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**INTEROFFICE MEMORANDUM
DEVM-001-2014**

To: Pedro Alarcon / Jae Hwi Gwag / Jin Seok Yi

From: H. Janampa, V. Delgado, H. Cornejo, J.C. Muñoz, C. Canales, E. Borda

Date: 21th January 2014

Subject: Proposal to Drill Development Well LO16-29D

It is recommended to drill the proposed well LO16-29D to development 168 MBO of reserves in the Mogollon Formation southwest of Lobitos Field. Programmed TD is 7866' MD (-5480' VSS) and well cost estimated is 4,204 MUS\$ (Figures 1, 2)

LO16-29D is proposed as a directional well; with a maximum vertical angle of 51° towards N 52° W (Figures 3, 4, 5, 6)

The chance of success (COS) is 90%

Proposed well LO16-29D for Mogollon is located in a reservoir block of 500 acres in the same reservoir of well LO6-29D. The proposed well is located in a good trend of sands, with 430 feet of vertical gross sand thickness. Last wells completed in Mogollon, LO6-27D and LO6-29D showed good sands development with good petrophysical characteristics, these wells had an initial rate of 219 BOPD and 834 BOPD of Mogollon fm. (Fig.7 and 8)

The vertical sequence of Mogollon suggest that this formation was deposited as Delta complex, the lower section is composed of Sandstones with low porosity, grading to sands with better porosities around of 11.8% and good oil shows in the upper section, which constitute the main reservoir sands based on petrophysical properties and production.

For a complete evaluation, better understanding and modeling of Mogollon reservoir, it is recommended a full logging set of gamma ray, resistivity, neutron-density, image log and dipolar sonic (optional). (Fig.2)

The main risks associated with this well location are:

Sedimentary changes that could reduce the net sand thickness and petrophysics properties.

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ECONOMIC SUMMARY

CASE	IP (BOPD)	EUR (MBO)	CAPEX (MUS\$)	NPV 10.5% (M\$)	PAY OUT (YRS)	AT PIR	ROR (%)
LOW	150	81	4,204	352	6.58	0.08	16
BASE	305	168	4,204	4,175	0.92	0.99	>100
HIGH	530	291	4,204	9,611	0.58	2.29	>100

CONSIDERATIONS

Net Revenue Interest %	84%
Discount Rate %	10.5%
Tax	30%
Variable Cost, US\$/BL	0.91
Fixed MUS\$/Year	36.6
Cost MUS\$	4,204
Oil Price according Portfolio MTP 2012: 95 US\$/BL for 2013 & 2014 phased 2% yearly from 2015 to 2023.	

Base case reserves and IPR for this well are estimated 168 MBO & 305 BOPD respectively, the drilling cost estimated is 4,204 M, NPV is US\$ 4,175 M using portfolio parameters with discount rate of 10.5%

(Figures 7 & Tables A & B)

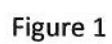
Proposed well is supported with AFE N° 2214293, EIA with Directorial Resolution N° 444-2009-MEM/AAE and risks evaluation according to SIMOP procedure.

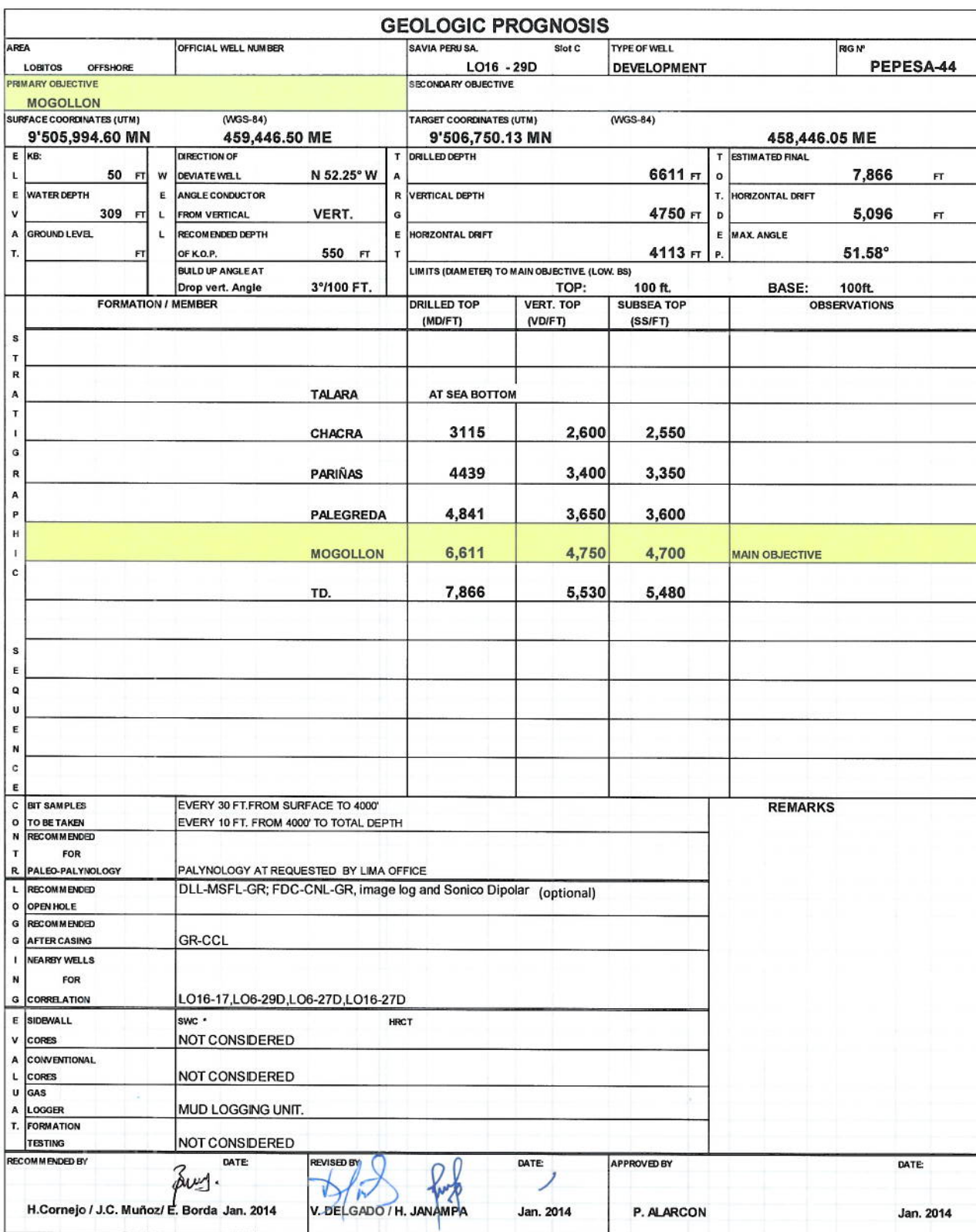
Cc:

J. Duarte	J. Chuyes	V. Peralta
J. Garzon	R. Gilabert	E. Borda
B. Kim	A. Agurto	E. Gonzales
G. Idiaquez	C. Ramírez	K. Valencia
C. Valdizan		Central File

Attached Documents

Fig.1: Top Mogollon Fm., showing the proposed well LO16-29D
 Fig.2: Geological Prognosis
 Fig.3: Seismic Line showing the proposed well LO16-29D
 Fig 4: SW-NE Structural Cross Section for proposed well LO16-29D
 Fig.5: Mogollon Fm. Gross Sand Map for proposed well LO16-29D
 Fig.6: NW-SE Stratigraphic correlation of Mogollon Fm. for proposed well LO16-29D
 Fig 7: Estimated Oil production of Mogollon and closest producers wells
 Fig 8: Drilling and Cost Time-Depth Chart of well LO16-29D
 Table A: Economic Summary and Oil rate forecast for well LO16-29D
 Table B: AFE for Proposed well LO16-29D



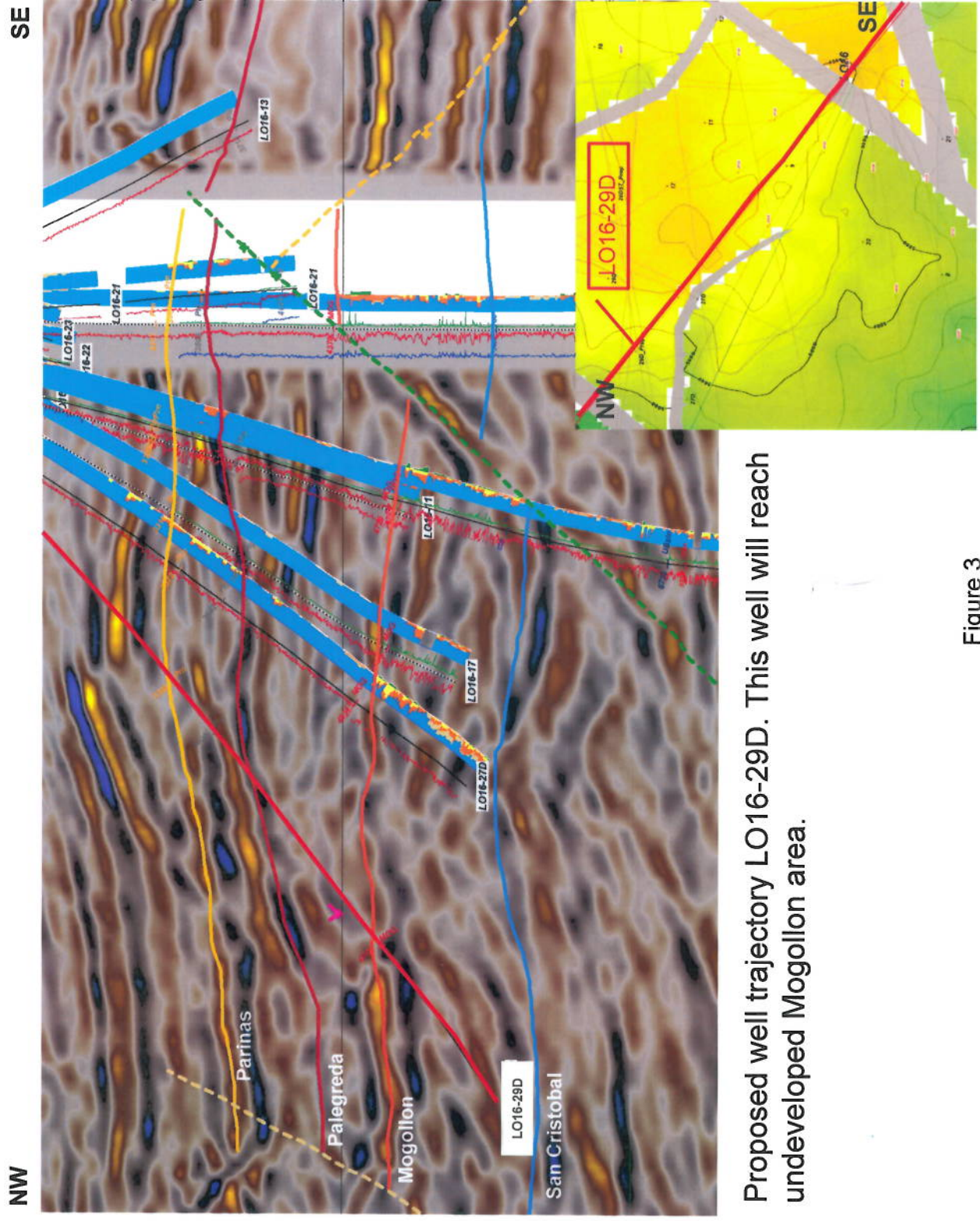




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Block Z-2B

3D Seismic Line showing the proposed well LO16-29D
E. Borda 2014



Proposed well trajectory LO16-29D. This well will reach undeveloped Mogollon area.

Figure 3

LOBITOS FIELD

NW-SE STRUCTURAL SECTION FOR PROPOSED WELL LO16-29D

Graphic Scale

H. Cornejo

Jan 2014

A' SE

A NW

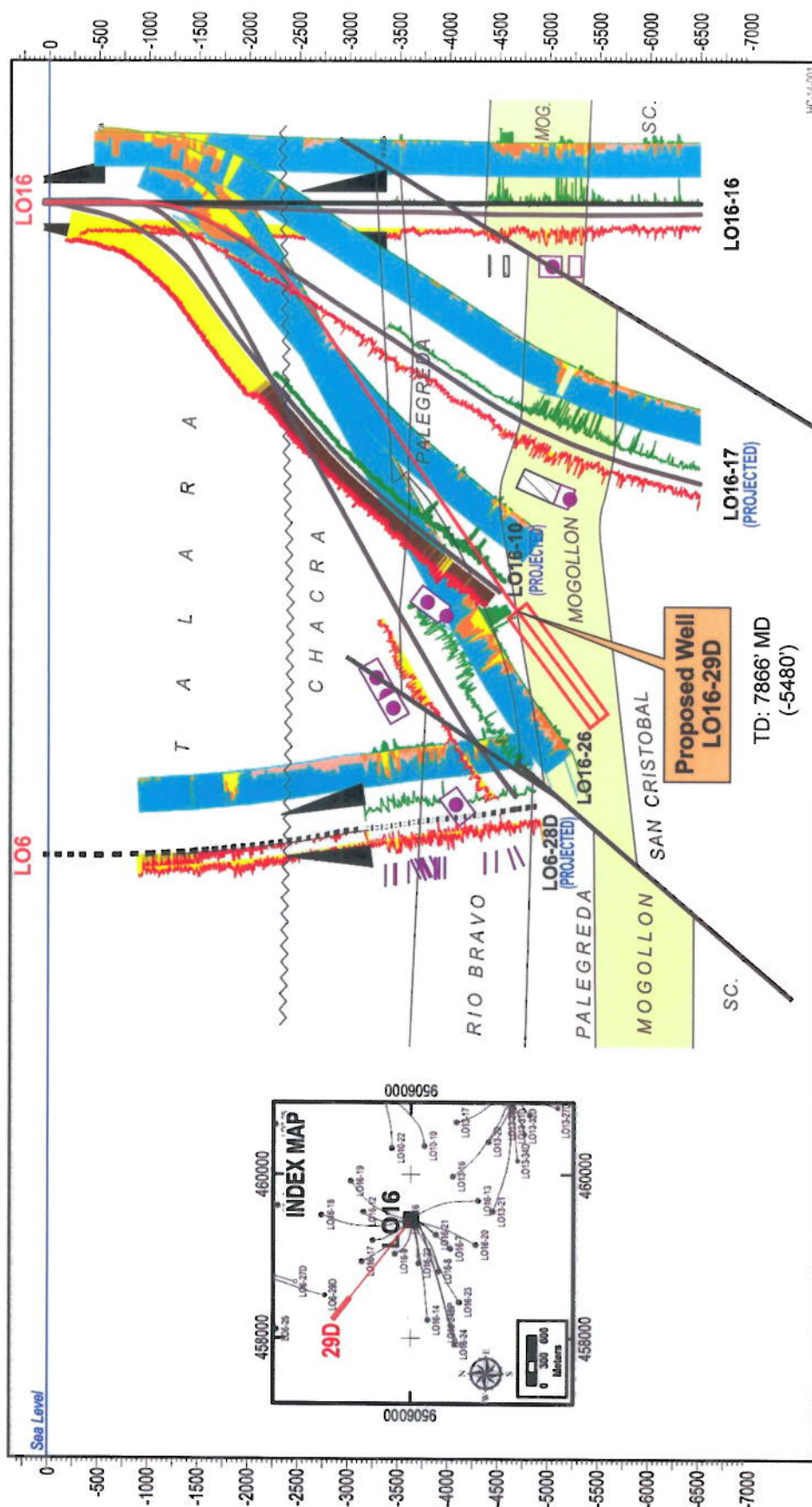


Figure 4

Z-2B LOBITOS FIELD
MOGOLLON FM. - GROSS SAND MAP

C. Canales / E. Coronado

Jan 2014

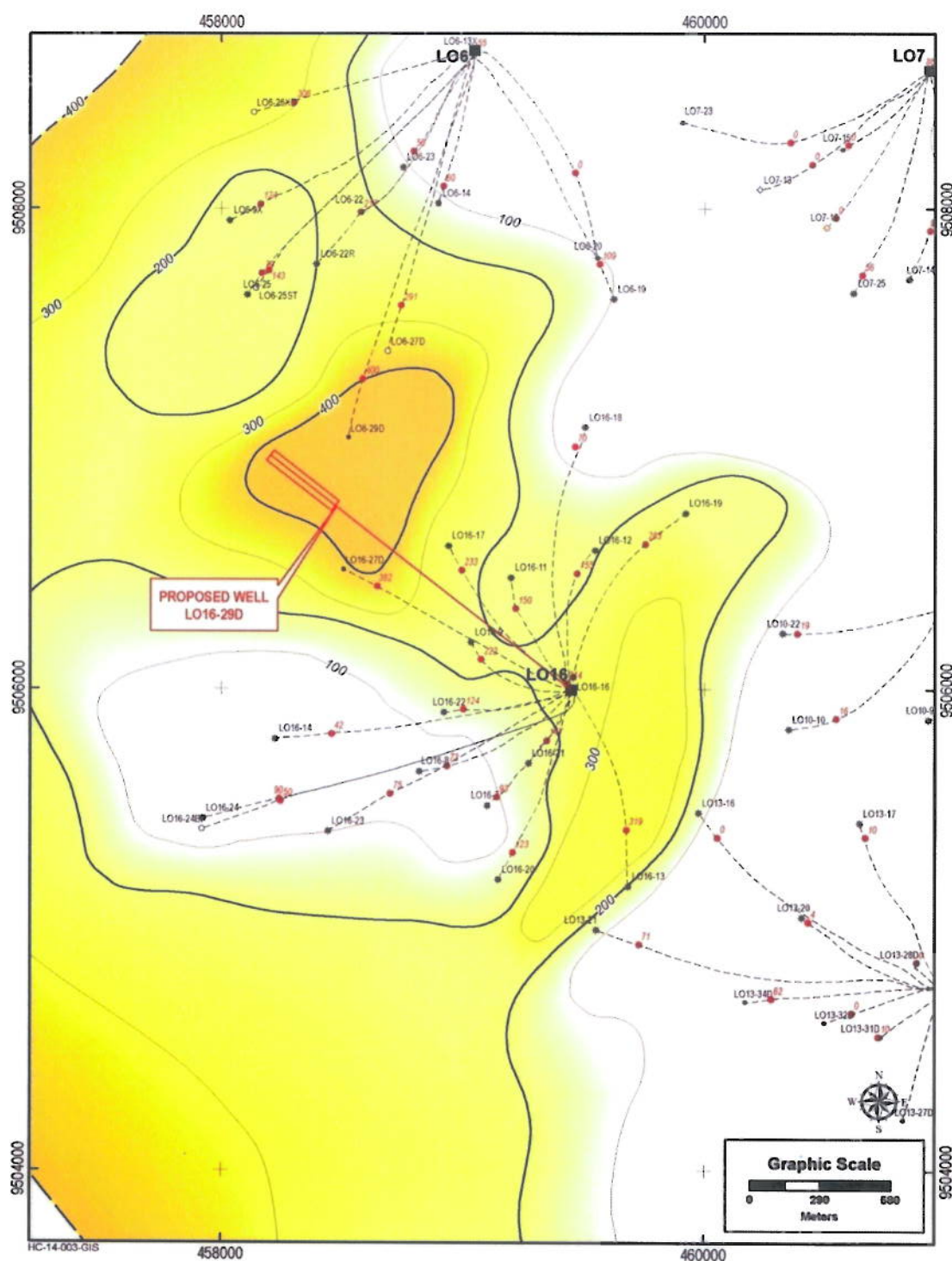


Figure 5



SW-NE STRATIGRAPHIC SECTION A-A' SHOWING THE PROPOSED WELL LO16-29D

Graphic Scale

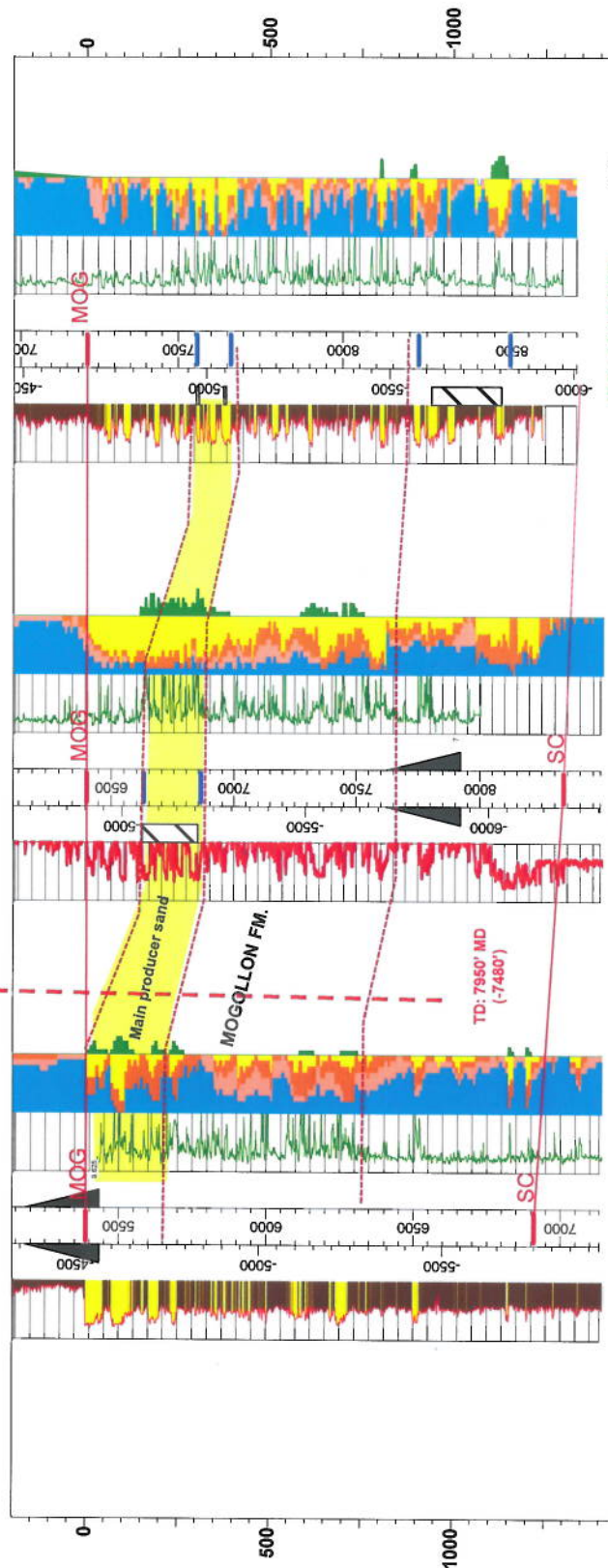
January 2014

H. Cornejo

B SW **B'** NE

LO16-27D 443 m LO6-27D 390 m LO6-29D 700 m

PROPOSED WELL LO16-29D



IPR: 834 BOPD
ACC: 59 MBO
10/2013

IPR: 230 BOPD
ACC: 29 MBO
07/2013

On completion Jobs
(UBS)

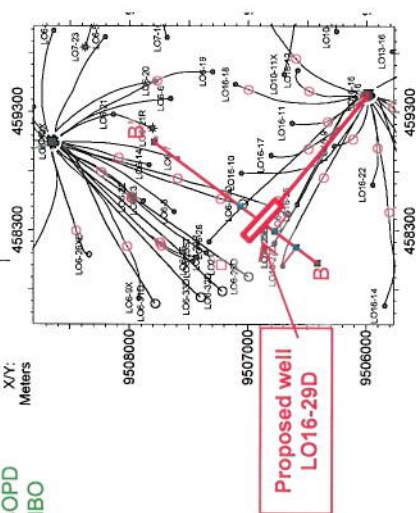
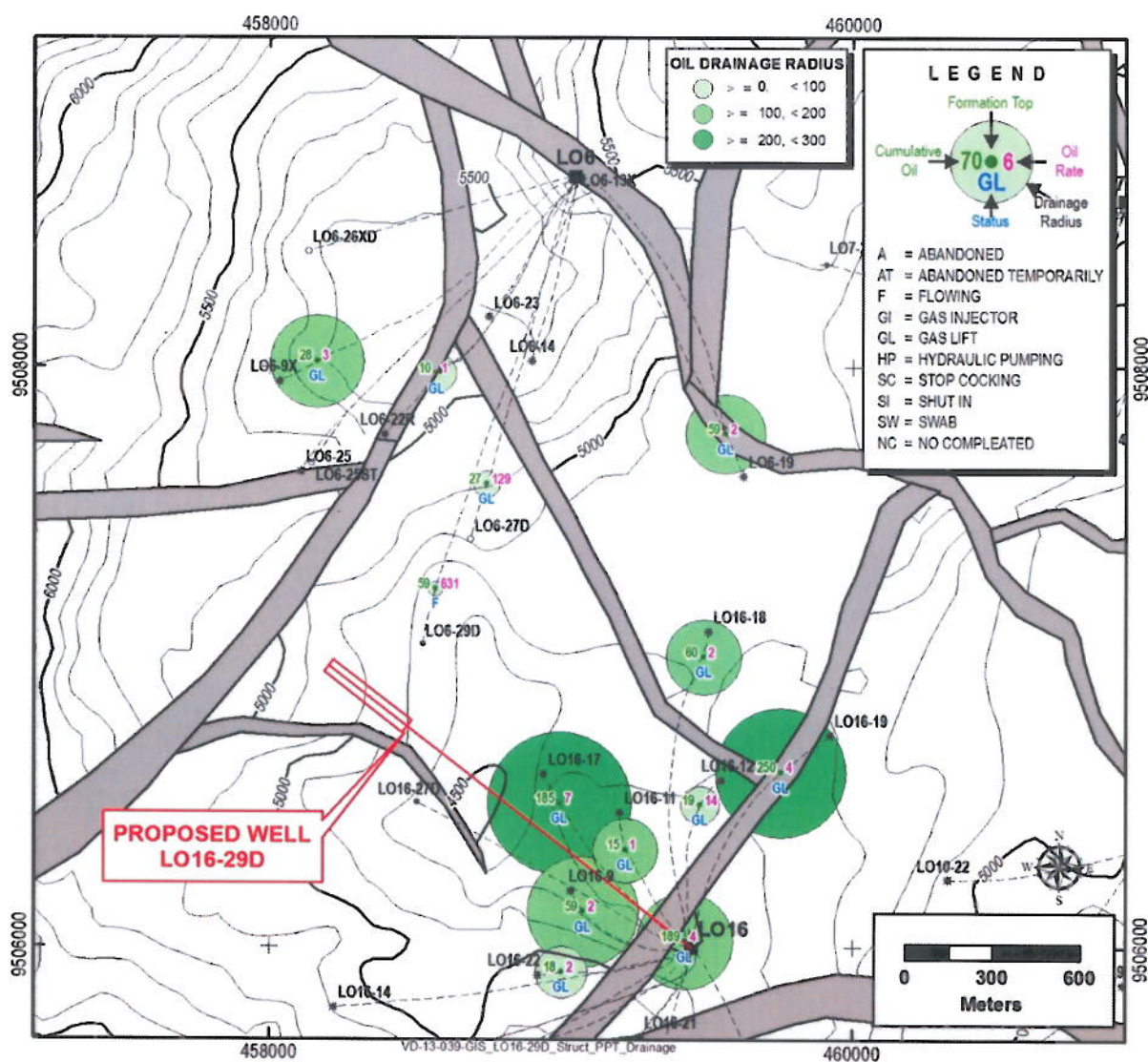


Figure 6

Z-2B LOBITOS FIELD
BUBBLE MAP – MOGOLLON FORMATION
ESTIMATED OIL PRODUCTION AND RESERVES

J. MUÑOZ

Jan 2014



ESCENARIO	BASE ft	TOPE ft	Fm.	Pr inic. psi	Pr act. psi	Depl. %	EUR Mbls	Qo bopd
LOW	5530	4750	MOGOLLON	3033	2577	15%	81	150
BASE	5530	4750	MOGOLLON	3033	2810	7%	168	305
HIGH	5530	4750	MOGOLLON	3033	3033	0%	291	530

Figure 7

Z-2B LOBITOS FIELD
DRILLING AND COST TIME-DEPTH CHART
 Drilling Department Jan 2014



LO16-29D
 Depth and Cost Vs. Days

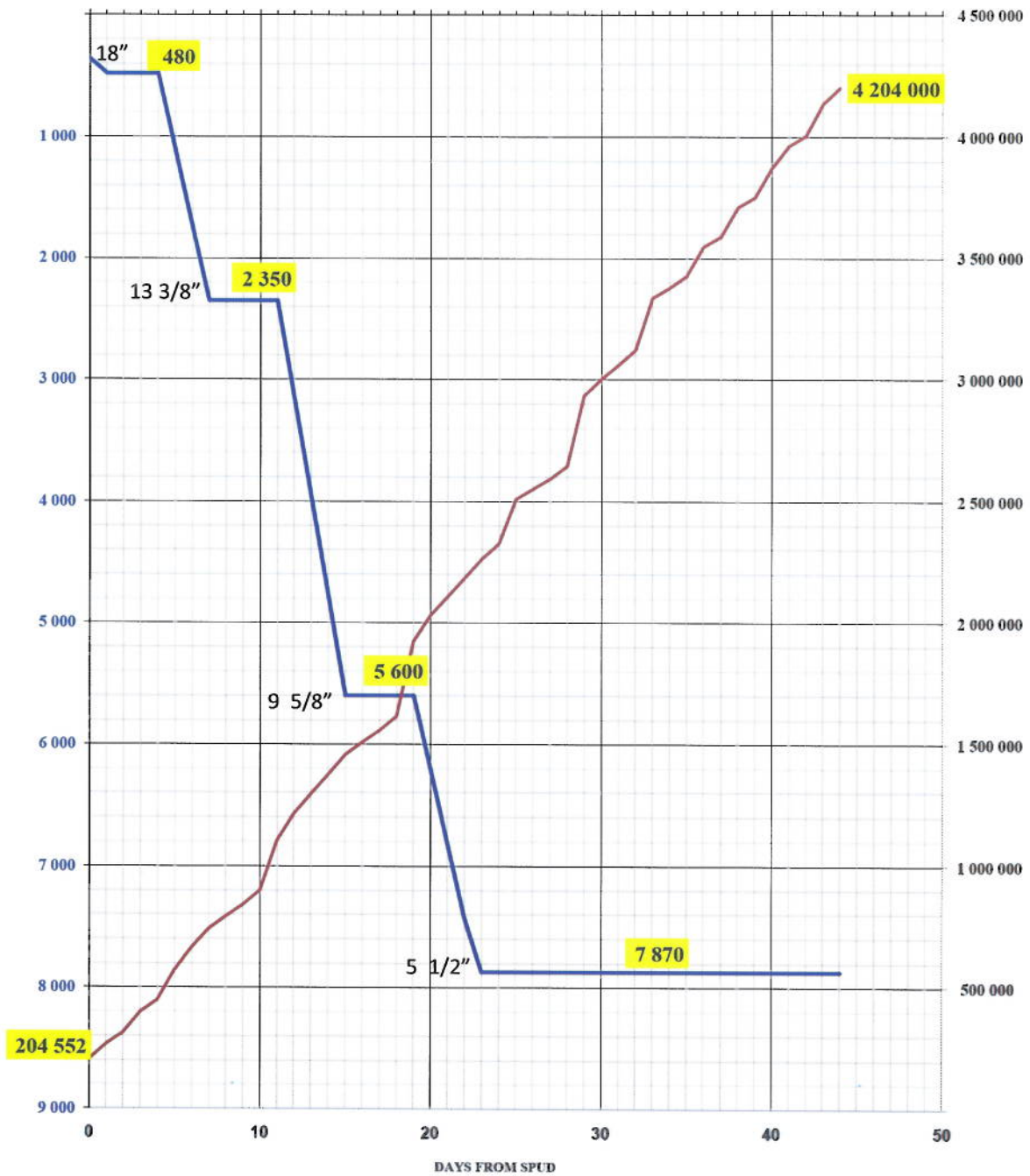


Figure 8

Z-2B LOBITOS FIELD

AFE

Drilling Department

Jan 2014



LO16-29D

CIA	ACD	BUDGET ITEM
06		

A F E No.
2214293

FU	WELL DESCRIPTION	OFICIAL NUMBER	MM / DD / AA
18	LO16-29D	SAVIA-Z2B-24-LO16-29D	

FU	TYPE OF WELL	MOV / COND	DRILLING	COMPLETION	EST. FOOTAGE	AREA
19	DEVELOPMENT	5	23	21	7870	LOBITOS

FU	GEN	CC	AREA
20		061	

WELL COST BREAKDOWN

SUB	DESCRIPTION	QUANTITY	UNIT COST	SUB-TOTAL	TOTAL US\$
OUTSIDE SERVICES:					
201	DRILLING RIG	28	23		1 043 500
203	DIRECTIONAL DRILLING				243 820
204	MUD LOGGING	24	1450		34 800
205	MUD ENGINEERING				194 580
206	CEMENT CONDUCTOR				13 990
206	CEMENT, SURF. CSG (13 3/8")				22 060
206	CEMENT, INTERM. CSG (9 5/8")				22 890
206	CEMENT, OTHERS				17 160
206	CEMENT 7" CSG.				0
206	CEMENT, 5.5" CSG				21 990
207	ELECTRIC LOGGING				140 000
208	PERFORATING				150 000
209	STIMULATION				120 000
211	TUBULAR INSPECTION				13 250
212	HYDRAULIC TONGS				55 200
213	DIVING				21 000
219	WELL TESTING				8 000
221	TOOL SERVICES				26 000
224	METALIC STRUCTURES CUT & WELD				2 600
228	MACHINE WORK				7 500
229	BARGE OPERATIONS				220 500
231	BOAT OPERATIONS				303 800
237	MATER. & EQUIP. TRANSP.				17 160
240	WATER FURNISHING				15 000
243	CHARTER				0
244	TOOLS RENTAL				28 700
248	CATERING				44 100
249	CONSULTING				61 250
252	ENVIRONMENTAL PROTECTION				5 750
	TOTAL OUTSIDE SERVICES:				2 851 480
MATERIALS & SUPPLIES:					
301	FITTING SCREWED				210
303	VALVES AND PARTS				800
304	API FLANGES & RING GASKET				800
306	HARDWARE				1 000
325	BITS				84 600
326	TOOLS FOR DRILLING				63 790
327	COMPLETION EQUIPMENT				93 500
328	FLOATING EQUIPMENT - CMT.				18 710
329	PRODUCTION FACILITIES EQUIP.				3 000
335	OTHERS TUBULAR CONNECTIONS				12 000
336	STRUCTURAL CONST. MAT.				10 000
340	WELDING MATERIAL				700
341	MAT. CMT. CONDUCT.				2 400
341	MAT. CMT. SURF. CSG. (13 3/8")				17 160
341	MAT. CMT. INTERM. CSG. (9 5/8")				28 130
341	MAT. CMT. 7" CSG.				0
341	MAT. CMT. 5.5" CSG.				25 950
341	MAT. CMT. OTHERS				5 840
342	STIMULATION MATERIAL				120 000
343	DRILLING / COMPLETION FLUIDS				65 750
344	CONDUCTORS	490	45.50		21 840
344	SURFACE CSG. (13 3/8")	2350	45.50		108 930
344	INTERM. CSG. (9 5/8")	5800	34.00		190 400
344	7" CSG.	0	21.00		0
344	5.5" CSG.	7870	18.00		141 660
344	4.5" LINER	0	18.70		0
344	2 7/8" TUBING	7600	5.90		44 840
346	DIESEL-FUEL				285 210
347	OIL & GRASES				7 500
	TOTAL MATERIALS & SUPPLIES:				1 352 520
TOTAL PROJECT COST US \$					4 204 000

TABLE B