

Rick Hoffman and Associates

CONSULTING ENGINEERING GEOLOGISTS RG 3740 EG 1135

1149 Palomino Rd. Santa Barbara, CA 93105

(805) 569-1911

WATER WELL COMPLETION REPORT

Abercrombie Well #1
2125 Refugio Canyon Road
Goleta, California 93117

October 24, 1987

WATER WELL COMPLETION REPORT - SUMMARY SHEET

Abercrombie Well #1

October 24, 1987

Well Owner Mr. and Mrs. Stewart Abercrombie
2125 Refugio Canyon Road
Goleta, California 93117

Well Location approximately 1 mile west of Refugio Cyn. Rd.,
± 500 feet west of Abercrombie residence
(see LOCATION MAP, Figure 1)

Drilling and Test
Pumping Contractor Filipponi and Thompson Drilling Co.
Post Office Box 845
Atascadero, California 93423
(805) 466-1271

Engineering
Geologist Rick Hoffman and Associates
1149 Palomino Road
Santa Barbara, California 93105
(805) 569-1911

Date of Well Completion October 13, 1987

Total Depth of
Completed Well 395 feet

Depth of
Sanitary Seal 12" diameter, Schedule 80 PVC conductor
casing set from ground surface to 50 feet.
50 foot sanitary seal pumped into place.
(See Drillers Report)

Size and Type of
Well Casing 6" diameter, SDR 21 Class 200 PVC
(See Drillers Report for details).
0' - 175' blank
175' - 195' perforations w/0.040" slots
195' - 255' screen w/0.040" slots
255' - 395' perforations w/0.040" slots
and bottom cap

Static Water Level 60 feet below ground surface.

Length of Test Pumping None performed as part of this study

Water Quality No water quality test performed as
part of this study

October 24, 1987

FILE: GR877 - Abercrombie

Mr. and Mrs. Stewart Abercrombie
2125 Refugio Canyon Road
Goleta, California 93117

Re: Water Well Completion Report - Abercrombie Well #1
2125 Refugio Canyon Road
Goleta, California

Dear Mr. and Mrs. Abercrombie:

INTRODUCTION

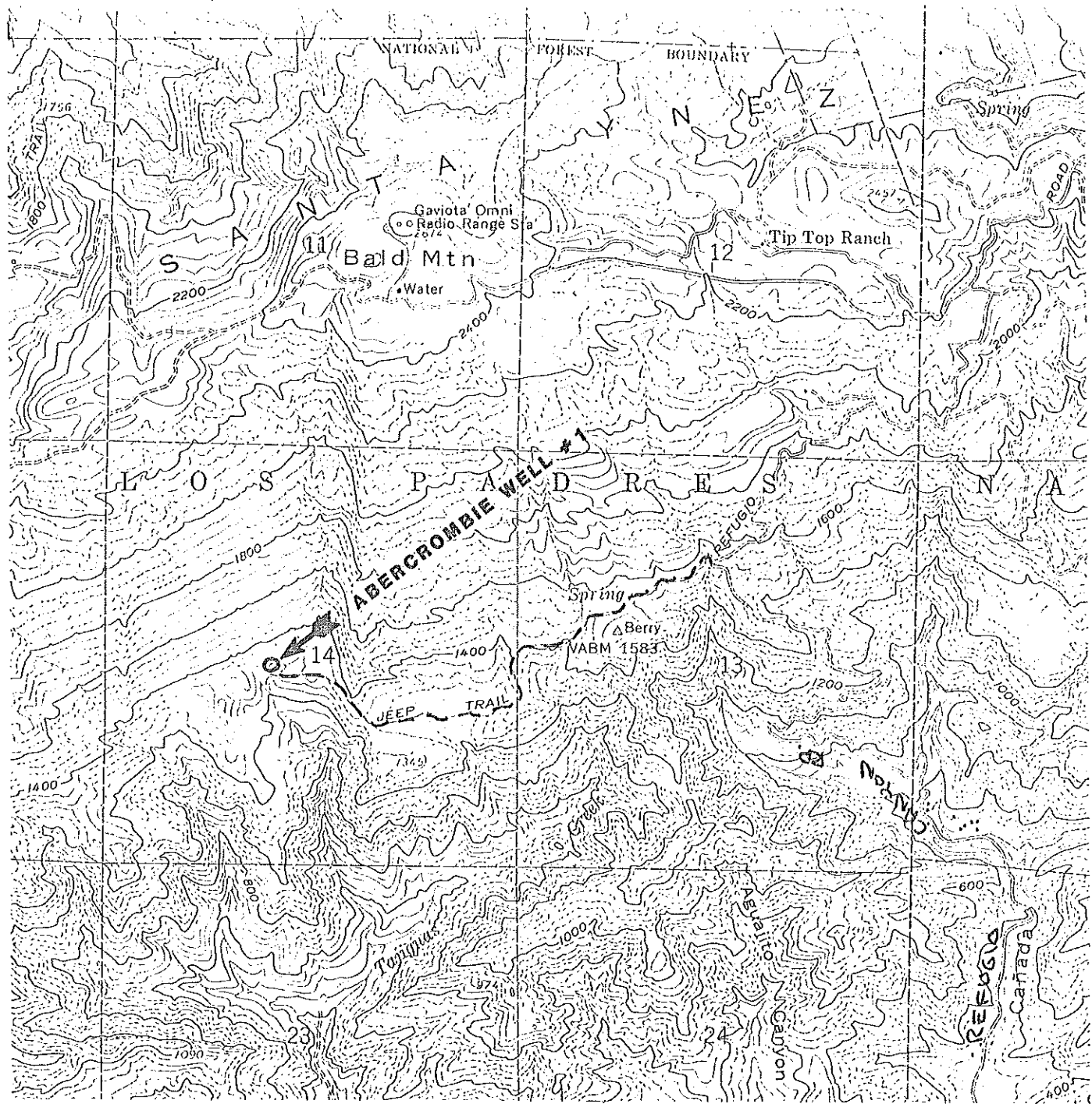
Pursuant to your request, we herewith submit our WATER WELL COMPLETION REPORT for your recently completed six inch diameter, PVC cased well. The well is located in the western portions of your property approximately 500 feet west of your residence immediately south of the dirt access road leading to the upper portions of the Rancho Tajiguas property (see LOCATION MAP, Figure 1). This new well is hereafter designated as the Abercrombie Well #1. This report outlines the site exploration, construction process and design of the well. It is noteworthy that our office was not involved in the test pumping of the well so no estimate as to the well's productivity or water quality can be made as part of this report.

EXPLORATION PROGRAM

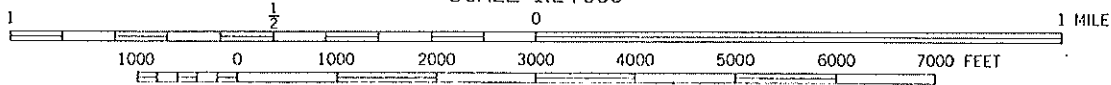
Our office was asked to evaluate the geologic and hydrologic characteristics of your property and surrounding area for the purpose of siting a new well. After conducting a geologic reconnaissance of the property, reviewing our geologic maps, and taking into account site logistics and your plans for future development, we recommended several potential drilling locations for the proposed well. While you could most likely complete a successful well at any location within a several thousand feet radius of this site, this particular site was selected by you because of ease of access and future water needs. The site was approved by our office and a representative of the Santa Barbara Department of Public Health.

TEST HOLE DRILLING

The drilling company of Filipponi and Thompson, from Atascadero, California moved their equipment onto the site and initiated drilling on October 12, 1987. Standard air-rotary drilling techniques were used to drill a 9 7/8 inch diameter test hole to 50 feet. This test hole was reamed to 22 inches for placement of a 12 1/4 inch diameter PVC conductor casing. This casing was then cemented into place to act as a sanitary seal against potential near surface contaminants. The placement of the sanitary seal was witnessed and approved by a representative of the Santa Barbara County Department of Public Health.



SCALE 1:24 000



LOCATION MAP

ABERCROMBIE WELL #1

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FIGURE

1

Santa Barbara County Health Permit #5363

conjunction with the perforation and screen slot size, is designed to prevent the finest formational material from entering the well, while maintaining maximum filter permeability. The sand was emplaced from the bottom of the test hole to ground surface to complete the well construction phase of the project.

Following the completion process, well development was initiated in order to maximize well production and settle the gravel pack. This process consisted of mechanical agitation of the well bore-hole and gravel pack by air jetting, wherein high pressure air streams are directed at the perforated and screened intervals of the well casing. This process was continued until the majority of finer fractions of the gravel pack and formational sediments were removed from the well so that subsequent well pumping would produce sand free and sediment free water. The well air jetted upwards of 100 gallons per minute for approximately two hours. Static water level was reported to be at approximately 60 feet below ground surface several hours after the air jetting was completed.

No test pumping procedure was conducted as part of this investigation at your request. Likewise, no water sample was collected by our office with which to analyze water quality.

CONCLUSIONS

It is our preliminary conclusion that the Abercrombie Well #1 may represent a reliable long term source of groundwater for most of your domestic and limited agricultural needs. In order for our office to verify this conclusion, we would have to perform a test pumping procedure and review the drawdown and well production data.

RECOMMENDATIONS


It is recommended that periodic monitoring of the water levels in this well be maintained on a quarterly or semi-annual basis. The water level should be measured during approximately the same weeks each year, especially during the fall and early winter months when water levels are expected to be lowest. A permanent record should be made of this information for future planning. For ease of measuring, it is suggested that an airline and pressure gauge be installed at the time the permanent pump is emplaced. Moreover, it is recommended that a water metering device (i.e., a flow meter) be installed at the time of pump emplacement. These two items--a flow meter and airline--will provide the necessary data for sound planning of the groundwater reserves.

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Water Well Completion Report - Abercrombie Well #1  
October 24, 1987  
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We trust this Water Well Completion Report will aid you in the planning of the utilization of your water resources. If we can be of further assistance to you regarding this report or other hydrogeologic concerns, please feel free to call upon us.

Sincerely,

A handwritten signature in black ink, appearing to read "Rick Hoffman", with a horizontal line extending to the right.

Rick Hoffman  
Certified Engineering Geologist  
State of California  
RG #3740 EG #1135

FORMATIONAL LOG

Abercrombie Well #1

| <u>DEPTH</u> |       | <u>FORMATIONAL SAMPLE DESCRIPTION</u>                                                                                               |
|--------------|-------|-------------------------------------------------------------------------------------------------------------------------------------|
| 0'- 41'      | ----- | tan cobbles and boulders in a clay matrix, dry.                                                                                     |
| 41'- 55'     | ----- | hard, well cemented sandstone, dry, Sacate Form.                                                                                    |
| 55'- 90'     | ----- | blue green sandy silt, silty clay, med. soft, dry.                                                                                  |
| 90'-176'     | ----- | massive, blue med. to coarse grained sandstone,<br>med. hard to very hard, minor interbeds of sandy<br>silt, dry, Sacate Formation. |
| 176'-310'    | ----- | dark grey to black, well cemented shale, slightly<br>finer grained below 290', Cozy Dell Formation.                                 |
| 310'-380'    | ----- | as above, gradual increase in interbeds of tan<br>siltstone, fractured (sloughing) beds below 330',<br>Cozy Dell Formation.         |
| 380'-400'    | ----- | dark grey to black fissile shale, platy, very slow<br>drilling, no new water increase, Cozy Dell Form.                              |

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WATER PRODUCTION RECORD

(During construction phase - Well test needed to confirm data)

| <u>Depth</u> | <u>Gallons Per Minute (gpm) Estimate</u> |
|--------------|------------------------------------------|
| 0'-200'      | Dry                                      |
| 200'         | 10 to 15 gpm                             |
| 225'         | 50 to 60 gpm                             |
| 230'-240'    | 120 to 140 gpm                           |
| 300'         | 180 to 200 gpm                           |