

WELL SUMMARY

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Location ID: 700-E-458 Field Representative(s): R. Cooper

Date Started: 02/16/90 Date Completed: 03/12/90

Northing: 234304.94 Easting: 409922.66

Brass Cap: 4717.77 Outer Casing: 4719.62 Inner Casing: 4720.28

Drilling Method: Mud & Air-Foam Rotary Drilling Contractor: Larjon

Driller: J. Gower

Total Depth Borehole: 515' Total Depth Well Casing: 484.2'

Total Depth Surface Casing: 69'

Diameter Well Casing: 4" Diameter Surface Casing: 10"

Type of Screen: extra strength 0.02 slot

Screen Interval: 458.1' to 478.9'

Water First Detected: not detected while drilling Water Level Open Borehole: \_\_\_\_\_

Water Level Cased Borehole: 354.87' (T.O.C.) on 03/15/90

Quik-Foam Use: 5 gallons

EZ-Mud: 4 gallons

Estimated Water Use:

Well Casing:

4in x 3ft SCD 40 PVC:	0	stock SS centralizers:	0
4in x 5ft SCD 40 PVC:	0	custom SS centralizers:	1
4in x 10ft SCD 40 PVC:	0	4"x2' SS locking riser:	1
4in x 20ft SCD 40 PVC:	0	4" SS locking cap:	1
Total SCD 40 PVC pipe:	0 ft	4" SS female cap:	1 ft
4in x 3ft SCD 5 SS pipe:	1		
4in x 5ft SCD 5 SS pipe:	0	4in x 5ft SCD 10 SS pipe:	2
4in x 10ft SCD 5 SS pipe:	0	4in x 10ft SCD 10 SS pipe:	1
4in x 20ft SCD 5 SS pipe:	19	4in x 20ft SCD 10 SS pipe:	3
Total SCD 5 SS pipe:	383 ft	Total SCD 10 SS pipe:	80 ft

Well Completion:

100# bags 16/40 sand:	17	bags
100# bags 10/20 sand:		bags
100# bags 8/14 sand:		bags
100# bags 8/20 sand:	49	bags
94# bags cement:	120	bags
50# bentonite powder:	12	bags
Benseal:	½	bags
E-Z Mud:	1	cup

Surface Casing:

94# bags cement:	45	bags
50# bags bentonite powder:	30	bags (25 bags used in mud rotary drilling)

Pertinent Field Notes:

02/16/90 Finish mobilizing to well site. Spud well using mud-rotary drilling method with 12 ¼" bit. Drilled from 0' to 54'. Seal on top-head was leaking and was temporarily repaired. - Cooper

02/20/90 Continued drilling from 54' to 65'. Reamed from 0' to 62' with 16" bit. - Cooper

02/21/90 Continued reaming hole to 16" from 62' to 69'. Installed and grouted 10" x 69.1' steel surface casing. Grout mixture contained 45 sacks cement and 5 sacks bentonite gel. - Cooper

02/22/90 Prepare to drill to TD with air foam rotary; 9 7/8" bit. Drilled from 69' to 145'. - Contaldo

02/23/90 Continued drilling from 145' to 315'. Orejon andesite bedrock encountered between 285' and 290'. No visible water zones detected while drilling. - Cooper

02/26/90 Continued drilling through orejon andesite from 315' to 435'. No visible water zones apparent during drilling. - Cooper

- 02/27/90 Continued drilling from 435' to 515'. Lithologic change at 500'-515' from light purplish gray hornblende andesite to a dark reddish brown porphyritic (?) andesite. Soft and hard zones encountered while drilling and fractures were observed throughout section. No water producing zones observed while drilling. - Cooper
- 02/28/90 Monitored water level rise: 2.0' to 2.5' rise/hour in the open borehole. Moved equipment off site. - Cooper
- 03/01/90 Monitored water level rise: 1.7' rise/hour over a 24 hour period. Southwest Surveys ran the full suite of geophysical logs. - Cooper
- 03/02/90 Completion of well: Installed tremie and 4" stainless well casing, 8/20 sand gravel pack, 16/40 upper sand and Benseal/E-Z Mud plug. 20' extra strength screen from 458.1' to 478.9'. - Cooper
- 03/05/90 Add 2:1 ratio 8/20 & 16/40 filler sand to 332'. Grouted well with 100 sacks cement, 10 sacks gel and 890 gallons water. - Cooper
- 03/06/90 First load of grout yielded 279' linear feet (53' below grade). Mixed 20 sacks cement 2 sacks gel and 180 gallons water and grouted well to the surface. Set 6" x 5 guard pipe. - Cooper
- 03/07/90 Static water level  $\approx$  350'. Bailed and surged well for development (see development sheet for details). Development water is turbid. - Cooper
- 03/12/90 Lockheed (facilities) constructed cement pad around well head and set brass cap. - Egan
- 03/15/90 Static water level = 354.87' (T.O.C.). Bailed and surged well for development (see development sheet for details). Development water is turbid. Lockheed Environmental Group personnel was present for development and agreed to resume development with their Bennet pump and sampling crew. - Kirby