

BELCO PETROLEUM

CORPORATION OF PERU
(SUCURSAL DEL PERU)

TELEF. - NEGRITOS
863-884-886

APARTADO No. 1
TALARA - PERU

WELL FILE

November 20, 1984.-
E- 142, 1984.-

To : Drilling Superintendent
Ref : Petroleum Engineering
Ref : Drilling Prognosis
Well Z2A-21-592-D-L06 (L06-18)
Lobitos - Offshore

Attached you will find the Drilling Prognosis for the well in reference. This well will be drilled to a total depth of 6200' to develop the Rio Bravo sands to the North East side of the platform L06. Total drilling time to reach TD is estimated in 25 days from spud.

This program is based upon data from the Geologic Prognosis and data gathered from correlation wells.

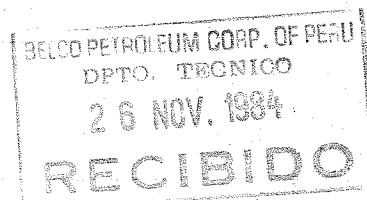
V°B° : *Carlos Valdizán M.*
Asst. Supt. P.E.

G. Villanueva
G. Villanueva : Approved
Drlg. Supt.

C. E. Myers
Approved : C. E. Myers
Eng. Supt.

IR/rzz

cc: O.M.
Lima Tech.
Petro-Peru(Lima)
Drlg. Supt (3)
S.M.D.Co.
Geology Neg.
Finanncce
Well file





DRILLING PROGNOSIS

WELL	Z2A-21-592-D-L06 OFFICIAL NUMBER	L06-18 BELCO NUMBER	Lobitos AREA	Development TYPE OF WELL	AFE No.
OBJETIVE	PRIMARY Rio Bravo sands SECONDARY				
RIG : III	National 55-A DRAWWORKS		Gardner Denver PY-7 PUMP No. 1		Gardner Denver PY-7 PUMP No. 2
DIRECTION OF DEVIATED WELL N 12° E		ESTIMATED DEVIATION (MAX ANGLE) 33°		ELEVATIONS K.B 50' ☒ WATER DEPTH 335' ☐ GROUND LEVEL	
CONDUCTOR SIZE 18" Ø AND ANGLE Vertical		RECOMMENDED K. O. P. 700'			
ESTIMATED TOTAL DEPTH 6200'		ESTIMATED TO REACH T. D. 25 days			
SURFACE HOLE PROGRAM			BIT SIZE 17"	CASING POINT 680'	
CASING 13 3/8", K-55, 54.5#/ft ST&C at 650 FLOATING EQUIPMENT Guide shoe insert float valve CENTRALIZERS One on each of the bottom four joints (3)		CEMENT SLURRY 1 650 sx neat plus 2% CaCl ₂ . SLURRY 2 SLURRY-1 SLURRY-2 DENSITY (lb/gal) 15.6 YIELD (ft ³ /sx) 1.18 WAT. REQ (gal/sx) 5.2 T.T. (hr. min) 2.0		REMARKS	
INTERMEDIATE HOLE PROGRAM			BIT SIZE 12 1/4"	CASING POINT 1530'	
CASING 9 5/8", J-55, 40#/ft LT&C at 1500' FLOATING EQUIPMENT Guide shoe Insert float valve CENTRALIZERS One on each of the bottom six joints (6)		CEMENT SLURRY 1 500 sx, 4% Gel SLURRY 2 300 sx neat cement. SLURRY-1 SLURRY-2 DENSITY (lb/gal) 14.1 15.6 YIELD (ft ³ /sx) 1.55 1.18 WAT. REQ. (gal/sx) 7.8 5.2 T.T. (hr. min) 2:34 3:00		REMARKS	
PRODUCTION HOLE PROGRAM			BIT SIZE 7 7/8"	CASING POINT 6200'	
CASING 5 1/2", J-55 & N-80, 17#/ft, LT&C FLOATING EQUIPMENT Guide shoe Diff. fill float collar CENTRALIZERS Across pay zone		CEMENT SLURRY 1 4% Gel + 0.75% CFR-2. SLURRY 2 Neat + 0.75% CFR-2 (across pay zone) SLURRY-1 SLURRY-2 DENSITY (lb/gal) YIELD (ft ³ /sx) WAT. REQ. (gal/sx) T.T. (hr. min)		REMARKS Final casing and cement program will be submitted when electric logs are available.	
WELLHEAD	SIZE : 13 3/8" x 9 5/8" x 5 1/2" x 2 7/8" WORKING PRESSURE : 2000 - 3000 - 5000 PSI ASSEMBLY :				

MUD PROGRAM

High Salinity low lime

MUD TYPE

DEPTH	MUD WEIGHT	FUNNEL VISCOSITY	PLAST VISC.	YIELD POINT	FLUID LOSS	SOLIDS	OIL
(ft.)	(lb/ft)	(sec)	(CP)	(lb/100ft ²)	(cc)	(o/o)	(o/o)
ML-680	9.0	45-50	No control	spud mud			
680-1530	9.0-9.5	40-45	6-7	9-10	7	8-9	5-6
1530-3500	9.5-10.0	38-40	9-10	14-16	8.0	10	6-8
3500-6200	10.0-10.5	38-40	12-14	18-20	5.0	10-11	6-8

REMARKS

- Maintain ph around 11.5 / free lime : 1.0 - 2.0 ppb
- The mud properties can be altered as well condition required.
- Run solids control equipment all time.

HYDRAULIC PROGRAM

DEPTH	BIT SIZE	NOZZLESS CONVINATION	PUMP PRESS	PUMP LINER	PUMP RATE	ANN VEL	PRESS BIT
(ft)	(in)	(32 nd)	(psi)	(in)	(gpm)	(FPM)	(psi)
ML-680	17"	14-14-14	800	6	420*	38	720
680-1530	12 1/4"	12-12-12	1100	6	380*	78	950
1530-3500	7 7/8"	10-10-10	1500	5 1/2	240	140	1000
3500-6200	7 7/8"	10-10-10	1500	5 1/2	240	140	1100

REMARKS

- * Use both rigs pumps in parallel.

BIT PROGRAM

BIT No.	BIT SIZE	BIT TYPE	DEPTH OUT	FEET	ROT. TIME	WEIGHT ON BIT	ROTARY SPEED
	(in)	(1 ADC Code)	(ft)	(ft)	(hrs)	(1000 lbs)	(RPM)
1	17	1-1-1	680	295	6	10-15	120
2-3	12 1/4	1-1-1	1530	850	32	20-25	100-120
4-6	7 7/8	1-1-4	3500	1970	43	35-40	100
7-11	7 7/8	1-3-6	6200	2700	159	40	8100

REMARKS

Weigh on bit and rotary speed to be adjusted according to Directional Drilling requirements.

Nov. 19/84

Ivan Rodriguez

DATE

PETROLEUM ENGINEERING

CHIEF ENGINEER

DRILLING SUPT

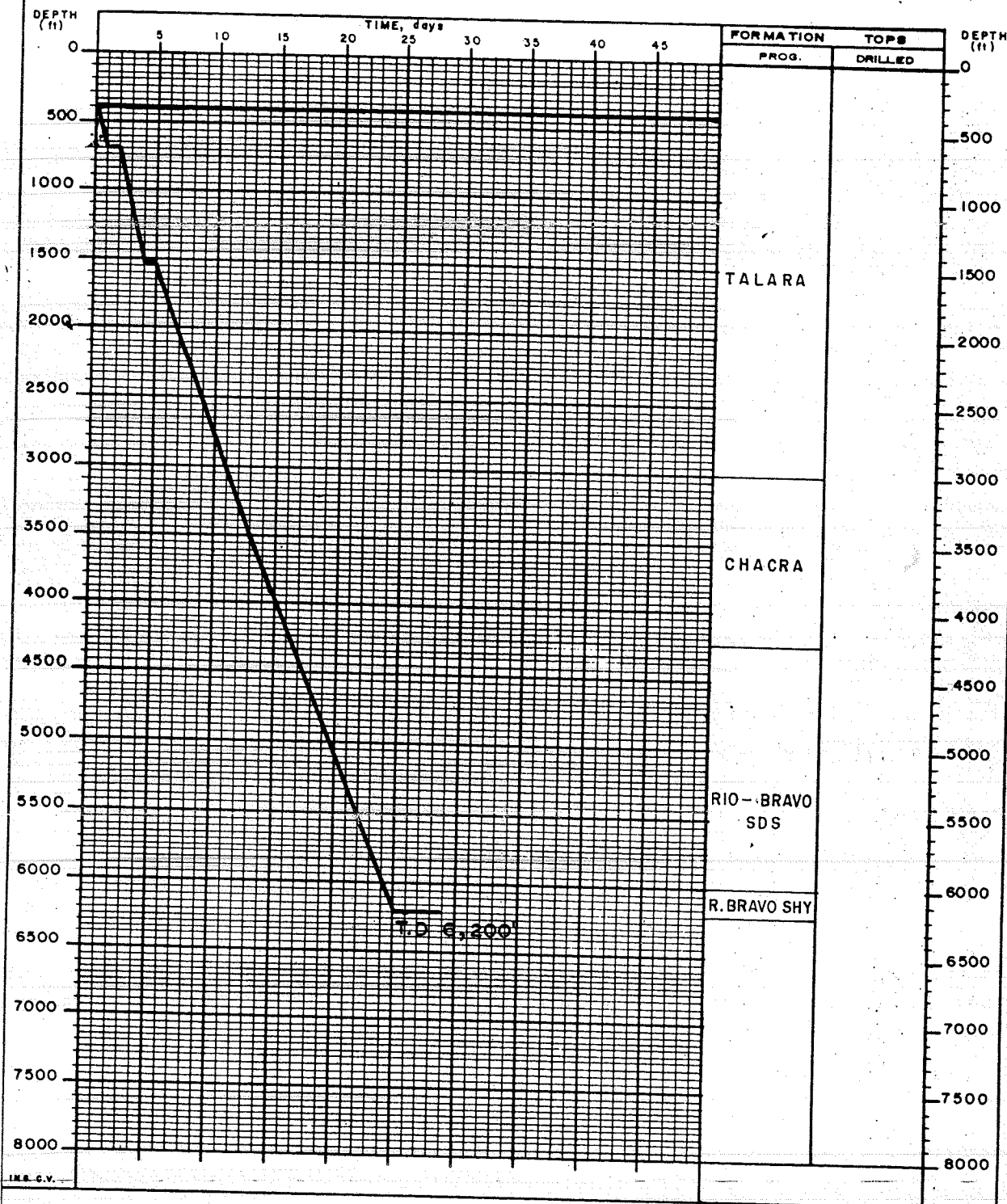


DRILLING TIME PROGNOSIS

WELL	Z2A-21-592-D-L06	L06-18	LOBITOS	DEVELOPMENT	
	OFFICIAL NUMBER	BELCO NUMBER	AREA	TYPE OF WELL	AFE N°
OBJETIVE	PRIMARY	RIO BRAVO	SECONDARY		
RIG	III	NATIONAL 55-A	GARD. - DENVER PY-7	GARD. - DENVER PY-7	
	DRAWWORKS		PUMP N°1	PUMP N°2	

13 3/8"
AT 680'

9 5/8"
AT 1530'



DATE: NOV. 19 / 84

PREPARED BY: IVAN RODRIGUEZ