ANALYTICAL CHEMISTS
and
BACTERIOLOGISTS
Approved by State of California

SOIL CONTROL LAB

42 HANGAR WAY
WATSONVILLE
CALIFORNIA
95076
USA

TEL: 831-724-5422
FAX: 831-724-3188

Balance Hydrologics Inc.
800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Gustavo Porras

Work Order #: 1050497
Reporting Date: June 2, 2011

Date Received: May 17, 2011
Project # / Name: 210067 / Cantinas Camp
Water System #: NA
Sample Identification: 210067BH7 (Filtered), sampled 5/16/2011 3:00:00PM
Sampler Name / Co.: Gustavo Porras / Balance Hydrologics
Matrix: Water
Laboratory #: 1050497-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
General Mineral							
pH	8.4	pH Units	0.1	-	EPA 150.1	05/17/11	
Specific Conductance (EC)	1400	uS/cm	1.0	1600	SM2510B	05/17/11	
Hydroxide as OH	ND	mg/L	2.0	-	SM 2320B	05/17/11	
Carbonate as CO3	ND	mg/L	2.0	-	SM 2320B	05/17/11	
Bicarbonate as HCO3	530	mg/L	2.0	-	SM 2320B	05/17/11	
Total Alkalinity as CaCO3	440	mg/L	2.0	-	SM 2320B	05/17/11	
Hardness	100	mg/L	5.0	-	SM 2340 B	05/23/11	
* Total Dissolved Solids	1200	mg/L	10	1000	SM2540C	05/18/11	
Nitrate as NO3	1.6	mg/L	1.0	45	EPA 300.0	05/18/11	
Chloride	110	mg/L	1.0	500	EPA 300.0	05/18/11	
Sulfate as SO4	200	mg/L	1.0	500	EPA 300.0	05/18/11	
Fluoride	1.6	mg/L	0.10	2	EPA 300.0	05/18/11	
Calcium	23	mg/L	0.50	-	EPA 200.7	05/23/11	
Magnesium	10	mg/L	0.50	-	EPA 200.7	05/23/11	
Potassium	3.8	mg/L	0.50	-	EPA 200.7	05/23/11	
Sodium	240	mg/L	0.50	-	EPA 200.7	05/23/11	
Iron	ND	ug/L	50	300	EPA 200.7	05/23/11	
Manganese	ND	ug/L	20	50	EPA 200.7	05/23/11	
Copper	ND	ug/L	50	1000	EPA 200.7	05/23/11	
Zinc	ND	ug/L	50	5000	EPA 200.7	05/23/11	
Inorganics							
Nitrate/Nitrite as N	0.37	mg/L	0.10	10	EPA 300.0	05/18/11	
Arsenic	4.4	ug/L	2.0	10	EPA 200.8	05/26/11	
Barium	ND	ug/L	100	1000	EPA 200.7	05/23/11	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.
State Drinking Water Limits[1] - as listed by California Administrative Code, Title 22.
* - a * in the left hand margin of the report means that particular constituent is above the California Drinking Water Limits.

Mike Galloway

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800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Gustavo Porras

Work Order #: 1050497
Reporting Date: June 2, 2011

Date Received: May 17, 2011
Project # / Name: 210067 / Cantinas Camp
Water System #: NA
Sample Identification: 210067BH7 (Filtered), sampled 5/16/2011 3:00:00PM
Sampler Name / Co.: Gustavo Porras / Balance Hydrologics
Matrix: Water
Laboratory #: 1050497-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
Inorganics							
Boron	860	ug/L	100	-	EPA 200.7	05/23/11	
Cadmium	ND	ug/L	1.0	5	EPA 200.8	05/26/11	
Chromium	7.3	ug/L	1.0	50	EPA 200.8	05/26/11	
Cyanide (total)	ND	ug/L	100	200	SM 4500-CN F	05/31/11	
Lead	ND	ug/L	5.0	-	EPA 200.8	05/26/11	
Mercury	ND	ug/L	1.0	2	EPA 245.1	05/26/11	
Selenium	7.0	ug/L	5.0	50	EPA 200.8	05/26/11	
Silver	ND	ug/L	10	100	EPA 200.7	05/23/11	
MBAS (Surfactants)	ND	mg/L	0.10	0.5	SM5540C	05/18/11	
Aluminum	ND	ug/L	50	1000	EPA 200.7	05/23/11	
Antimony	ND	ug/L	6.0	6	EPA 200.8	05/26/11	
Beryllium	ND	ug/L	1.0	4	EPA 200.7	05/23/11	
Nickel	ND	ug/L	10	100	EPA 200.7	05/23/11	
Thallium	ND	ug/L	1.0	2	EPA 200.8	05/26/11	
Nitrite as N	ND	mg/L	0.10	1	EPA 300.0	05/18/11	
General Physical							
Color	1200	Color Units	3.0	-	SM 2120B	05/17/11	
Threshold Odor No.	ND	T.O.N.	1.0	-	SM 2150B	05/17/11	
Turbidity	2600	NTU	2.0	-	SM 2130B	05/17/11	

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Balance Hydrologics Inc.
800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Gustavo Porras

Work Order #: 1060831
Reporting Date: July 9, 2011

Date Received: June 23, 2011
Project # / Name: 210067 / Cantinas
Water System #: NA
Sample Identification: 21006071106231025BH30, sampled 6/23/2011 10:25:00AM
Sampler Name / Co.: Gustavo Porras / Balance Hydrologics
Matrix: Water
Laboratory #: 1060831-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
General Mineral							
pH	7.7	pH Units	0.1	-	EPA 150.1	06/24/11	
Specific Conductance (EC)	720	uS/cm	1.0	1600	SM2510B	06/24/11	
Hydroxide as OH	ND	mg/L	2.0	-	SM 2320B	06/24/11	
Carbonate as CO3	ND	mg/L	2.0	-	SM 2320B	06/24/11	
Bicarbonate as HCO3	410	mg/L	2.0	-	SM 2320B	06/24/11	
Total Alkalinity as CaCO3	330	mg/L	2.0	-	SM 2320B	06/24/11	
Hardness	370	mg/L	5.0	-	SM 2340 B	06/30/11	
Total Dissolved Solids	420	mg/L	10	1000	SM2540C	06/29/11	
Nitrate as NO3	ND	mg/L	1.0	45	EPA 300.0	06/24/11	
Chloride	24	mg/L	1.0	500	EPA 300.0	06/24/11	
Sulfate as SO4	65	mg/L	1.0	500	EPA 300.0	06/24/11	
Fluoride	0.45	mg/L	0.10	2	EPA 300.0	06/24/11	
Calcium	78	mg/L	0.50	-	EPA 200.7	06/30/11	
Magnesium	43	mg/L	0.50	-	EPA 200.7	06/30/11	
Potassium	4.7	mg/L	0.50	-	EPA 200.7	06/30/11	
Sodium	41	mg/L	0.50	-	EPA 200.7	06/30/11	
* Iron	5400	ug/L	50	300	EPA 200.7	06/30/11	
* Manganese	84	ug/L	20	50	EPA 200.7	06/30/11	
Copper	ND	ug/L	50	1000	EPA 200.7	06/30/11	
Zinc	ND	ug/L	50	5000	EPA 200.7	06/30/11	
Inorganics							
Nitrate/Nitrite as N	ND	mg/L	0.10	10	EPA 300.0	06/24/11	
Arsenic	5.4	ug/L	2.0	10	EPA 200.8	06/30/11	
Barium	160	ug/L	100	1000	EPA 200.7	06/30/11	

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800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Gustavo Porras

Work Order #: 1060831
Reporting Date: July 9, 2011

Date Received: June 23, 2011
Project # / Name: 210067 / Cantinas
Water System #: NA
Sample Identification: 21006071106231025BH30, sampled 6/23/2011 10:25:00AM
Sampler Name / Co.: Gustavo Porras / Balance Hydrologics
Matrix: Water
Laboratory #: 1060831-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
Inorganics							
Boron	ND	ug/L	100	-	EPA 200.7	06/30/11	
Cadmium	ND	ug/L	1.0	5	EPA 200.8	06/30/11	
Chromium	4.6	ug/L	1.0	50	EPA 200.8	06/30/11	
Cyanide (total)	ND	ug/L	100	200	SM 4500-CN F	07/08/11	
Lead	ND	ug/L	5.0	-	EPA 200.8	06/30/11	
Mercury	ND	ug/L	1.0	2	EPA 245.1	07/08/11	
Selenium	ND	ug/L	5.0	50	EPA 200.8	06/30/11	
Silver	ND	ug/L	10	100	EPA 200.7	06/30/11	
MBAS (Surfactants)	ND	mg/L	0.025	0.5	SM5540C	06/27/11	
* Aluminum	5200	ug/L	50	1000	EPA 200.7	06/30/11	
Antimony	ND	ug/L	6.0	6	EPA 200.8	06/30/11	
Beryllium	ND	ug/L	1.0	4	EPA 200.7	06/30/11	
Nickel	14	ug/L	10	100	EPA 200.7	06/30/11	
Thallium	ND	ug/L	1.0	2	EPA 200.8	06/30/11	
Nitrite as N	ND	mg/L	0.10	1	EPA 300.0	06/24/11	
General Physical							
Color	20	Color Units	3.0	-	SM 2120B	06/24/11	
Threshold Odor No.	ND	T.O.N.	1.0	-	SM 2150B	06/24/11	
Turbidity	120	NTU	0.10	-	SM 2130B	06/24/11	

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Balance Hydrologics Inc.
800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Gustavo Porras

Work Order #: 1060627
Reporting Date: July 9, 2011

Date Received: June 17, 2011
Project # / Name: 210067 / Cantinas
Water System #: NA
Sample Identification: 110616:1340 BH-31A, sampled 6/16/2011 1:40:00PM
Sampler Name / Co.: Sarah Richmond / Balance Hydrologics
Matrix: Water
Laboratory #: 1060627-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
General Mineral							
pH	8.2	pH Units	0.1	-	EPA 150.1	06/17/11	
Specific Conductance (EC)	510	uS/cm	1.0	1600	SM2510B	06/17/11	
Hydroxide as OH	ND	mg/L	2.0	-	SM 2320B	06/17/11	
Carbonate as CO3	ND	mg/L	2.0	-	SM 2320B	06/17/11	
Bicarbonate as HCO3	390	mg/L	2.0	-	SM 2320B	06/17/11	
Total Alkalinity as CaCO3	320	mg/L	2.0	-	SM 2320B	06/17/11	
Hardness	270	mg/L	5.0	-	SM 2340 B	06/23/11	
Total Dissolved Solids	340	mg/L	20	1000	SM2540C	06/20/11	
Nitrate as NO3	ND	mg/L	1.0	45	EPA 300.0	06/18/11	
Chloride	11	mg/L	1.0	500	EPA 300.0	06/18/11	
Sulfate as SO4	57	mg/L	1.0	500	EPA 300.0	06/18/11	
Fluoride	0.28	mg/L	0.10	2	EPA 300.0	06/18/11	
Calcium	62	mg/L	0.50	-	EPA 200.7	06/23/11	
Magnesium	28	mg/L	0.50	-	EPA 200.7	06/23/11	
Potassium	6.8	mg/L	0.50	-	EPA 200.7	06/23/11	
Sodium	56	mg/L	0.50	-	EPA 200.7	06/23/11	
* Iron	18000	ug/L	50	300	EPA 200.7	06/23/11	
* Manganese	430	ug/L	20	50	EPA 200.7	06/23/11	
Copper	ND	ug/L	50	1000	EPA 200.7	06/23/11	
Zinc	69	ug/L	50	5000	EPA 200.7	06/23/11	
Inorganics							
Nitrate/Nitrite as N	ND	mg/L	0.10	10	EPA 300.0	06/18/11	
Arsenic	10	ug/L	2.0	10	EPA 200.8	06/22/11	
Barium	200	ug/L	100	1000	EPA 200.7	06/23/11	

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Balance Hydrologics Inc.
800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Gustavo Porras

Work Order #: 1060627
Reporting Date: July 9, 2011

Date Received: June 17, 2011
Project # / Name: 210067 / Cantinas
Water System #: NA
Sample Identification: 110616:1340 BH-31A, sampled 6/16/2011 1:40:00PM
Sampler Name / Co.: Sarah Richmond / Balance Hydrologics
Matrix: Water
Laboratory #: 1060627-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
Inorganics							
Boron	ND	ug/L	100	-	EPA 200.7	06/23/11	
Cadmium	ND	ug/L	1.0	5	EPA 200.8	06/22/11	
Chromium	25	ug/L	1.0	50	EPA 200.8	06/22/11	
Cyanide (total)	ND	ug/L	100	200	SM 4500-CN F	07/08/11	
Lead	13	ug/L	5.0	-	EPA 200.8	06/22/11	
Mercury	ND	ug/L	1.0	2	EPA 245.1	06/24/11	
Selenium	ND	ug/L	5.0	50	EPA 200.8	06/22/11	
Silver	ND	ug/L	10	100	EPA 200.7	06/23/11	
MBAS (Surfactants)	ND	mg/L	0.025	0.5	SM5540C	06/17/11	
* Aluminum	14000	ug/L	50	1000	EPA 200.7	06/23/11	
Antimony	ND	ug/L	6.0	6	EPA 200.8	06/22/11	
Beryllium	1.0	ug/L	1.0	4	EPA 200.7	06/23/11	
Nickel	26	ug/L	10	100	EPA 200.7	06/23/11	
Thallium	ND	ug/L	1.0	2	EPA 200.8	06/22/11	
Nitrite as N	ND	mg/L	0.10	1	EPA 300.0	06/18/11	
General Physical							
Color	150	Color Units	3.0	-	SM 2120B	06/17/11	
Threshold Odor No.	ND	T.O.N.	1.0	-	SM 2150B	06/17/11	
Turbidity	840	NTU	0.40	-	SM 2130B	06/17/11	

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Balance Hydrologics Inc.
800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Barry Hecht

Work Order #: 1080480
Reporting Date: August 24, 2011

Date Received: August 17, 2011
Project # / Name: 210067 / Cantinas Ranch
Water System #: Balance Hydrologics
Sample Identification: BH-36, sampled 8/16/2011 12:00:00AM
Sampler Name / Co.: COC Not Signed / Balance Hydrologics
Matrix: Water
Laboratory #: 1080480-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
General Mineral							
pH	7.3	pH Units	0.1	-	EPA 150.1	08/17/11	
Specific Conductance (EC)	560	uS/cm	1.0	1600	SM2510B	08/17/11	
Hydroxide as OH	ND	mg/L	2.0	-	SM 2320B	08/17/11	
Carbonate as CO3	ND	mg/L	2.0	-	SM 2320B	08/17/11	
Bicarbonate as HCO3	330	mg/L	2.0	-	SM 2320B	08/17/11	
Total Alkalinity as CaCO3	270	mg/L	2.0	-	SM 2320B	08/17/11	
Hardness	280	mg/L	5.0	-	SM 2340 B	08/19/11	
Total Dissolved Solids	310	mg/L	10	1000	SM2540C	08/17/11	
Nitrate as NO3	ND	mg/L	1.0	45	EPA 300.0	08/17/11	
Chloride	11	mg/L	1.0	500	EPA 300.0	08/17/11	
Sulfate as SO4	29	mg/L	1.0	500	EPA 300.0	08/17/11	
Fluoride	0.22	mg/L	0.10	2	EPA 300.0	08/17/11	
Calcium	56	mg/L	0.50	-	EPA 200.7	08/19/11	
Magnesium	33	mg/L	0.50	-	EPA 200.7	08/19/11	
Potassium	3.3	mg/L	0.50	-	EPA 200.7	08/19/11	
Sodium	25	mg/L	0.50	-	EPA 200.7	08/19/11	
Iron	53	ug/L	50	300	EPA 200.7	08/19/11	
Manganese	20	ug/L	20	50	EPA 200.7	08/19/11	
Copper	ND	ug/L	50	1000	EPA 200.7	08/19/11	
Zinc	ND	ug/L	50	5000	EPA 200.7	08/19/11	
Inorganics							
Nitrate/Nitrite as N	ND	mg/L	0.10	10	EPA 300.0	08/17/11	
Arsenic	ND	ug/L	2.0	10	EPA 200.8	08/18/11	
Barium	120	ug/L	100	1000	EPA 200.7	08/19/11	

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Balance Hydrologics Inc.
800 Bancroft Way, Suite 101
Berkeley, CA 94710-2227
Attn: Barry Hecht

Work Order #: 1080480
Reporting Date: August 24, 2011

Date Received: August 17, 2011
Project # / Name: 210067 / Cantinas Ranch
Water System #: Balance Hydrologics
Sample Identification: BH-36, sampled 8/16/2011 12:00:00AM
Sampler Name / Co.: COC Not Signed / Balance Hydrologics
Matrix: Water
Laboratory #: 1080480-01

	Results	Units	RL	State Drinking Water Limits [1]	Analysis Method	Date Analyzed	Flags
Inorganics							
Boron	ND	ug/L	100	-	EPA 200.7	08/19/11	
Cadmium	ND	ug/L	1.0	5	EPA 200.8	08/18/11	
Chromium	ND	ug/L	1.0	50	EPA 200.8	08/18/11	
Lead	ND	ug/L	5.0	-	EPA 200.8	08/18/11	
Mercury	ND	ug/L	1.0	2	EPA 245.1	08/18/11	
Selenium	ND	ug/L	5.0	50	EPA 200.8	08/18/11	
Silver	ND	ug/L	10	100	EPA 200.7	08/19/11	
MBAS (Surfactants)	ND	mg/L	0.025	0.5	SM5540C	08/18/11	
Aluminum	ND	ug/L	50	1000	EPA 200.7	08/19/11	
Antimony	ND	ug/L	6.0	6	EPA 200.8	08/18/11	
Beryllium	ND	ug/L	1.0	4	EPA 200.7	08/19/11	
Nickel	ND	ug/L	10	100	EPA 200.7	08/19/11	
Thallium	ND	ug/L	1.0	2	EPA 200.8	08/18/11	
Nitrite as N	ND	mg/L	0.10	1	EPA 300.0	08/17/11	
General Physical							
Color	ND	Color Units	3.0	-	SM 2120B	08/17/11	
Threshold Odor No.	ND	T.O.N.	1.0	-	SM 2150B	08/17/11	
Turbidity	0.64	NTU	0.10	-	SM 2130B	08/17/11	

RL - are levels down to which we can quantify with reliability, a result below this level is reported as "ND" for Not Detected.
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APPENDIX C

Copies of drilling permits

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

RECD APR 12 2011

OFFICE USE	
Permit No	2010-140
Submittal Complete	☐
Date	4/12/2011
By	SBC
Attachments: Yes ☐ No ☐	
SR No	

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Ranhel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, Inc.
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road - BH-5a City or Area of County: Lake Nacimiento
Assessor's Parcel No.: 080-062-039 Township: 25 S Range: 9 E Section: 8
Parcel Size (acres): 20 + In Coastal Zone? NO GPS Coordinates: 35-45-46.4 N 121-00-59.5 W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth: 400' Casing Diameter: 5" Annular Seal Depth: 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed: Ned M. Thompson (Drilling Contractor) Date: 11/12/10

Print Drilling Contractor Name: Ned M. Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By: CR Date: 4/13/11 Fee Paid: $ 960.00 Check # 4819
Well Site Approved: Yes ☒ No ☐ By: [signature] Date: 4/7/2011
Site Letter: 4/7/2011 X-Conn Letter: [signature] Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates: 35.71.312 N 121.01.53 W
Special Requirements and /or Comments for Drilling Contractor

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for
Well Seal Witnessed? Yes ☐ No ☐ By: Date: Seal Depth:
Well Seal GPS Coordinates: N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO
PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

RECD APR 12 2011

OFFICE USE	
Permit No	2010-138
Submittal Complete	☑
Date	4/7/11
By	Obed C.
Attachments: Yes ☐ No ☐	
SR No.	

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch — Phone No.: Ranhel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch — Phone No.:
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson — C-57 License No.: 432680
Drilling Company Name: Filipponi & Thompson Drilling, Inc.
Business Address: P.O. Box 845 - Atascadero, CA 93423 — Phone No.: 466-1271

Proposed Well Site Address: Lynch Canyon Road - Well BH5b — City or Area of County: Lake Nacimiento
Assessor's Parcel No.: 080-062-039 — Township: 25 S — Range: 9 E — Section: 8
Parcel Size (acres): 20 + — In Coastal Zone? NO — GPS Coordinates: 35-45-51.3 N 121-00-58.5 W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth: 400' — Casing Diameter: 5" — Annular Seal Depth: 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned M. Thompson — Date 11/12/10
Drilling Contractor
Print Drilling Contractor Name Ned M. Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By: CR — Date: 11/19/10 — Fee Paid $: 961.00 — Check #: 8319
Well Site Approved Yes ☑ No ☐ By: CL Yung — Date: 4/7/2011
Site Letter: 4/8/11 — X-Conn Letter: — Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates: 35.76426 N 120.01619 W
Special Requirements and /or Comments for Drilling Contractor
Do not allow drill mud into creek

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for
Well Seal Witnessed? Yes ☐ No ☐ By — Date — Seal Depth
Well Seal GPS Coordinates N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

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COUNTY OF SAN LUIS OBISPO
PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

RECD APR 12 2011

OFFICE USE
Permit No. 2011-142
Submittal Complete ☐
Date 4/12/2011
By N Bud
Attachments: Yes ☐ No ☐
SR No. 109109

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Rachel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, Inc.
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road - Well BH-7 City or Area of County: Lake Nacimiento
Assessor's Parcel No. 080-011-011 Township 25 S 1 Range 9 E Section 8
Parcel Size (acres) 20 + In Coastal Zone? NO GPS Coordinates 35-45-50.6 N 121-01-18.7 W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth 400' Casing Diameter 5" Annular Seal Depth 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned M. Thompson Date 11/12/10
Drilling Contractor
Print Drilling Contractor Name Ned M. Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By CA Date 11/15/10 Fee Paid $ 410.00 Check # 19819
Well Site Approved Yes ☒ No ☐ By [signature] Date 4/7/2011
Site Letter 4/8/11 X-Conn Letter Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates: 35.71.40. N 121.02192 W
Special Requirements and /or Comments for Drilling Contractor

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for
Well Seal Witnessed? Yes ☐ No ☐ By Date Seal Depth
Well Seal GPS Coordinates N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

REC'D JUN 15 2011

COUNTY OF SAN LUIS OBISPO
PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

OFFICE USE
Permit No. [illegible]
[illegible]
SR No.

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Rachel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling INC
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road- BH -30 City or Area of County: Lake Nacimiento
Assessor's Parcel No. 080-011-011 Township ____ Range ____ Section ____
Parcel Size (acres) 20 + In Coastal Zone? no GPS Coordinates 35°45'56.2" N 121° 01' 33.1" W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth 300' Casing Diameter 5" Annular Seal Depth 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain ____

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain ____

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed [signature] Date 5-6-11
Drilling Contractor

Print Drilling Contractor Name NED M. THOMPSON

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By [illegible] Date [illegible] Fee Paid $ [illegible] Check # [illegible]
Well Site Approved Yes ☒ No ☐ By [illegible] Date 6/10/2011
Site Letter ____ X-Conn Limit ____ [illegible] Yes ☐ No ☐
Well Site Approval GPS Coordinates [illegible] N [illegible] W
Special Requirements and/or Comments to Drilling Contractor ____

Water Quality Testing Required ____ Constituents Tested ____
Well Seal Witnessed ____ Seal Depth ____
Well Seal GPS Coordinates ____ N ____ W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

OFFICE USE
Permit No. 3115-33
Submittal Complete ☑
Date 6/6/11
By
Attachments: Yes ☐ No ☐
SR No. 11609

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Rachel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy-- Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, INC
Business Address: P.O. BOx 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road - BH -31 City or Area of County: Lake Nacimiento
Assessor's Parcel No.: 080-011-011 Township: Range: Section:
Parcel Size (acres): 20 + In Coastal Zone? No GPS Coordinates 35° 45' 51.1" N 121° 01' 26.2" W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth: 500' Casing Diameter: 5" Annular Seal Depth: 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned m Thompson Date 5-6-11
Drilling Contractor
Print Drilling Contractor Name Ned m Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By: Date: 6-7-11 Fee Paid $ Check # 15132
Well Site Approved Yes ☒ No ☐ By: Date 6/8/2011
Site Letter X-Conn Letter Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates: 35.76415 N 121.02399 W
Special Requirements and /or Comments for Drilling Contractor:

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for:
Well Seal Witnessed? Yes ☐ No ☐ By: Date: Seal Depth:
Well Seal GPS Coordinates: N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT

Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

OFFICE USE
Permit No 2011-081
Submittal Complete ☒
Date 8/5/11
By: CB
Attachments: Yes ☐ No ☐
SR No. 11285

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Rachel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, Inc.
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road - BH-36 City or Area of County: Lake Nacimiento
Assessor's Parcel No. 080-062-022 Township Range Section
Parcel Size (acres) 20 In Coastal Zone? NO GPS Coordinates 35-45-50.9 N 121-01-32.0 W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth 400' ~~800'~~ Casing Diameter 5" Annular Seal Depth 50'
Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned M. Thompson Date 8/4/11
Drilling Contractor
Print Drilling Contractor Name Ned M. Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By DG Date 8-4-11 Fee Paid $ 394.00 Check # 9132
Well Site Approved Yes ☒ No ☐ By BWTP Mar Date 8/9/2011
Site Letter 8/9/11 X-Conn Letter Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates 35.7641783 N 121.0656329 W
Special Requirements and /or Comments for Drilling Contractor

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for
Well Seal Witnessed? Yes ☐ No ☐ By Date Seal Depth
Well Seal GPS Coordinates N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT

Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

RECD APR 18 2011

OFFICE USE
Permit No.
Submittal Complete
Date
By
Attachments: Yes ☐ No ☐
SR No. 1 of 2

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas — Phone No. 461-5765 - Rachel
Name of Property Owner: Camp Nacimiento Foundation - Cantinas — Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson — C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, Inc.
Business Address: P.O. Box 845 - Atascadero, CA 93423 — Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road - Well BH-2 — City or Area of County: Lake Nacimiento
Assessor's Parcel No. 080-062-038 — Township 25 S — Range 9 E — Section 17
Parcel Size (acres) 20 ± — In Coastal Zone? NO — GPS Coordinates 35-45-27.2 N 121-00-51.7 W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth 400' — Casing Diameter 5" — Annular Seal Depth 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned M. Thompson — Drilling Contractor — **Date** 11/12/10

Print Drilling Contractor Name Ned M. Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By CR — Date 4/18/11 — Fee Paid $ 410.05 — Check # 13719
Well Site Approved Yes ☒ No ☐ By [signature] — Date 4/7/2011
Site Letter 4/7/11 — X-Conn Letter — EHS Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates 35.45757 N 121.01491 W
Special Requirements and /or Comments for Drilling Contractor

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for
Well Seal Witnessed? Yes ☐ No ☐ By — Date — Seal Depth
Well Seal GPS Coordinates N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO
PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

REC'D MAY 20 2011

OFFICE USE	
Permit No	2011-235
Submittal Complete	☐
Date	/ /
By:	
Attachments: Yes ☐ No ☐	
SR No.	

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.: Rachel: 461-5765
Name of Property Owner: SAME Phone No.:
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No.: 432680
Drilling Company Name: Filipponi & Thompson Drilling, Inc.
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No.: 466-1271

Proposed Well Site Address: Lynch Canyon Road - Well BH-22 City or Area of County: Lake Nacimeinto
Assessor's Parcel No.: 080-011-011 Township: 25 S Range: 9 E Section: 8
Parcel Size (acres): 20+ In Coastal Zone? NO GPS Coordinates: 35-45-19.5 N 121-01-12.2 W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth: 400' Casing Diameter: 5" Annular Seal Depth: 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed: Ned M. Thomp Date: 5/10/11
Drilling Contractor
Print Drilling Contractor Name: Ned M. Thompsonn

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By: CR Date: 5/10/11 Fee Paid $: 401.00 Check #: 19236
Well Site Approved Yes ☒ No ☐ By: Ruth Quick Date: 5/13/2011
Site Letter X-Conn Letter Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates: 35.756489 N 121.181983 W
Special Requirements and /or Comments for Drilling Contractor

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for
Well Seal Witnessed? Yes ☐ No ☐ By Date Seal Depth
Well Seal GPS Coordinates N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

OFFICE USE
Permit No. 3115-33
Submittal Complete ☑
Date 6/6/11
By
Attachments: Yes ☐ No ☐
SR No. 11609

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Rachel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy-- Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, INC
Business Address: P.O. BOx 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road - BH -31 City or Area of County: Lake Nacimiento
Assessor's Parcel No.: 080-011-011 Township: Range: Section:
Parcel Size (acres): 20 + In Coastal Zone? No GPS Coordinates 35° 45' 51.1" N 121° 01' 26.2" W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth: 500' Casing Diameter: 5" Annular Seal Depth: 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned m Thompson Date 5-6-11
Drilling Contractor
Print Drilling Contractor Name Ned m Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By: Date: 6-7-11 Fee Paid $ Check # 15132
Well Site Approved Yes ☒ No ☐ By: Date 6/8/2011
Site Letter X-Conn Letter Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates: 35.76415 N 121.02399 W
Special Requirements and /or Comments for Drilling Contractor:

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for:
Well Seal Witnessed? Yes ☐ No ☐ By: Date: Seal Depth:
Well Seal GPS Coordinates: N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT

Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

OFFICE USE
Permit No 2011-72
Submittal Complete ☒
Date 6/1/11
By: MA
Attachments: Yes ☐ No ☐
SR No. 111164

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Rachel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300A— Malibu, Ca 90266
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, INC
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road- BH- 32 City or Area of County: Lake Nacimiento
Assessor's Parcel No. 080-052-022 Township Range Section
Parcel Size (acres) 20 + In Coastal Zone? No GPS Coordinates 35° 45' 44.5" N 121° 01' 25.2" W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth 500' Casing Diameter 5" Annular Seal Depth 50'

Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned Thompson **Date** 5-6-11
Drilling Contractor

Print Drilling Contractor Name NED M. THOMPSON

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By MA Date 6-7-11 Fee Paid $ 476.00 Check # 19132
Well Site Approved Yes ☒ No ☐ By CL Gregor Date 6/8/2011
Site Letter X-Conn Letter Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates 35.76287 N 121.82361 W
Special Requirements and /or Comments for Drilling Contractor

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for
Well Seal Witnessed? Yes ☐ No ☐ By Date Seal Depth
Well Seal GPS Coordinates N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

OFFICE USE
Permit No 2011-54
Submittal Complete ☐
Date
By
Attachments Yes ☐ No ☐
11140
SR No.

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT
Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Ranhel: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy- Ste. 300A - Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, INC
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road- BH -33 City or Area of County: Lake Nacimiento
Assessor's Parcel No. 080-062-022 Township ____ Range ____ Section ____
Parcel Size (acres) 20++ In Coastal Zone? No GPS Coordinates 35° 45' .03" N 121° 01" 25.4" W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth 300' Casing Diameter 5" Annular Seal Depth 50'
Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain ____

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain ____

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed: Ned M. Thompson (Drilling Contractor) Date 5-6-11
Print Drilling Contractor Name NED M. Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By [illegible] Date [illegible] Fee Paid $ [illegible] Check # [illegible]
Well Site Approved Yes ☒ No ☐ By [signature] Date 6/8/2011
Site Letter ____ X-Conn Letter ____ Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates 35.75978 N 121.02376 W
Special Requirements and /or Comments for Drilling Contractor ____

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for ____
Well Seal Witnessed? Yes ☐ No ☐ By ____ Date ____ Seal Depth ____
Well Seal GPS Coordinates ____ N ____ W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

COUNTY OF SAN LUIS OBISPO

PUBLIC HEALTH DEPARTMENT

Environmental Health Services
2156 Sierra Way • P.O. Box 1489
San Luis Obispo, CA 93406-1489
Phone: (805) 781-5544 FAX: (805) 781-4211

OFFICE USE
Permit No:
Submittal Complete:
Date:
By:
Attachments: Yes ☐ No ☐
SR No:

WELL PERMIT APPLICATION

Name of Well Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No. Ranch: 461-5765
Name of Property Owner: Camp Nacimiento Foundation - Cantinas Ranch Phone No.
Mailing Address of Property Owner: 22917 Pacific Coast Hwy - Ste. 300AA- Malibu, CA 90265
Name of Drilling Contractor: Ned M. Thompson C-57 License No. 432680
Drilling Company Name: Filipponi & Thompson Drilling, INC
Business Address: P.O. Box 845 - Atascadero, CA 93423 Phone No. 466-1271

Proposed Well Site Address: Lynch Canyon Road - BH -35 City or Area of County: Lake Macimiento
Assessor's Parcel No. 080-062-023 Township Range Section
Parcel Size (acres) 20 + In Coastal Zone? No GPS Coordinates 35° 45' 42.1" N 121° 01' 13.0" W
Is the parcel served water by a public water agency? Yes ☐ No ☒ Is the proposed well located within city limits? Yes ☐ No ☒

Well Type	Purpose of Well		Drilling Method	
☒ Construction	☐ Domestic Private	☐ Irrigation	☐ Rotary	☐ Cable Tool
☐ Repair/Modify	☒ Domestic Public	☐ Livestock Water	☐ Reverse Rotary	☒ Air Rotary

Proposed Depth 500' Casing Diameter 5" Annular Seal Depth 50'
Do you anticipate drilling into a water bearing formation that has the potential to degrade a higher quality aquifer? Yes ☐ No ☒
If yes, please explain

Is there any known potential to encounter a water bearing formation where levels of water quality constituents such as nitrate, selenium, hydrogen sulfide, boron, organics, etc., are a concern? Yes ☐ No ☒ If yes, please explain

I hereby agree to comply with all applicable laws and regulations of the County of San Luis Obispo and the State of California pertaining to well construction, destruction, repair or modification. Within sixty days after completion of the well, I will furnish Environmental Health Services with a completed well log. This application becomes a valid permit following sign off by Environmental Health Services.
Only the above named C-57 Licensed driller may sign this permit application.

Signed Ned M Thompson **Date** 5-6-11
Drilling Contractor
Print Drilling Contractor Name NED M. Thompson

Note: The "Well Permit Plot Plan" shall be attached to this application and indicate within a two hundred foot radius around the proposed well the following items: A) Property lines, B) Sewage disposal and/or sewer lines, C) Animal enclosures and/or any other concentrated sources of pollution, D) All intermittent or perennial, natural or artificial water bodies or water courses, E) Surface water drainage pattern of the site, F) Existing wells, G) Access roads. The proposed site shall be designated with a flagged surveyor's stake labeled "Well Site." (See second page) **Drilling shall not commence until this application is approved.**

OFFICE USE ONLY

Received By: [illegible] Date: 6 7 11 Fee Paid $ 461.50 Check # 1649B2
Well Site Approved Yes ☒ No ☐ By: [illegible] Date: 6/8/2011
Site Letter X-Conn Letter Final Letter Sent? Yes ☐ No ☐
Well Site Approval GPS Coordinates: 35.76172 N 121.02020 W
Special Requirements and /or Comments for Drilling Contractor:

Water Quality Testing Conducted? Yes ☐ No ☐ Constituents Tested for:
Well Seal Witnessed? Yes ☐ No ☐ By: Date: Seal Depth:
Well Seal GPS Coordinates: N W

PERMIT IS VALID FOR SIX MONTHS FROM ISSUANCE

APPENDIX D

Photographs of completed wells

Balance Hydrologics, Inc.®

Appendix D **Completed well, BH-5a**
Cantinas Camp, San Luis Obispo, California

Balance Hydrologics, Inc.®

Appendix D **Completed well, BH-5b**
Cantinas Camp, San Luis Obispo, California

Balance Hydrologics, Inc.®

Appendix D **Completed well, BH-31A**
Cantinas Camp, San Luis Obispo, California

Balance Hydrologics, Inc.®

Appendix D **Completed well, BH-30**
Cantinas Camp, San Luis Obispo, California

Balance Hydrologics, Inc.®

Appendix D **Completed well, BH-7**
Cantinas Camp, San Luis Obispo, California

Balance Hydrologics, Inc.®

Appendix D **Completed well, BH-36**
Cantinas Camp, San Luis Obispo, California

APPENDIX E

Driller's completion reports of completed wells and dry boreholes

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Page 1 of 1

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e0120567

Owner's Well Number BH-5a

Date Work Began 06/07/2011 Date Work Ended 6/8/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2010-140 Permit Date 4/4/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ⊙ Vertical ○ Horizontal ○ Angle Specify

Drilling Method ROTARY Drilling Fluid AIR

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	3	TOP SOIL
3	21	SANDY BROWN CLAY
21	80	BROWN SHALE
80	120	SOFT GREY SANDSTONE
120	180	SOFT BROWN SANDSTONE
180	200	SOFT GREY SANDSTONE
		THE AIR LIFT TEST IS ONLY APPROXIMATE.
		A TEST PUMP IS RECOMMENDED FOR AN
		ACCURATE ACCOUNT. (WP)

Total Depth of Boring 200 Feet

Total Depth of Completed Well 190 Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-5a

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 464 Sec N Longitude 121 Deg 0 Min 595 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 062 Parcel 039

Township 25 S Range 9 E Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

⊙ New Well

○ Modification/Repair
- ○ Deepen
- ○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

⊙ Water Supply
- ☑ Domestic ☑ Public
- ☐ Irrigation ☐ Industrial

○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level 50 (Feet) Date Measured 06/08/2011

Estimated Yield * 6 (GPM) Test Type Air Lift

Test Length 2.0 (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	100	10"	Blank	PVC F-480	SDR-21	5"		
100	180	10"	Screen	PVC F-480	SDR-21	5"		0.040
180	190	10"	Blank	PVC F-480	SDR-21	5"		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	52	Cement	
52	190	Fill	8" X 12" SAND

Attachments

- ☐ Geologic Log
- ☐ Well Construction Diagram
- ☐ Geophysical Log(s)
- ☐ Soil/Water Chemical Analyses
- ☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed Ned Thompson C-57 Licensed Water Well Contractor 6-13-11 Date Signed 432680 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL PERMIT PLOT PLAN

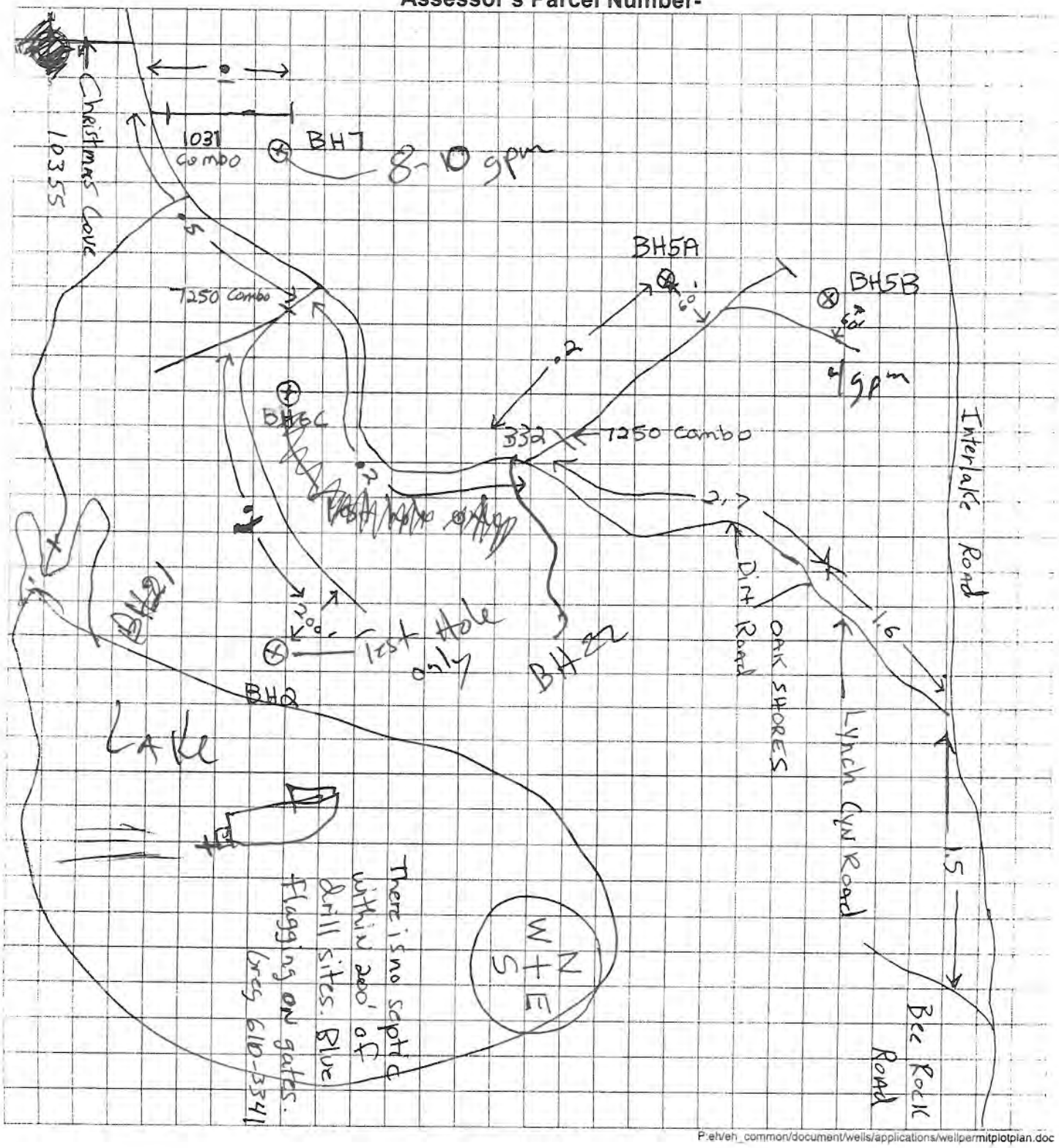
SAN LUIS OBISPO COUNTY ENVIRONMENTAL HEALTH SERVICES
2156 Sierra Way
San Luis Obispo, California 93401
Telephone: 805-781-5544

CANTINAS RANCH

SCALE: ¼" = 25'

INDICATE BELOW THE **EXACT LOCATION** OF PROPOSED WELL WITH RESPECT TO THE FOLLOWING ITEMS: PROPERTY LINES, WATER BODIES OR WATER COURSES, DRAINAGE PATTERN, ROADS, EXISTING WELLS, SEWERS AND PRIVATE SEWAGE DISPOSAL SYSTEMS, ANIMAL ENCLOSURES AND ANY OTHER CONCENTRATED SOURCES OF POLLUTION. **INCLUDE DIMENSIONS. ALL PROPOSED WELL SITES SHALL BE DESIGNATED WITH A FLAGGED SURVEYOR'S STAKE LABELED "WELL SITE." DRILLING SHALL NOT COMMENCE UNTIL THIS APPLICATION IS APPROVED.**

Assessor's Parcel Number-



*The free Adobe Reader may be used to view and com ▸ this form. However, software must be purchased to complet e, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0120568

Page 1 of 1

Owner's Well Number BH-5b

Date Work Began 05/14/2011 Date Work Ended 5/26/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2010-138 Permit Date 4/4/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid BENTONITE

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	37	SAND & GRAVEL
37	115	SOFT BROWN SANDSTONE
115	120	HARD GREY SANDSTONE
120	260	SOFT BROWN SANDSTONE
260	300	SOFT GREY SHALE
		THE AIR LIFT TEST IS ONLY APPROXIMATE.
		A TEST PUMP IS RECOMMENDED FOR AN
		ACCURATE ACCOUNT. (WP)

Total Depth of Boring 300 Feet

Total Depth of Completed Well 60 Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-5b

City BRADLEY County San Luis Obispo

Latitude 35 Deg. 45 Min. 513 Sec. N Longitude 121 Deg. 0 Min. 585 Sec. W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 062 Parcel 039

Township 25 S Range 9 E Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level 25 (Feet) Date Measured 05/24/2011

Estimated Yield * 5 (GPM) Test Type Air Lift

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	30	10"	Blank	PVC	SDR-21	8"		
30	50	10"	Screen	PVC	SDR-21	8"		0.032
50	60	10"	Blank	PVC	SDR-21	8"		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	25	Cement	
25	60	Fill	8 X 12 SAND
60	300	Fill	8 X 12 SAND

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Atascadero CA 93423
Address City State Zip

Signed [signature] 6-3-11 432680
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and compl his form. However, software must be purchased to complete, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0120570

Page 1 of 1

Owner's Well Number BH-7

Date Work Began 05/10/2011 Date Work Ended 5/16/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2010-142 Permit Date 4/4/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid BENTONITE

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	3	TOP SOIL
3	30	SOFT BROWN SANDSTONE
30	40	SOFT BLUE SANDSTONE
40	45	VERY HARD BLUE SANDSTONE
45	48	SOFT BLUE SANDSTONE
48	170	SOFT BLUE SANDSTONE
170	230	SOFT BROWN SANDSTONE
230	380	SOFT GREY SHALE
380	430	SOFT GREY SHALE
430	470	BROWN SAND SOME SMALL GRAVEL
470	580	GREY SHALE WITH SANDSTONE STRINGERS
		THE AIR LIFT TEST IS ONLY APPROXIMATE. A
		TEST PUMP IS RECOMMENDED FOR AN
		ACCURATE ACCOUNT. (GM)

Total Depth of Boring 590 Feet

Total Depth of Completed Well 580 Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-7

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 506 Sec N Longitude 121 Deg 1 Min 187 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 011 Parcel 011

Township 25 S Range 9 E Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level 85 (Feet) Date Measured 05/12/2011

Estimated Yield * 10 (GPM) Test Type Air Lift

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	280	10"	Blank	PVC	SDR-21	5"		
280	570	10"	Screen	PVC	SDR-21	5"		0.032
570	580	10"	Blank	PVC	SDR-21	5"		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	50	Cement	
50	580	Fill	8 X 12 SAND

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed [signature] C-57 Licensed Water Well Contractor

5/23/11 Date Signed

432680 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0131671

Page 1 of 1

Owner's Well Number BH - 30

Date Work Began 06/20/2011 Date Work Ended 6/23/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-54 Permit Date 6/13/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ⊙ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid AIR

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	3	TOP SOIL
3	27	SOFT BROWN SANDSTONE
27	80	SOFT GREY SHALE
80	110	HARD GREY SILTSTONE
110	150	GREY SHALE
150	165	SOFT BROWN SANDSTONE
165	270	SOFT BLUE SANDSTONE
270	285	SAND & GRAVEL
285	500	BROWN SANDSTONE
		THE AIR LIFT TEST IS ONLY APPROXIMATE.
		A TEST PUMP IS RECOMMENDED FOR AN
		ACCURATE ACCOUNT. (WP)

Total Depth of Boring 500 Feet

Total Depth of Completed Well 300 Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-30

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 562 Sec N Longitude 121 Deg 1 Min 33.1 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 011 Parcel 011

Township 25 S Range 9 E Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

⊙ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

⊙ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level 85 (Feet) Date Measured 06/22/2011

Estimated Yield * 4 (GPM) Test Type Air Lift

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	90	10"	Blank	PVC	SDR-21	5"		
90	290	10"	Screen	PVC	SDR-21	5"		0.032
290	300	10"	Blank	PVC	SDR-21	5"		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	50	Cement	
50	300	Fill	8 X 12 SAND

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed [signature] C-57 Licensed Water Well Contractor 6/30/11 Date Signed 432680 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

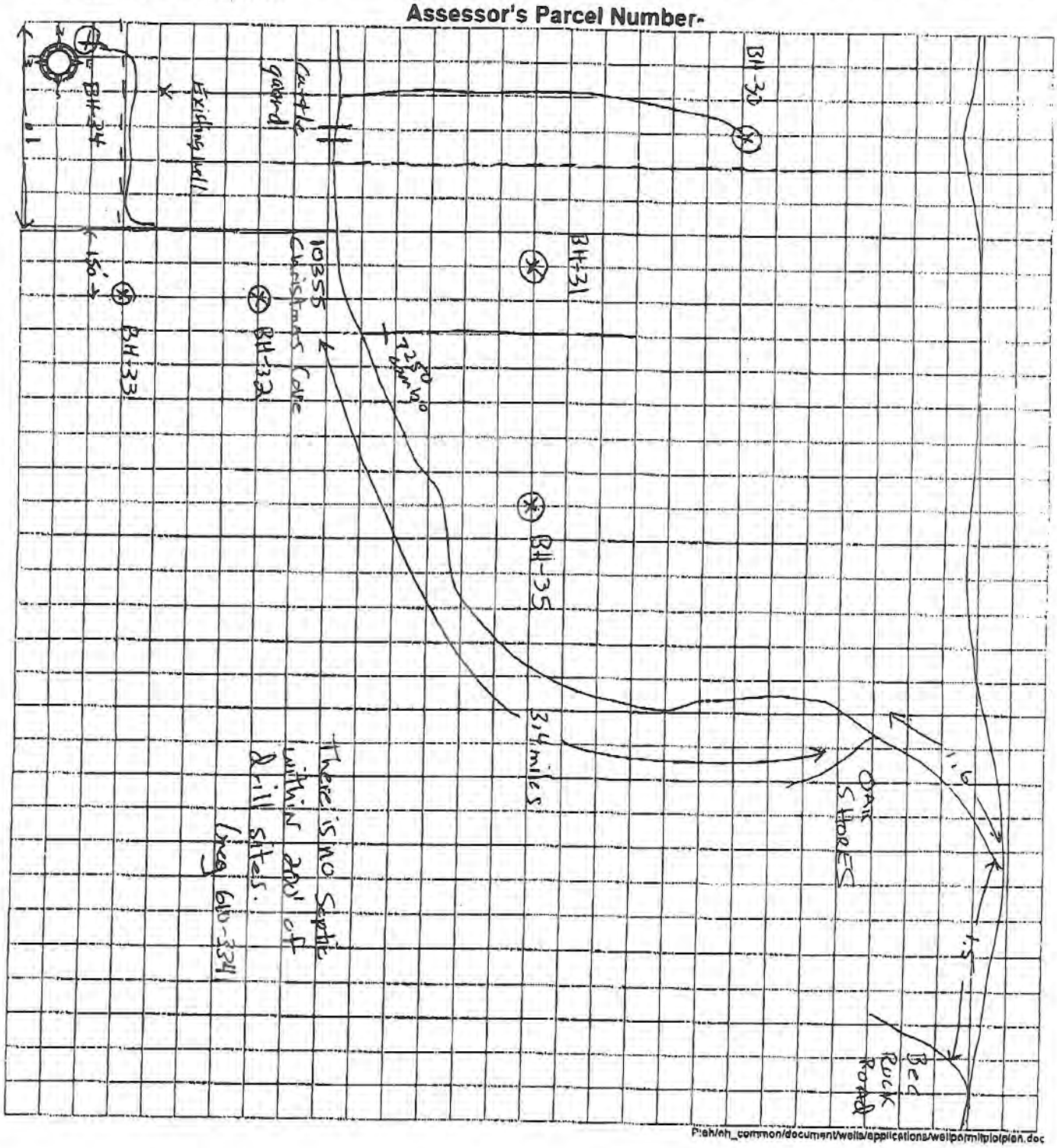
WELL PERMIT PLOT PLAN

SAN LUIS OBISPO COUNTY ENVIRONMENTAL HEALTH SERVICES
2156 Sierra Way
San Luis Obispo, California 93401
Telephone: 805-781-5544

SCALE: 1/4" = 25'

INDICATE BELOW THE **EXACT LOCATION** OF PROPOSED WELL WITH RESPECT TO THE FOLLOWING ITEMS: PROPERTY LINES, WATER BODIES OR WATER COURSES, DRAINAGE PATTERN, ROADS, EXISTING WELLS, SEWERS AND PRIVATE SEWAGE DISPOSAL SYSTEMS ANIMAL ENCLOSURES AND ANY OTHER CONCENTRATED SOURCES OF POLLUTION. **INCLUDE DIMENSIONS.** ALL PROPOSED WELL SITES SHALL BE DESIGNATED WITH A FLAGGED SURVEYOR'S STAKE LABELED "WELL SITE." DRILLING SHALL NOT COMMENCE UNTIL THIS APPLICATION IS APPROVED.

Assessor's Parcel Number-



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*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

Page 1 of 1

State of California
Well Completion Report

Refer to Instruction Pamphlet

No. e0132635

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Owner's Well Number BH - 31

Date Work Began 06/14/2011 Date Work Ended 6/16/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-53 Permit Date 6/8/11

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method ROTARY Drilling Fluid BENTONITE

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	2	TOP SOIL
2	4	BROWN CLAY
4	27	SOFT BROWN SANDSTONE
27	25	SOFT GREY SHALE
25	70	SOFT BLUE SANDSTONE
70	90	FIRM GREY SANDTONE
90	100	SOFT GREY SHALE
100	185	GREY SILTSTONE WITH SANDSTONE
		LAYERS
185	210	GREY SHALE
210	230	GREY SANSTONE & GHREY SILTSTONE
230	300	MEDIUM SANDSTONE
300	312	COARSE BLUE SAND
312	340	FIRM GREY SANDSTONE
340	350	HARD FRACTURED ROCK
350	380	FIRM GREY SANDSTONE
		THE AIR LIFT TEST IS ONLY APPROXIMATE.
		A TEST PUMP IS RECOMMENDED FOR AN
		ACCURATE ACCOUNT. (WP)

Total Depth of Boring 380 Feet

Total Depth of Completed Well 380 Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-31

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 51.1 Sec N Longitude 121 Deg 1 Min 26.2 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 011 Parcel 011

Township 25 S Range 9 E Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply
☑ Domestic ☑ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level 15 (Feet) Date Measured 06/16/2011

Estimated Yield * 4 (GPM) Test Type Air Lift

Test Length 3.0 (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	240	10"	Blank	PVC	SDR-21	5"		
240	340	10"	Screen	PVC	SDR-21	5"		0.032
340	380	10"	Conductor	PVC	SDR-21	5"		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	53	Cement	
53	380	Fill	8 X 12 SAND

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed [signature] C-57 Licensed Water Well Contractor

6/30/11 Date Signed

432680 C-57 License Number

DWR 188 REV. 1/2006

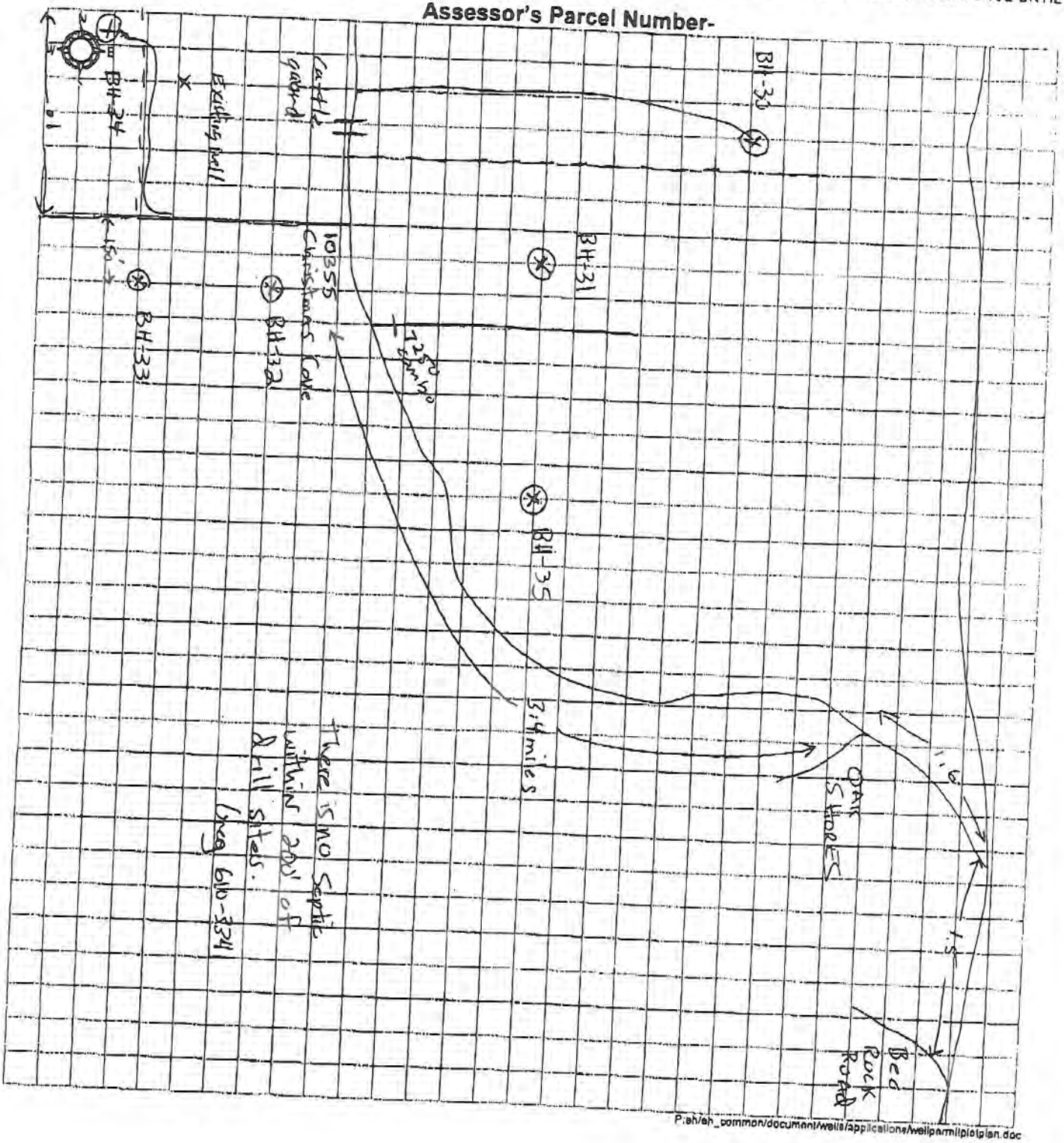
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

WELL PERMIT PLOT PLAN

SAN LUIS OBISPO COUNTY ENVIRONMENTAL HEALTH SERVICES
2156 Sierra Way
San Luis Obispo, California 93401
Telephone: 805-781-5544

SCALE: ¼" = 25'

INDICATE BELOW THE **EXACT LOCATION** OF PROPOSED WELL WITH RESPECT TO THE FOLLOWING ITEMS: PROPERTY LINES, WATER BODIES OR WATER COURSES, DRAINAGE PATTERN, ROADS, EXISTING WELLS, SEWERS AND PRIVATE SEWAGE DISPOSAL SYSTEMS ANIMAL ENCLOSURES AND ANY OTHER CONCENTRATED SOURCES OF POLLUTION. **INCLUDE DIMENSIONS. ALL PROPOSED WELL SITES SHALL BE DESIGNATED WITH A FLAGGED SURVEYOR'S STAKE LABELED "WELL SITE." DRILLING SHALL NOT COMMENCE UNTIL THIS APPLICATION IS APPROVED.**



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State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0134744

Page 1 of 1

Owner's Well Number BH - 36

Date Work Began 08/10/2011 Date Work Ended 8/11/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-081 Permit Date 8/5/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid AIR

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc.)
0	3	TOP SOIL
3	6	BROWN CLAY
6	11	BROWN SANDSTONE
11	23	GREY SANDSTONE
23	45	GREY SHALE
45	73	GREY SANDSTONE
73	82	GREY SHALE
82	150	GREY SANDSTONE
150	190	GREY SHALE
190	220	SOFT GREY SANDSTONE
		THE AIR LIFT TEST IS ONLY APPROXIMATE.
		A TEST PUMP IS RECOMMENDED FOR AN
		ACCURATE ACCOUNT. (WP)

Total Depth of Boring 220 Feet

Total Depth of Completed Well 220 Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-36

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 509 Sec N Longitude 121 Deg 1 Min 320 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 062 Parcel 022

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public ☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level 0 (Feet) Date Measured 08/11/2011

Estimated Yield * 100 (GPM) Test Type Air Lift

Test Length 1.0 (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	80	10"	Blank	PVC	SDR-21	5"		
80	220	10"	Screen	PVC	SDR-21	5"		0.032

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	50	Cement	
50	220	Fill	8 X 12 SAND

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed C-57 Licensed Water Well Contractor 8/12/11 Date Signed 432680 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0120571

Page 1 of 1

Owner's Well Number BH-2 - DRY

Date Work Began 05/09/2011 Date Work Ended 5/9/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2010-139 Permit Date 4/4/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid AIR

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	3	TOP SOIL
3	10	BROWN CLAY
10	16	SOFT BROWN SANDSTONE
16	32	SOFT BROWN SHALE
32	38	SOFT BROWN SANDSTONE
38	55	SOFT GREY SHALE
55	64	SOFT BROWN SANDSTONE
64	82	SOFT BROWN SHALE
82	90	SOFT BLUE SANDSTONE
90	300	SOFT BROWN SANDSTONE WITH SOME
		SHALE LAYERS
		THE ABOVE NEW WELL WAS A DRY HOLE.
		IT WAS BACKFILLED FROM 300' TO 25' FROM
		THE SURFACE. CEMENT WAS THEN POURED
		FROM 25' TO 5' WITH THE REMAINING DEPTH
		FILLED WITH NATIVE MATERIAL. (WP)

Total Depth of Boring 300 Feet

Total Depth of Completed Well N/A Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-2

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 27.2 Sec N Longitude 121 Deg 0 Min 51.7 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 062 Parcel 038

Township 25 S Range 9 E Section 17

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	
5	25	Cement	
25	300	Fill	8 X 12 SAND

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed C-57 Licensed Water Well Contractor 5/23/11 Date Signed 432680 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0130115

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Page 1 of 1

Owner's Well Number BH-22 - DRY

Date Work Began 05/19/2011 Date Work Ended 5/20/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-035 Permit Date 5/20/11

Geologic Log

Orientation ○ Vertical ○ Horizontal ◉ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid AIR

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	2	TOP SOIL
2	30	RIVER GRAVEL & BOULDERS
30	50	MUDDY BROWN SANDSTONE
50	170	MUDDY GREY SANDSTONE
170	225	DARK GREY SHALE
225	485	SOFT GREY SANDSTONE
		THE ABOVE NEW WELL WAS A DRY HOLE.
		IT WAS BACKFILLED FROM 485' TO 23' FROM
		THE SURFACE. CEMENT WAS THEN POURED
		FROM 23' TO 3' WITH THE REMAINING DEPTH
		FILLED WITH NATIVE MATERIAL. (WP)

Total Depth of Boring 485 Feet

Total Depth of Completed Well N/A Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-22

City BRADLEY County San Luis Obispo

Latitude 35 Deg. 45 Min. 195 Sec. N Longitude 121 Deg. 1 Min. 122 Sec. W

Datum Decimal Lat. Decimal Long.

APN Book Page Parcel

Township 25 S Range 9 E Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type Air Lift

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0								

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	3	Fill	8 X 12 SAND
3	23	Cement	
23	485	Fill	GRAVEL

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Atascadero CA 93423
Address City State Zip

Signed [signature] 5/31/11
C-57 Licensed Water Well Contractor Date Signed

432680
C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and comp[illegible] this form. However, software must be purchased to complete [illegible]e, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0132635

Page 1 of 1

Owner's Well Number BH - 31

Date Work Began 06/14/2011 Date Work Ended 6/16/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-53 Permit Date 6/8/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method ROTARY Drilling Fluid BENTONITE

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	2	TOP SOIL
2	4	BROWN CLAY
4	27	SOFT BROWN SANDSTONE
27	25	SOFT GREY SHALE
25	70	SOFT BLUE SANDSTONE
70	90	FIRM GREY SANDTONE
90	100	SOFT GREY SHALE
100	185	GREY SILTSTONE WITH SANDSTONE
		LAYERS
185	210	GREY SHALE
210	230	GREY SANSTONE & GHREY SILTSTONE
230	300	MEDIUM SANDSTONE
300	312	COARSE BLUE SAND
312	340	FIRM GREY SANDSTONE
340	350	HARD FRACTURED ROCK
350	380	FIRM GREY SANDSTONE
		THE AIR LIFT TEST IS ONLY APPROXIMATE.
		A TEST PUMP IS RECOMMENDED FOR AN
		ACCURATE ACCOUNT. (WP)

Total Depth of Boring 380 Feet

Total Depth of Completed Well 380 Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-31

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 51.1 Sec N Longitude 121 Deg 1 Min 262 Sec W

Datum _____ Decimal Lat. _____ Decimal Long. _____

APN Book 080 Page 011 Parcel 011

Township 25 S Range 9 E Section 8

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well
○ Modification/Repair
○ Deepen
○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply
☑ Domestic ☑ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water _____ (Feet below surface)

Depth to Static Water Level 15 (Feet) Date Measured 06/16/2011

Estimated Yield * 4 (GPM) Test Type Air Lift

Test Length 3.0 (Hours) Total Drawdown _____ (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0	240	10"	Blank	PVC	SDR-21	5"		
240	340	10"	Screen	PVC	SDR-21	5"		0.032
340	380	10"	Conductor	PVC	SDR-21	5"		

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	53	Cement	
53	380	Fill	8 X 12 SAND

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed [signature] C-57 Licensed Water Well Contractor

6/30/11 Date Signed

432680 C-57 License Number

DWR 188 REV 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

*The free Adobe Reader may be used to view and comm[illegible] this form. However, software must be purchased to complet[illegible]ve, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0131673

Page 1 of 1

Owner's Well Number BH - 32

Date Work Began 08/02/2011 Date Work Ended 8/3/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-52 Permit Date 6/8/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	3	TOP SOIL
3	30	SOFT BROWN SANDSTONE
30	35	SOFT GREY SANDSTONE
35	165	SOFT BROWN SANDSTONE
165	350	SOFT GREY SHALE
350	500	BROWN SOFT CLAY
		THE ABOVE NEW WELL WAS A DRY HOLE. IT
		WAS BACKFILLED FROM 500' TO 25' WITH
		GRAVEL. CEMENT WAS THEN POURED FROM
		25' TO 5'. THE REMAINING DEPTH WAS
		FILLED WITH NATIVE MATERIAL IN
		ACCORDANCE WITH THE SAN LUIS OBISPO
		COUNTY ENVIRONMENTAL HEALTH
		REQUIREMENTS. (WP)

Total Depth of Boring 500 Feet

Total Depth of Completed Well N/A Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-32

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 445 Sec N Longitude 121 Deg 1 Min 252 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 062 Parcel 022

Township 25 S Range 9 E Section 17"

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type Air Lift

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0								

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	NATIVE
5	25	Cement	
25	500	Fill	GRAVEL

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed [signature] C-57 Licensed Water Well Contractor

8/12/11 Date Signed

432680 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0131674

Page 1 of 1

Owner's Well Number BH - 33

Date Work Began 06/23/2011 Date Work Ended 6/23/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-56 Permit Date 6/8/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid AIR

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	3	TOP SOIL
3	5	SANDY BROWN CLAY
5	14	BROWN CLAY
14	37	SOFT BROWN SANDSTONE
37	55	GREY SILTSTONE
55	63	HARD GREY SANDSTONE
63	120	GREY SILTSTONE
120	185	GREY SHALE
185	192	GREY SHALE WITH SMALL AMOUNTS OF
		SAND
192	200	GREY SHALE
		THE ABOVE NEW WELL WAS A DRY HOLE. IT
		WAS BACKFILLED FROM 200' TO 25' WITH
		ROCK. CEMENT WAS THEN POURED FROM
		25' TO 5'. THE REMAINING DEPTH WAS FILLED
		WITH NATIVE MATERIAL IN ACCORDANCE
		WITH SAN LUIS OBISPO COUNTY
		ENVIRONMENTAL HEALTH DEPT. STANDARDS
		& REQUIREMENTS. (WP)

Total Depth of Boring 200 Feet

Total Depth of Completed Well N/A Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-33

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 0 Sec N Longitude 121 Deg 1 Min 254 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 062 Parcel 022

Township 25 S Range 9 E Section 17

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete**

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	
5	25	Cement	
25	200	Fill	3/4" GRAVEL

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed C-57 Licensed Water Well Contractor 6/28/11 Date Signed 432680 C-57 License Number

DWR 188 REV 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

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State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0131676

Page 1 of 1

Owner's Well Number BH - 35

Date Work Began 08/05/2011 Date Work Ended 8/5/2011

Local Permit Agency SAN LUIS OBISPO COUNTY

Permit Number 2011-55 Permit Date 6/8/11

DWR Use Only – Do Not Fill In

State Well Number/Site Number

N W

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method AIR ROTARY Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0	3	TOP SOIL
3	30	BROWN CLAY
30	180	GREY SHALE
180	450	GREY & BROWN SHALE WITH THIN SAND
		LAYERS
450	470	LIGHT BROWN SHALE
470	490	BROWN SOFT SANDSTONE
490	520	BROWN SOFT SHALE
		THE ABOVE NEW WELL WAS A DRY HOLE. IT
		WAS BACKFILLED FROM 520' TO 25' WITH
		GRAVEL. CEMENT WAS THEN POURED
		FROM 25' TO 5'. THE REMAINING DEPTH WAS
		FILLED WITH NATIVE MATERIAL IN
		ACCORDANCE WITH THE SAN LUIS OBISPO
		COUNTY ENVIRONMENTAL HEALTH
		REQUIRMENTS. (WP)

Total Depth of Boring 520 Feet

Total Depth of Completed Well N/A Feet

Well Owner

Name CANTINAS RANCH

Mailing Address 22917 PACIFIC COAST HIGHWAY - 300A

City MALIBU State CA Zip 90265

Well Location

Address LYNCH CANYON ROAD - WELL BH-35

City BRADLEY County San Luis Obispo

Latitude 35 Deg 45 Min 42.1 Sec N Longitude 121 Deg 1 Min 130 Sec W

Datum Decimal Lat. Decimal Long.

APN Book 080 Page 062 Parcel 023

Township 25 S Range 9 E Section 17

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North

West East

South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

◉ New Well

○ Modification/Repair

○ Deepen

○ Other

○ Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

◉ Water Supply

☑ Domestic ☑ Public

☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type Air Lift

Test Length (Hours) Total Drawdown (Feet)

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

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0								

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	NATIVE
5	25	Cement	
25	520	Fill	GRAVEL

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ 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 FILIPPONI & THOMPSON DRILLING, INC.
Person, Firm or Corporation

P.O. Box 845 Address Atascadero City CA State 93423 Zip

Signed C-57 Licensed Water Well Contractor Date Signed 8/12/11

432680 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM