

BELCO PETROLEUM

CORPORATION OF PERU
(SUCURSAL DEL PERU)

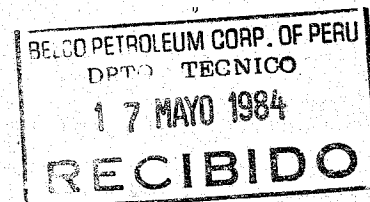
TELEF. - NEGRITOS
843-804-886

APARTADO No. 1
TALARA - PERU

WELL FILE

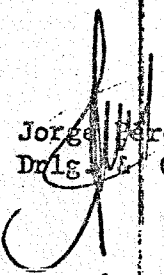
MAY - 09-84
E. -093-84

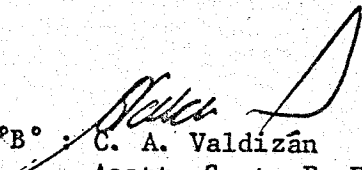
To : Drilling Superintendent
From : Petroleum Engineering
Ref. : Drilling Prognosis for the Well
Z2A-21-560-X-L06 (L06-13x)
Lobitos Offshore.

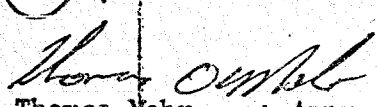


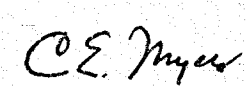
Attached you will find the Drilling Prognosis for the Well in reference to be drilled by Rig III to 5500 feet as total depth.

This program is based on the Geologic Prognosis and data gathered from correlation wells, L04-13, L04-9 and L04-7. In this first well from platform L06 it is expected to find Rio Bravo with similar characteristics of that encountered in L04 platform wells, where the wells for correlation had accumulated 415 MBO, 112 MBO and 102 MBO respectively.


Jorge Pérez N.
Drlg. Compl. Eng.


VºBº : C. A. Valdizán
Asstt. Supt. P. E.


Thomas Mohr : Approved
Drilling Supt.


Approved : C. E. Myers
Engineering Supt.


RG/rso.

cc: Opers. Man. Neg.
Lima Tech.
PetroPeru-Lima
Drlg. Supt. (4)
S.M.D.Co.
Well Site
Finance
Well File



DRILLING PROGNOSIS

WELL	22A-21-560-X-L06 OFFICIAL NUMBER	L06- 13x BELCO NUMBER	Lobitos Offsh. AREA	Exploratory TYPE OF WELL	AFE No.
OBJETIVE	PRIMARY Rio Bravo. 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	Vertical	ESTIMATED DEVIATION Vertical (MAX ANGLE)		ELEVATIONS	K.B 50
CONDUCTOR SIZE AND ANGLE	18" Vertical	RECOMMENDED K.O.P. -			☒ WATER DEPTH 335
ESTIMATED TOTAL DEPTH	5500	ESTIMATED TO REACH T.D. 20 days			☐ GROUND LEVEL
SURFACE HOLE PROGRAM			BIT SIZE 12 1/4" - 17"	CASING POINT 700'	
CASING 13 3/8"; J-55; 54.5 #/ft; LT & C. FLOATING EQUIPMENT Guide Shoe I.F.V. CENTRALIZERS One on each of the bottom two joints (3)		CEMENT SLURRY 1 800 sx(s) of neat cement + 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) 2:30		REMARKS - Estimated hole : 20 1/2" - Cement Top : at surface.	
INTERMEDIATE HOLE PROGRAM			BIT SIZE 12 1/4"	CASING POINT 1600'	
CASING 9 5/8"; J-55; 36 #/ft; LT & C FLOATING EQUIPMENT Guide Shoe I.F.V. CENTRALIZERS One on each of the bottom, every two joints (6)		CEMENT SLURRY 1 600 sx(s) of 4% gel cement. SLURRY 2 100 sx(s) of 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'		REMARKS - Estimated hole is : 14 1/2" - Cement Top : at surface.	
PRODUCTION HOLE PROGRAM			BIT SIZE 7 7/8"	CASING POINT 5500'	
CASING 5 1/2"; J-55; 17 #/ft; LT & C FLOATING EQUIPMENT Guide shoe Diff. fill float collar CENTRALIZERS On the pay zone every two joints.		CEMENT SLURRY 1 Use 4% gel cement. SLURRY 2 SLURRY-1 SLURRY-2 DENSITY (lb/gal) 14.1 YIELD (ft ³ /sx) 1.55 WAT. REQ. (gal/sx) 7.8 T.T. (hr. min)		REMARKS -The final casing and cement pro gram will be submitted accord- ing with the actual well condi tions. -Cement top will be + 1000' above the top of Rio Bravo Fm. -Estimated hole would be: 10 1/2"	
WELLHEAD	SIZE : 13 3/8" x 9 5/8" x 5 1/2" x 2 7/8" WORKING PRESSURE : 3000 - 5000 psi ASSEMBLY :				

MUD PROGRAM		SEA WATER LIGNOSULFONATE 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)
0- 700	9.0- 9.2	45-50	No Control	- Spud	Mud		
700-1600	9.2- 9.6	38-40	12-14	5-6	Below 7-9	8-10	5-6
1600-3100	9.6-10.0	40-42	14-16	6-8	Below 6-8	10-12	5
3100-5500	10.0-10.2	40-42	16-18	7-9	Below 6	10-14	4-5
REMARKS : - Maintain PH around 10.5 - Expected pore pressure is $\pm$ 1750 psi at 4100' V.D. (gathered from nearby wells). - The mud conditions should be change as well conditions require.							

HYDRAULIC PROGRAM							
DEPTH	BIT SIZE	NOZZLESS CONVINATION	PUMP PRESS	PUMP LINER	PUMP RATE	ANN PRESS LOSS VEL	BIT
(ft)	(in)	(32 nd)	(psi)	(in)	(gpm)	(FPM)	(psi)
0- 700	17	14-14-14	800	* 6	420	42	720
700-1600	12 1/4	12-12-13	1200	5 1/2	360	90	920
1600-3100	7 7/8	10-10- 9	1500	5 1/2	240	160	1150
3100-5500	7 7/8	11-10-10	1500	5 1/2	240	160	1000
REMARKS : * Use both 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	RI	700	315	12	15-20	80- 100
** 2-3	12 1/4	1-1-4	1600	1100	46	30-35	100- 110
4-7	7 7/8	1-1-4	3100	1500	85	30-35	100- 110
		1-3-6(J-3)					
8-14	7 7/8	1-1-4	5500	2400	115	35-40	90- 100
		4-3-7(J-11)					
REMARKS : * One 12 1/4" RR bit to open hole for 17" bit. ** Use 12 1/4" RR bits for this sections.							

May 08,84	R. García		
DATE	PETROLEUM ENGINEERING	CHIEF ENGINEER	DRILLING SUPT

DEUCO

DRILLING TIME PROGNOSIS

WELL

Z2A-21-560-X-L06
OFFICIAL NUMBER

L06 213X
DEUCO NUMBER

LOBITOS OFFSH. AREA

EXPLORATORY
TYPE OF WELL

AGE NO

OBJECTIVE

PRIMARY RIO BRAVO

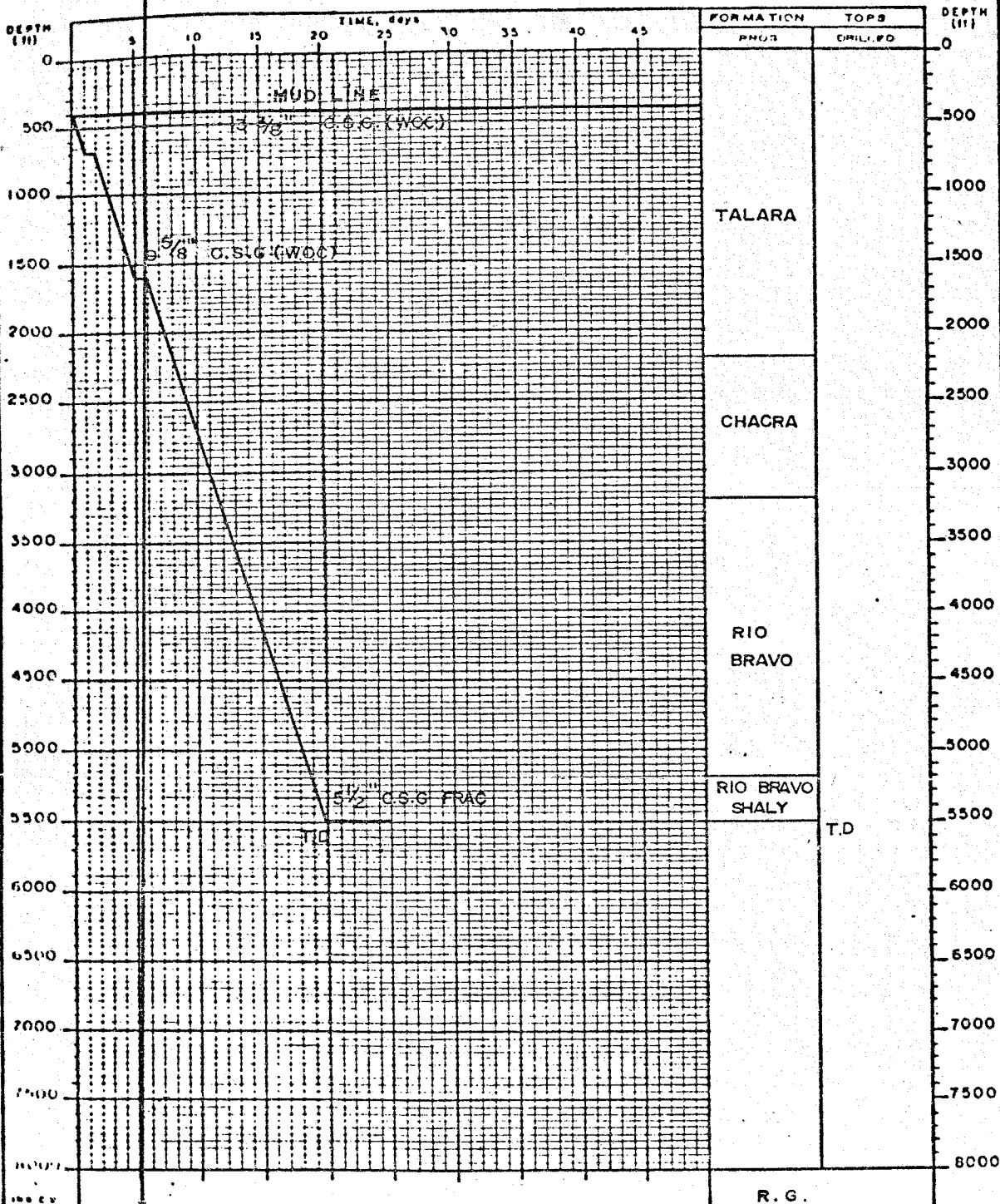
SECONDARY

RIG III

NATIONAL 55-A
DRAWN OFFSHORE

GARDNER DENVER PY-7
PUMP NO 1

GARDNER DENVER PY-7
PUMP NO 2



DATE: MAYO 8, 1984

PREPARED BY: