

Attachment: A. E. Whitehead

TOTCO DEVIATION SURVEY

Depth	Off Vertical	Depth	Off Vertical	Depth	Off Vertical
185	3/4	4620	3/4	7397	1
265	1/2	5478	1	7458	3/4
900	1/2	5735	1-1/4	7558	1
2938	1	5938	1-1/4	7586	1
3452	1/2	6285	1/2	7780	1
3580	3/4	6572	3-1/4	7863	1-1/4
3940	1/2	6727	3	7890	1-1/4
4045	1/2	6804	2-1/2	7982	1
4360	1/2	6924	2	8090	1/4

DRILL STEM TESTS

No.	Date	From	To	No. Kind & Size of Perforations (or Open Hole)	Tool Set @	Chokes Top Bottom	Water Cushion	Time Tested
1	7-30-57	3970	4045	Open	3970	5/8" x 1"		
(San Andres) Packer failed immediately, no test.								
2	7-31-57	3962	4045	Open	3962	5/8" x 1"	None	1 Hr.
(San Andres) Nothing to surface. Recovered 60' drilling mud, no show. Surface flowing pressure 0#, bottom hole flowing pressure 60-60#. 15 minute shut-in pressure 60#. Hydrostatic head 2510# in and out.								
3	8-3-57	4039	4115	Open	4039	5/8" x 1"	None	1 1/2 Hrs.
(San Andres) Nothing to surface. Recovered 150' drilling mud, no show. Surface flowing pressure 0#. Bottom hole flowing pressure 75-140#. 15 minute shut-in pressure 148#. Hydrostatic head 2530-2500#.								
4	8-4-57	4150	4250	Open	4150	5/8" x 1"	None	1 1/2 Hrs.
(Lower San Andres) Nothing to surface. Recovered 90' slightly oil and gas cut drilling mud. Surface flowing pressure 0#. Bottom hole flowing pressure 85-100#. 30 minute shut-in pressure 190#. Hydrostatic head 2640-2600#.								
5	9-11-57	8205	8229	Open	8205	5/8" x 1"	None	1 Hr.
(Bough) Nothing to surface. Recovered 30' drilling mud, no show. All pressures 0#. Hydrostatic head 4455-4505#.								
6	9-17-57	8310	8410	Open	8310	5/8" x 1"	None	1 1/2 Hrs.
(Lower Penn) Nothing to surface. Recovered 60' of drilling mud, no show. Surface flowing pressure 0#. Bottom hole flowing pressure 135-135#. 45 minute shut-in pressure 175#. Hydrostatic head 4665-4620#.								

CORE RECORD

No.	From	To	Rec.	Description
1	8125	8177	52'	Line & shale, no show.
2	8177	8229	49'	8177-8215 - 38' shaley lime, no show. 8215-8217 1/2 - 2 1/2' limestone, trace to 10% vuggy pinhead porosity, good stain, fluorescence and cut. 8217 1/2-8226 - 8 1/2' lime, no show. 8226-8229 - 3' lost.
3	8229	8267	38'	Line & shale, no show. Had break in last 10', no porosity.
4	8267	8319	52'	Lime, no show.

TOTAL DEVIATION SURVEY

Depth	Off Vertical	Depth	Off Vertical	Depth	Off Vertical	Depth	Off Vertical
1300	1/2	6024	2	1620	3/4	7397	1
1400	1/2	6024	2	1620	3/4	7397	1
1500	1/2	6024	2	1620	3/4	7397	1
1600	1/2	6024	2	1620	3/4	7397	1
1700	1/2	6024	2	1620	3/4	7397	1
1800	1/2	6024	2	1620	3/4	7397	1
1900	1/2	6024	2	1620	3/4	7397	1
2000	1/2	6024	2	1620	3/4	7397	1
2100	1/2	6024	2	1620	3/4	7397	1
2200	1/2	6024	2	1620	3/4	7397	1
2300	1/2	6024	2	1620	3/4	7397	1
2400	1/2	6024	2	1620	3/4	7397	1
2500	1/2	6024	2	1620	3/4	7397	1
2600	1/2	6024	2	1620	3/4	7397	1
2700	1/2	6024	2	1620	3/4	7397	1
2800	1/2	6024	2	1620	3/4	7397	1
2900	1/2	6024	2	1620	3/4	7397	1
3000	1/2	6024	2	1620	3/4	7397	1
3100	1/2	6024	2	1620	3/4	7397	1
3200	1/2	6024	2	1620	3/4	7397	1
3300	1/2	6024	2	1620	3/4	7397	1
3400	1/2	6024	2	1620	3/4	7397	1
3500	1/2	6024	2	1620	3/4	7397	1
3600	1/2	6024	2	1620	3/4	7397	1
3700	1/2	6024	2	1620	3/4	7397	1
3800	1/2	6024	2	1620	3/4	7397	1
3900	1/2	6024	2	1620	3/4	7397	1
4000	1/2	6024	2	1620	3/4	7397	1
4100	1/2	6024	2	1620	3/4	7397	1
4200	1/2	6024	2	1620	3/4	7397	1
4300	1/2	6024	2	1620	3/4	7397	1
4400	1/2	6024	2	1620	3/4	7397	1
4500	1/2	6024	2	1620	3/4	7397	1
4600	1/2	6024	2	1620	3/4	7397	1
4700	1/2	6024	2	1620	3/4	7397	1
4800	1/2	6024	2	1620	3/4	7397	1
4900	1/2	6024	2	1620	3/4	7397	1
5000	1/2	6024	2	1620	3/4	7397	1
5100	1/2	6024	2	1620	3/4	7397	1
5200	1/2	6024	2	1620	3/4	7397	1
5300	1/2	6024	2	1620	3/4	7397	1
5400	1/2	6024	2	1620	3/4	7397	1
5500	1/2	6024	2	1620	3/4	7397	1
5600	1/2	6024	2	1620	3/4	7397	1
5700	1/2	6024	2	1620	3/4	7397	1
5800	1/2	6024	2	1620	3/4	7397	1
5900	1/2	6024	2	1620	3/4	7397	1
6000	1/2	6024	2	1620	3/4	7397	1
6100	1/2	6024	2	1620	3/4	7397	1
6200	1/2	6024	2	1620	3/4	7397	1
6300	1/2	6024	2	1620	3/4	7397	1
6400	1/2	6024	2	1620	3/4	7397	1
6500	1/2	6024	2	1620	3/4	7397	1
6600	1/2	6024	2	1620	3/4	7397	1
6700	1/2	6024	2	1620	3/4	7397	1
6800	1/2	6024	2	1620	3/4	7397	1
6900	1/2	6024	2	1620	3/4	7397	1
7000	1/2	6024	2	1620	3/4	7397	1
7100	1/2	6024	2	1620	3/4	7397	1
7200	1/2	6024	2	1620	3/4	7397	1
7300	1/2	6024	2	1620	3/4	7397	1
7400	1/2	6024	2	1620	3/4	7397	1
7500	1/2	6024	2	1620	3/4	7397	1
7600	1/2	6024	2	1620	3/4	7397	1
7700	1/2	6024	2	1620	3/4	7397	1
7800	1/2	6024	2	1620	3/4	7397	1
7900	1/2	6024	2	1620	3/4	7397	1
8000	1/2	6024	2	1620	3/4	7397	1
8100	1/2	6024	2	1620	3/4	7397	1
8200	1/2	6024	2	1620	3/4	7397	1
8300	1/2	6024	2	1620	3/4	7397	1
8400	1/2	6024	2	1620	3/4	7397	1
8500	1/2	6024	2	1620	3/4	7397	1
8600	1/2	6024	2	1620	3/4	7397	1
8700	1/2	6024	2	1620	3/4	7397	1
8800	1/2	6024	2	1620	3/4	7397	1
8900	1/2	6024	2	1620	3/4	7397	1
9000	1/2	6024	2	1620	3/4	7397	1
9100	1/2	6024	2	1620	3/4	7397	1
9200	1/2	6024	2	1620	3/4	7397	1
9300	1/2	6024	2	1620	3/4	7397	1
9400	1/2	6024	2	1620	3/4	7397	1
9500	1/2	6024	2	1620	3/4	7397	1
9600	1/2	6024	2	1620	3/4	7397	1
9700	1/2	6024	2	1620	3/4	7397	1
9800	1/2	6024	2	1620	3/4	7397	1
9900	1/2	6024	2	1620	3/4	7397	1
10000	1/2	6024	2	1620	3/4	7397	1

WELL TEST

No.	Time	From	To	No. of Perforations (or Open Hole)	Tool Set	Chokes	Water Injection	Time Tested
1	7-30-77	3070	1015	Open	3070	2 1/2" x 1"	None	1 hr.
2	7-31-77	3062	1007	Open	3062	2 1/2" x 1"	None	1 hr.
3	8-1-77	1039	1115	Open	1039	2 1/2" x 1"	None	1 1/2 hrs.
4	8-1-77	1110	1210	Open	1110	2 1/2" x 1"	None	1 1/2 hrs.
5	8-11-77	8207	8207	Open	8207	2 1/2" x 1"	None	1 hr.
6	9-17-77	8210	8210	Open	8210	2 1/2" x 1"	None	1 1/2 hrs.

(Lower San Andres) Nothing to surface. Recovered 90% slightly oil and gas cut drilling mud. Surface flowing pressure 0%. Bottom hole flowing pressure 82-100%. 30 minute shut-in pressure 118%. Hydrostatic head 8230-8200%.

(San Andres) Nothing to surface. Recovered 60% drilling mud, no show. Surface flowing pressure 0%. Bottom hole flowing pressure 60-60%. 15 minute shut-in pressure 60%. Hydrostatic head 8230-8200%.

(San Andres) Borehole filled immediately, no test.

LOG SUMMARY

No.	From	To	Description
1	8177	8217	lime & shale, no show.
2	8217	8229	8177-8217 - 38' shale lime, no show. 8217-8217 - 20' limestone, trace to 10' very porous, good stain, fluorescence and cut. 8217-8226 - 8 1/2' lime, no show. 8226-8229 - 3' lost.
3	8229	8267	lime & shale, no show. Had break in last 50', no porosity.

Attachment #2: A. E. Whitebe #1

ACIDIZING OR OTHER COMPLETION OPERATION

9-24-57 Cardinal Chemical Company acidized perforations 4166-4176 w/1000 gals. 15% regular acid. TP: 2100-1200#. Injection rate 1 1/2 BPM. 5 minute shut-in pressure 1000#. Swab 37 BLO + 31 BSW in 18 hours. Lost 69 BLO in hole.

