

BELCO PETROLEUM -
CORPORATION OF PERU
(SUCURSAL DEL PERU)

TELEF. - NEGRITOS
863-864-865

APARTADO N° 1
TALARA-PERU

February 14, 1985.-
P.E.- 47, 1985.-

To : Drilling Superintendent
From : Petroleum Engineering
Ref : Drilling Prognosis for the well
Z2A-21-610-D-L06 (L06-6)

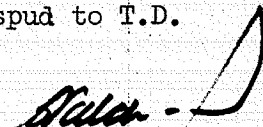
Attached you will find the Drilling Prognosis for well L06-6 to be drilled by Rig III to 5600' TD.;

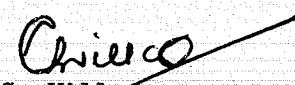
The proposed drilling program can be outlined as follows :

- Spud well with 17" bit and drill to 580' to set 13 3/8" csg at 550'.
- Drill 12 1/4" hole to 1530' to set 9 5/8" csg at 1500'.
- Drill 7 7/8" hole to TD, Run electric log (IEL-GR).
Depending upon evaluation run 5 1/2" csg. and complete well according to program to be submitted accordingly.

Estimated time to drill this well is 20 days from spud to T.D.


José Zamalloa V.
Pet. Engineering

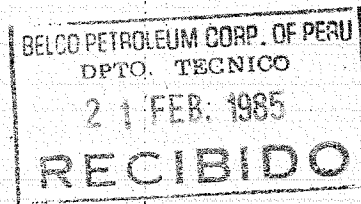

V°B° Carlos Valdizán M
Eng. Supt. (Act)


Approved : G. Villanueva
Drlg. Spt.

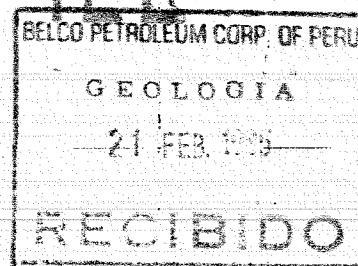
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cc: O.M.

Lima Tech.
PetroPeru-Lima
Drlg. Spt.
Geology
S.M.D.Co.
Finance
Well file



WELL FILE



BELCO

ENGINEERING

DRILLING PROGNOSIS

WELL	Z2A-21-610-D-L06 OFFICIAL NUMBER	L06-6 BELCO NUMBER	Lobitos-Offshore AREA	Development TYPE OF WELL	AFE No.
OBJECTIVE	PRIMARY <u>Rio Bravo</u> SECONDARY -----				
RIG : III	National 55-A DRAWWORKS	G. Denver PY-7 PUMP No. 1		G. Denver PY-7 PUMP No. 2	
DIRECTION OF DEVIATED WELL	S 25 E	ESTIMATED DEVIATION (MAX ANGLE)		ELEVATIONS	K.B. 50
CONDUCTOR SIZE AND ANGLE	18" x 15°	RECOMMENDED K. O. P.			☒ WATER DEPTH 335
ESTIMATED TOTAL DEPTH	5600	ESTIMATED TO REACH T. D.			☐ GROUND LEVEL
		20			
SURFACE HOLE PROGRAM			BIT SIZE	CASING POINT	
			17"	580'	
CASING		CEMENT		REMARKS	
13 3/8", K-55, 61#/ft ST&C 550'(shoe)		SLURRY 1 350 sx (4%)		13 3/8" casing to be flanged to 9 5/8" csg.	
FLOATING EQUIPMENT		SLURRY 2 200 sx neat.			
Guide shoe					
Insert float valve					
CENTRALIZERS		SLURRY-1 SLURRY-2			
One on each of the bottom four joints.		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) 2:0 2:0			
INTERMEDIATE HOLE PROGRAM			BIT SIZE	CASING POINT	
			12 1/4"	1530'	
CASING		CEMENT		REMARKS	
9 5/8", J-55, 40#/ft LT&C 1500'		SLURRY 1 350 sx 4%			
FLOATING EQUIPMENT		SLURRY 2 250 sx neat			
Guide shoe					
Insert float valve					
CENTRALIZERS		SLURRY-1 SLURRY-2			
One on each of the bottom six joints.		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) 2.0 1:30			
PRODUCTION HOLE PROGRAM			BIT SIZE	CASING POINT	
			7 7/8"	5600' (TD)	
CASING		CEMENT		REMARKS	
5 1/2", J-55, N-80; 17#/ft LT&C		SLURRY 1		Casing and cement program will be provided after open hole log.	
FLOATING EQUIPMENT		SLURRY 2			
Guide shoe					
Diff. fill float collar					
CENTRALIZERS		SLURRY-1 SLURRY-2			
On pay zone		DENSITY (lb/gal)			
		YIELD (ft ³ /sx)			
		WAT. REQ. (gal/sx)			
		T.T. (hr. min)			
WELLHEAD	SIZE 13 3/8" x 9 5/8" x 5 1/2" x 2 7/8" WORKING PRESSURE 3000 psi - 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)
Surf-550	9.0	Spud mud	no control				
550-1500	9.0-9.2	40-42	10-12	5-6			
1500-3200	9.1-9.5	38-40	10-12	5-6	7-8	8	5
3200-4500	9.5-10.0	38-40	13-18	6-8	6	8-9	5-6
4500-5600	10.0-10.5	40-42	18-20	8-10	below 5	10-11	6

* Maintain ph around 10.5

* A static gradient of 0.4457 psi/ft on well L06-21 was reported (4971 MD, 4617' VD).

REMARKS

* Strict mud control.

* The mud properties will be changed as well conditions required.

HYDRAULIC PROGRAM

DEPTH	BIT SIZE	NOZZLE CONVIATION	PUMP PRESS	PUMP LINER	PUMP RATE	ANN PRESS LOSS VEL	BIT
(ft)	(in)	(32 nd)	(psi)	(in)	(gpm)	(FPM)	(psi)
Surf-550	17	14-14-14	400-600	*6	450	42	550
550 - 1500	12 1/4	12-12-12	800-1000	*6	350	62	930
1500-3200	7 7/8	10-10-11	1200-1400	5 1/2	240	150	720
3200-4500	7 7/8	10-10-10	1500	5 1/2	240	150	1060
4500-5600	7 7/8	10-10-10	1500	5 1/2	240	150	1060
		11-11-11					

REMARKS

* 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	580	245	8-10	10-15	110-120
2-4	12 1/4	1-1-4	1530	980	36	20-25	100-110
5-11	7 7/8	1-1-4	4500	3000	165	30-35	90-100
12-15	7 7/8	1-3-6	5600	1100	65	35-40	90-100
		1-1-4					

REMARKS

Feb/13/84

DATE

W. Cotrina C.

PETROLEUM ENGINEERING

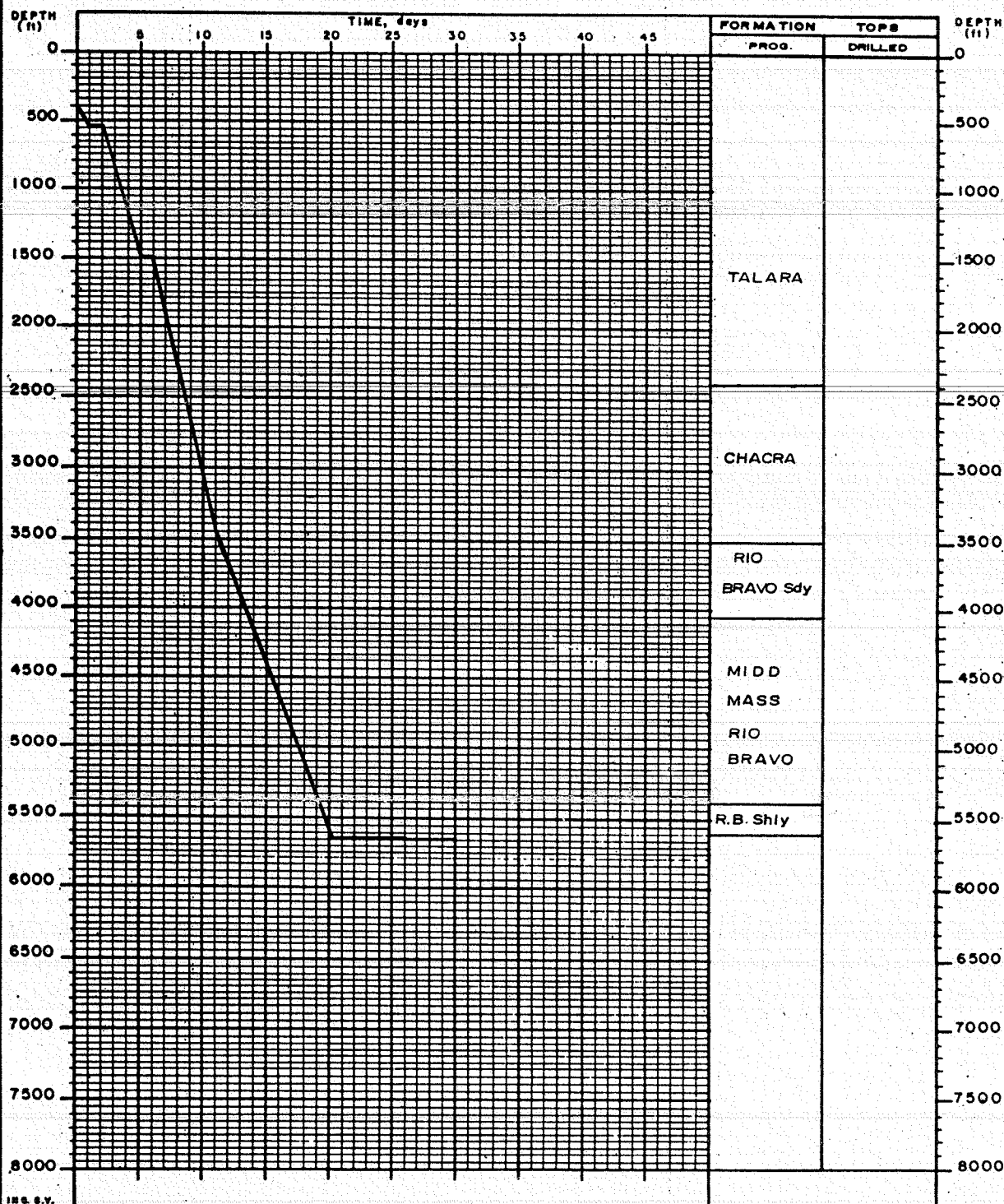
CHIEF ENGINEER

DRILLING SUPT



DRILLING TIME PROGNOSIS

WELL	Z2A-21-610-D-106 OFFICIAL NUMBER	106-6 BELCO NUMBER	LOBITOS OFFSH. AREA	DEVELOPMENT TYPE OF WELL	AFE N°
OBJETIVE	PRIMARY RIO BRAVO Moss Sd. SECONDARY				
RIG III	NATIONAL 55-A DRAWWORKS	G. DENVER PY-7 PUMP N°1	G. DENVER PY-7 PUMP N°2		



DATE: FEB-14-15

PREPARED BY: W. COTRINA