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INTEROFFICE MEMORANDUM
DEVN-055-13

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

From: F. Paredes, V. Delgado, H. Cornejo, J.C. Muñoz, E. Borda

Date: August 9th, 2013

Subject: **Proposal to Drill Development Well LO6-29D**

It is recommended to drill the proposed well **LO6-29D to development 194 MBO** of reserves in the Mogollon Formation southwest of Lobitos Field. Programmed TD is 9155' MD (-6327' VSS) and well cost estimated is 3,800 MU\$ (Figures 1, 2, 3, 4)

LO6-29D is proposed as a directional well; with a maximum vertical angle of 61.5° towards S 20° W (Figures 1, 2, 3, 5)

The chance of success (COS) is 90% (Fig. 8)

The proposed location to be drilled LO6-29D for Mogollon is located in a reservoir block of 350 acres in the same reservoir of well LO16-17 which was completed in Mogollon with an initial rate of 155 BOPD and 184 MBO of cumulative oil. The proposed well is located in a good trend of sands, with 200 feet of vertical net sand thickness. Last well completed in Mogollon, LO6-27D showed good sand development with good petrophysical characteristics, this well had an initial rate of 219 BOPD (Fig.6 and 9)

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 (Figure 8). If a good Rio Bravo is encountered, a commingled completion with Mogollon could be considered.

Rio Bravo formation is considered as a secondary objective where the more recent wells completed in this formation as the LO6-28D with original pressure and an initial rate of 686 BOPD. The second well LO6-31D with an initial rate of 304 BOPD. (Fig. 2,5 and 7)

For a complete evaluation, better understanding and modeling of Mogollon reservoir, it is recommended a full logging set of gamma ray, resistivity, and neutron-density (Fig.3)

The main risks associated with this well location are:

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

ECONOMIC SUMMARY

CASE	IP (BOPD)	EUR (MBO)	CAPEX (MUS\$)	NPV 10.5% (M\$)	PAY OUT (YRS)	AT PIR	ROR (%)
LOW	240	155	3,800	3,152	1.75	0.83	57
BASE	300	194	3,800	4,687	1.50	1.23	89
HIGH	360	232	3,800	6,222	1.25	1.64	>100

CONSIDERATIONS

Net Revenue Interest %	84%
Discount Rate %	10.5%
Tax	30%
Variable Cost, US\$/BL	0.91
Fixed MUS\$/Year	36.6
Cost MUSD\$	3,800
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 194 MBO & 300 BOPD respectively, the drilling cost estimated is US\$ 3,800 M, NPV is US\$ 4,687 M using portfolio parameters with discount rate of 10.5%

(Figures 9,10 & Tables A & B)

Proposed well is supported with AFE N° 2214237, EIA with Directorial Resolution N° 444-2009-MEM/AAE and risks evaluation according to SIMOP procedure.

Cc: J. Duarte, C. Hwang; O. Nieto E. Borda
J. Garzon R. Gilabert V. Peralta Central File
B. Kim J. Chuyes A. Agurto E. Gonzales
C. Valdizan C. Montes R. Corman L. Torres V
C. Ramírez K. Valencia J. Gwag G. Idiaquez

Attached Documents

Fig.1: Top Mogollon Fm., showing the proposed well LO6-29D
Fig.2: Top Rio Bravo Fm., showing the proposed well LO6-29D
Fig.3: Geological Prognosis
Fig.4: Seismic Line showing the proposed well LO6-29D
Fig 5: SW-NE Structural Cross Section for proposed well LO6-29D
Fig.6: Mogollon Fm. Net Sand Map for proposed well LO6-29D
Fig.7: Rio Bravo Fm. Net Sand Map for proposed well LO6-29D
Fig.8: SE-NW Stratigraphic correlation of Rio Bravo Fm. for proposed well LO6-29D
Fig 9: Estimated Oil production of Mogollon and closest producers wells
Fig 10: Drilling and Cost Time-Depth Chart of well LO6-29D
Table A: Economic Summary and Oil rate forecast for well LO6-29D
Table B: AFE for Proposed well LO6-29D

Edgar Borda August 2013

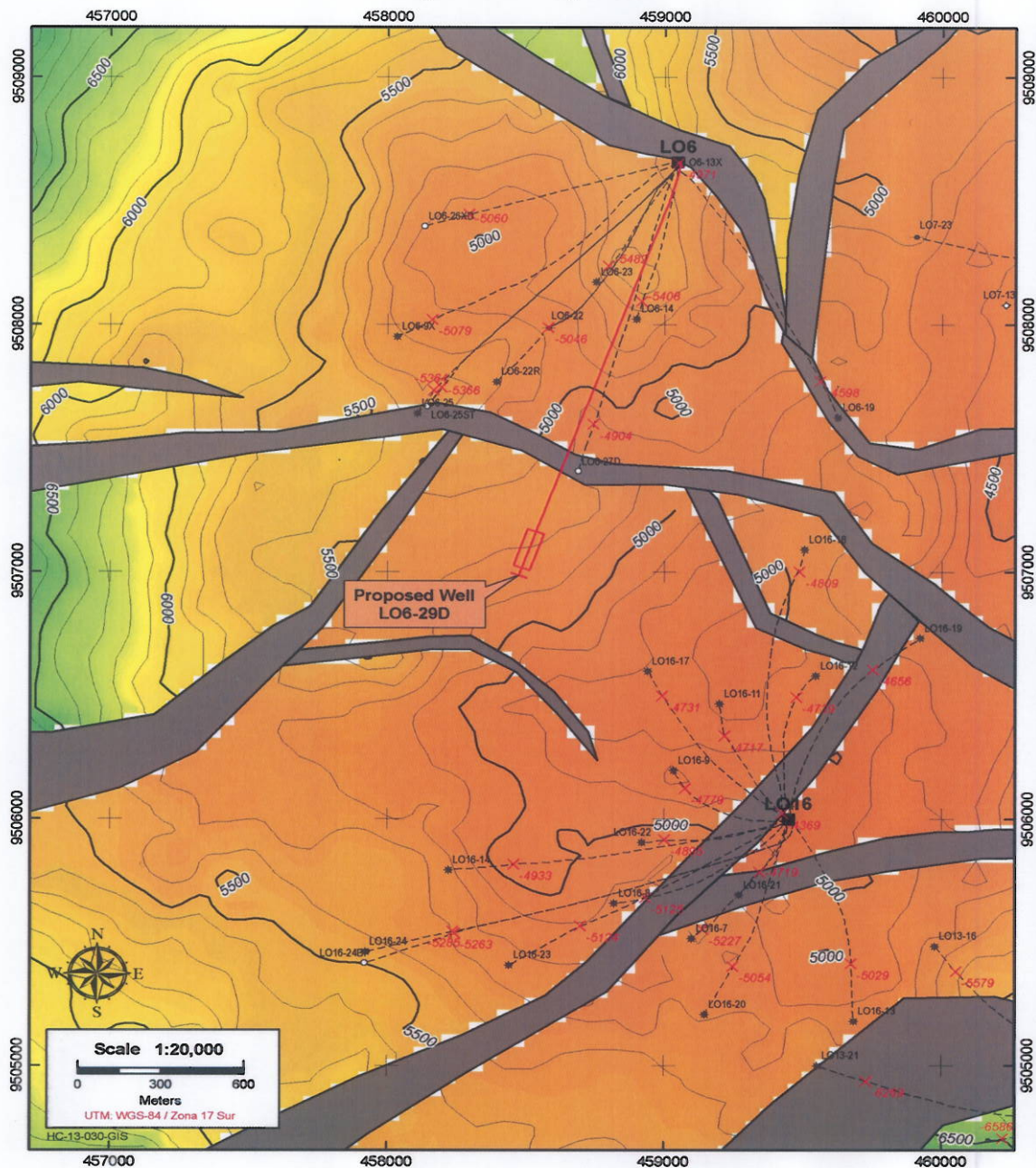


Fig 1: Structural Map Mogollon formation showing the Proposed Well LO6-29D

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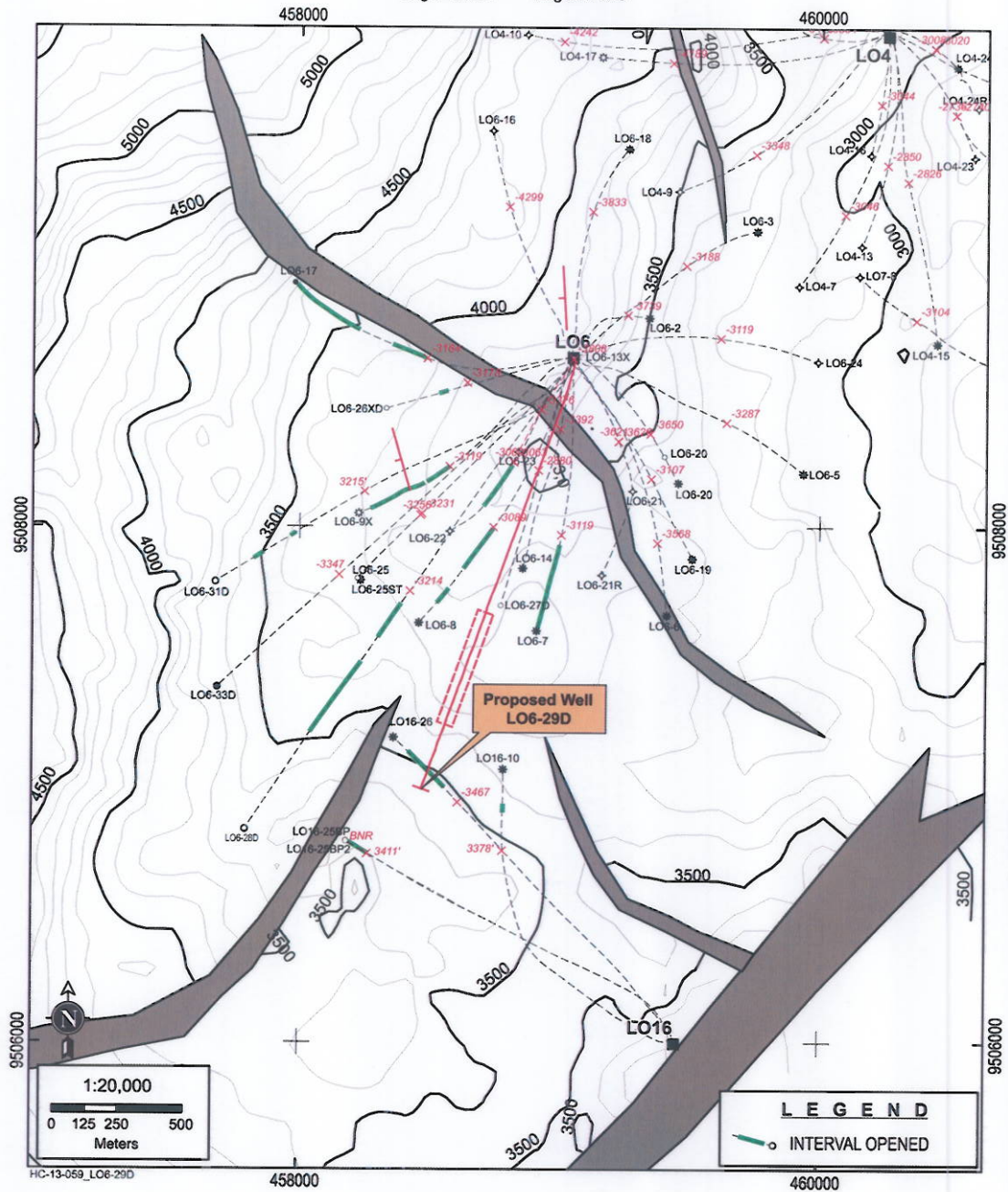
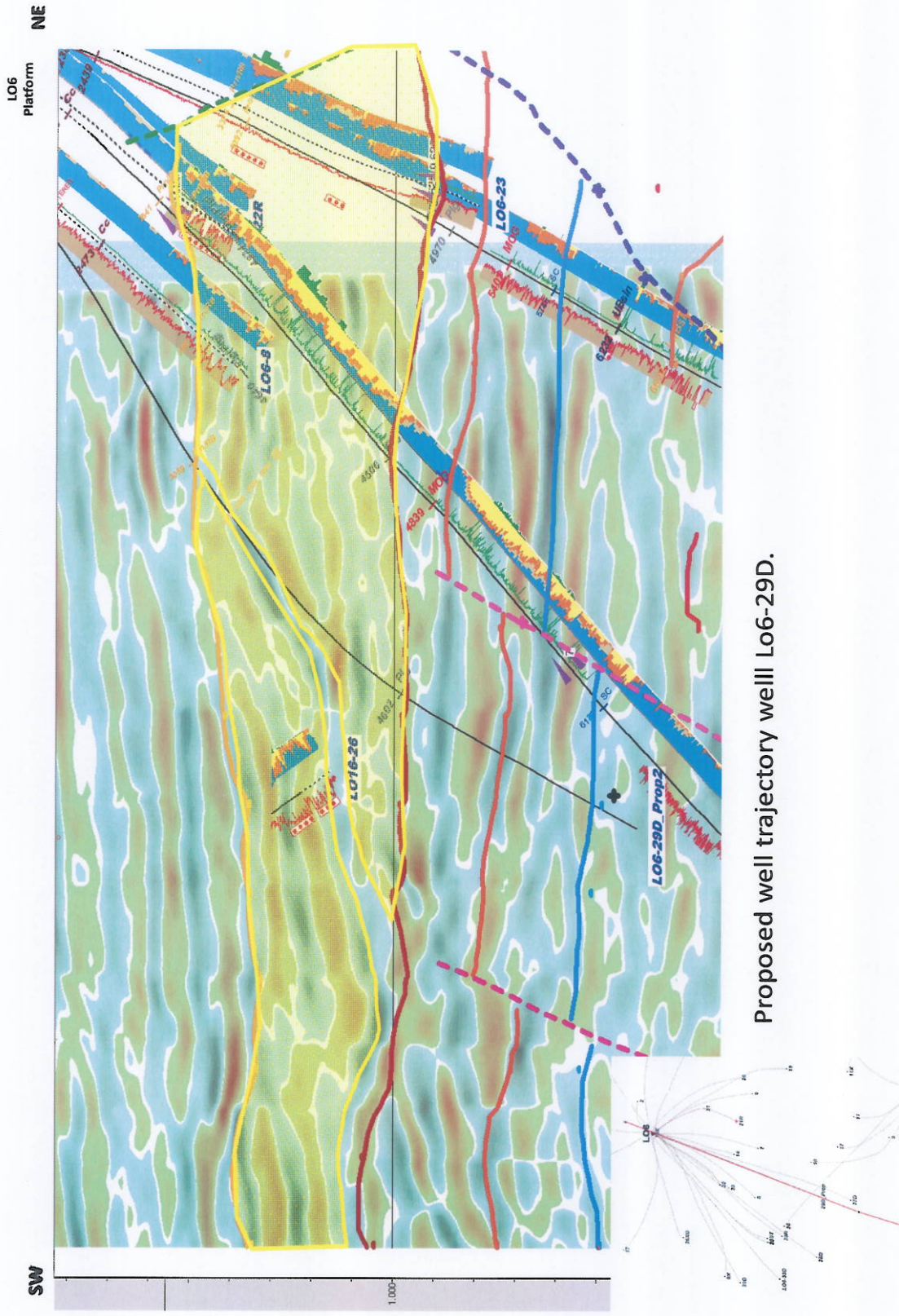


Fig 2: Structural Map Rio Bravo formation showing the Proposed Well LO6-29D

LO6-29D Well Proposal



Proposed well trajectory well Lo6-29D.

Fig. 4: SW-NE 3D seismic Line for proposed well LO6-29D



LOBITOS AREA **SW-NE STRUCTURAL SECTION A-A' FOR PROPOSED WELL LO6-29D**

Scale 1:20,000
H. Cornejo August 2013

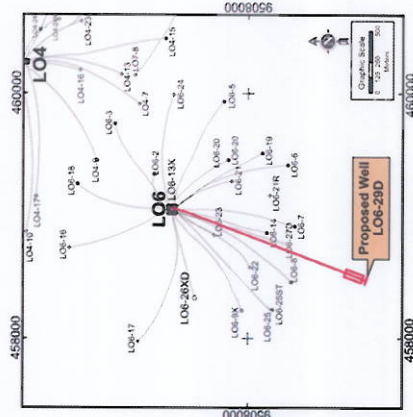
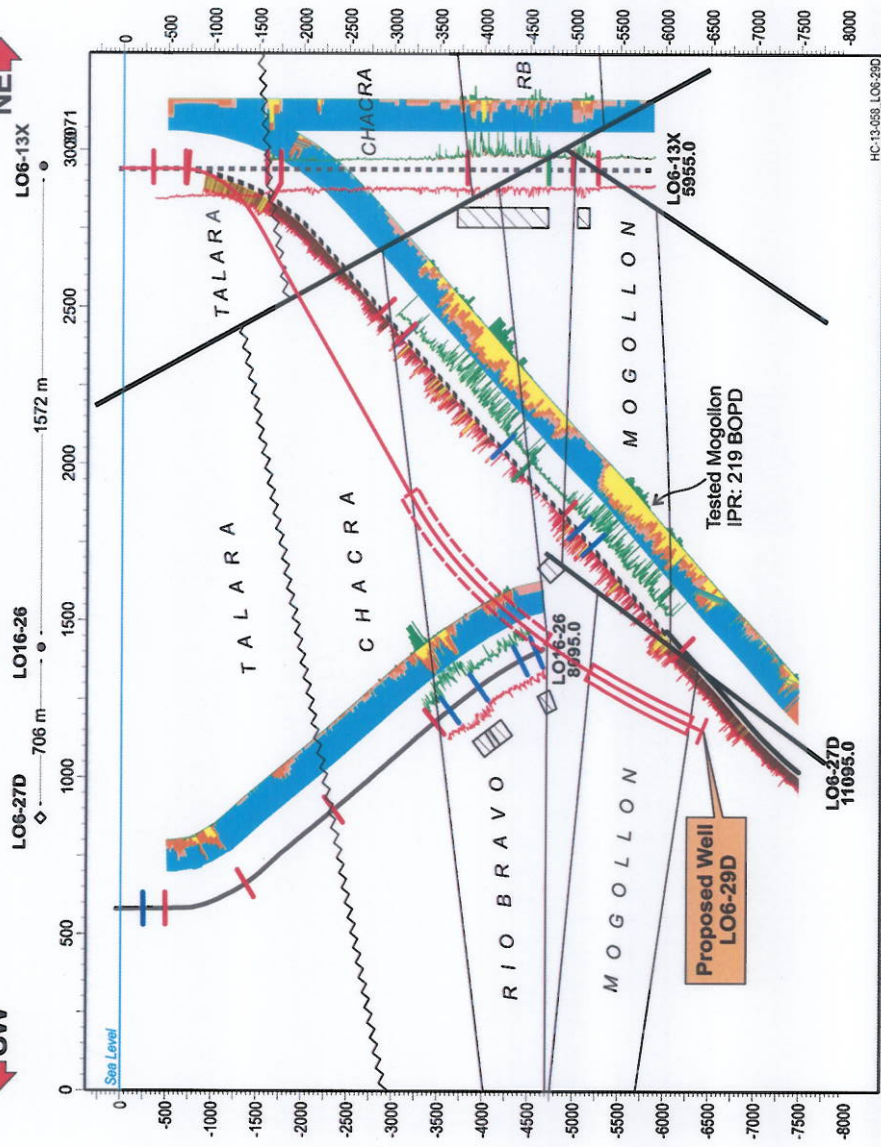
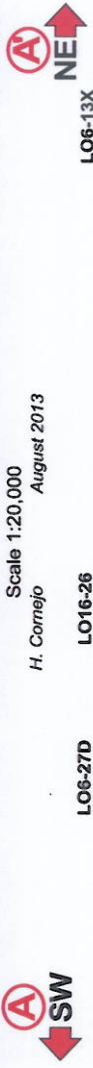


Fig. 5: SW-NE Structural Cross Section for proposed well LO6-29D

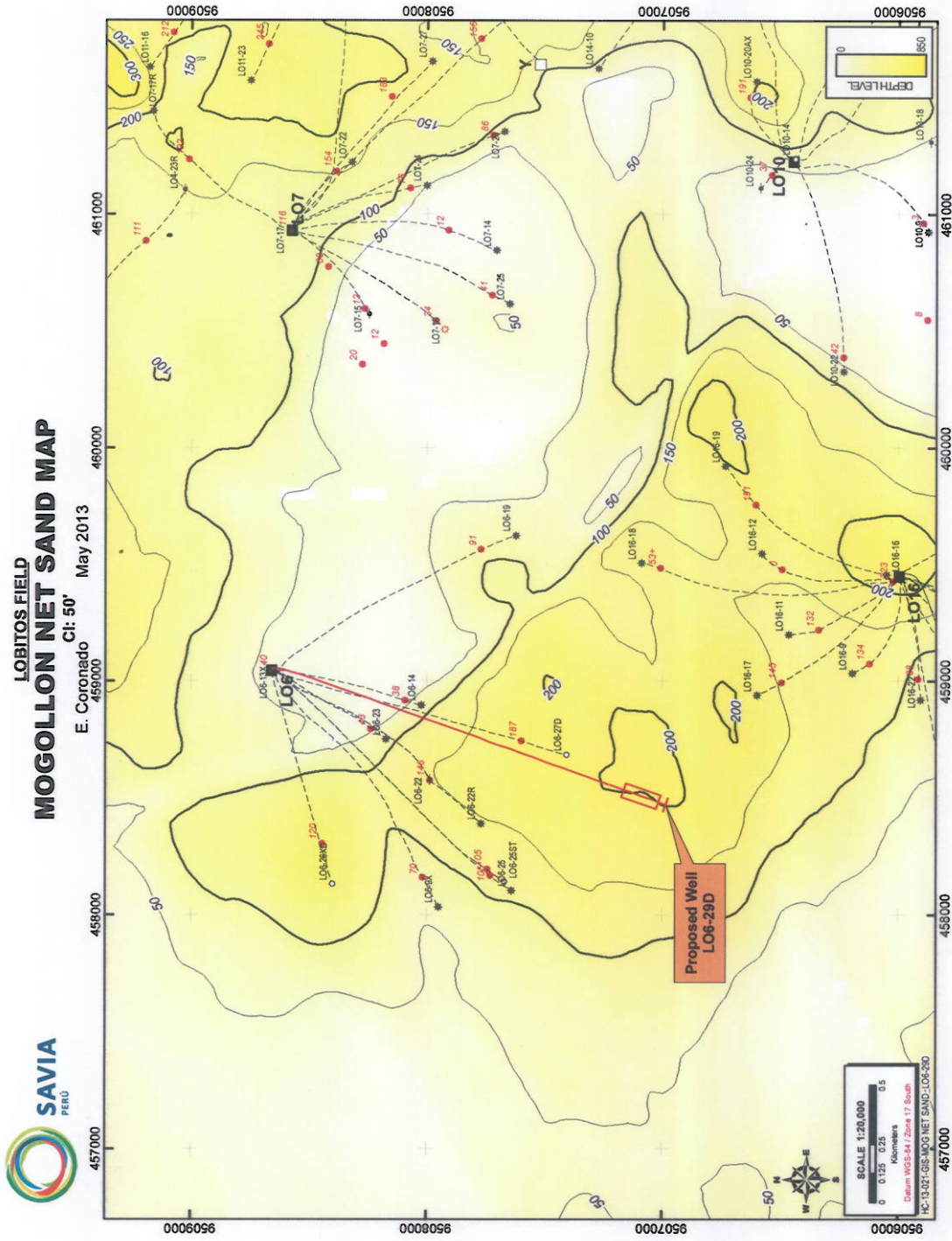


Fig. 6: Net Sand Thickness Mogollon formation Map for Proposed well LO6-29D

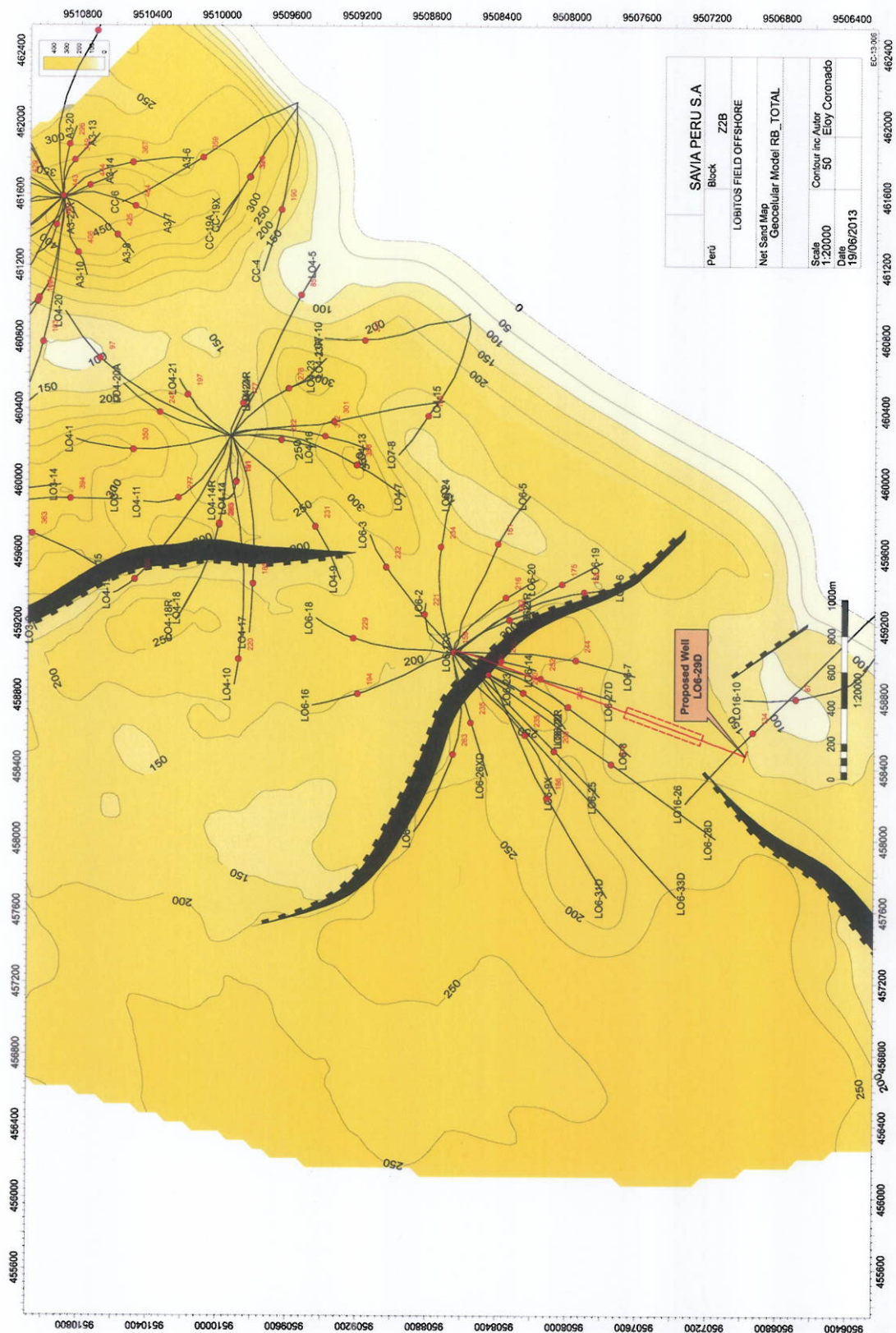


Fig. 7: Net Sand Thickness Rio Bravo formation Map for Proposed well LO6-29D

NW-SE STRATIGRAPHIC SECTION B-B' FOR PROPOSED WELL LO6-29D

Graphic Scale

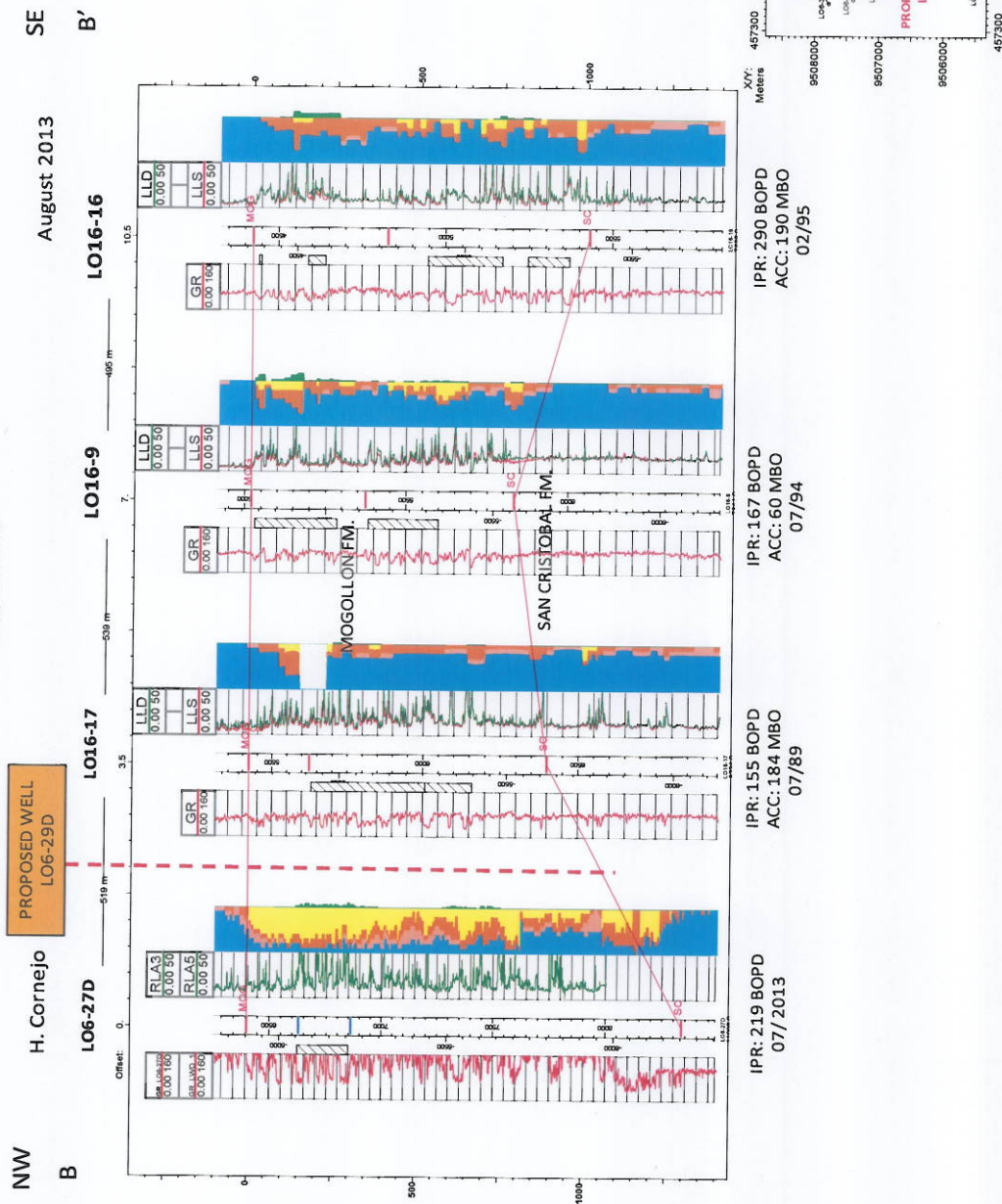


Fig. 8: NW-SE Stratigraphic Correlation of Mogollon, south of LO6 Platform, including LO6-27D, LO16-17D, LO16-9, and LO16-16



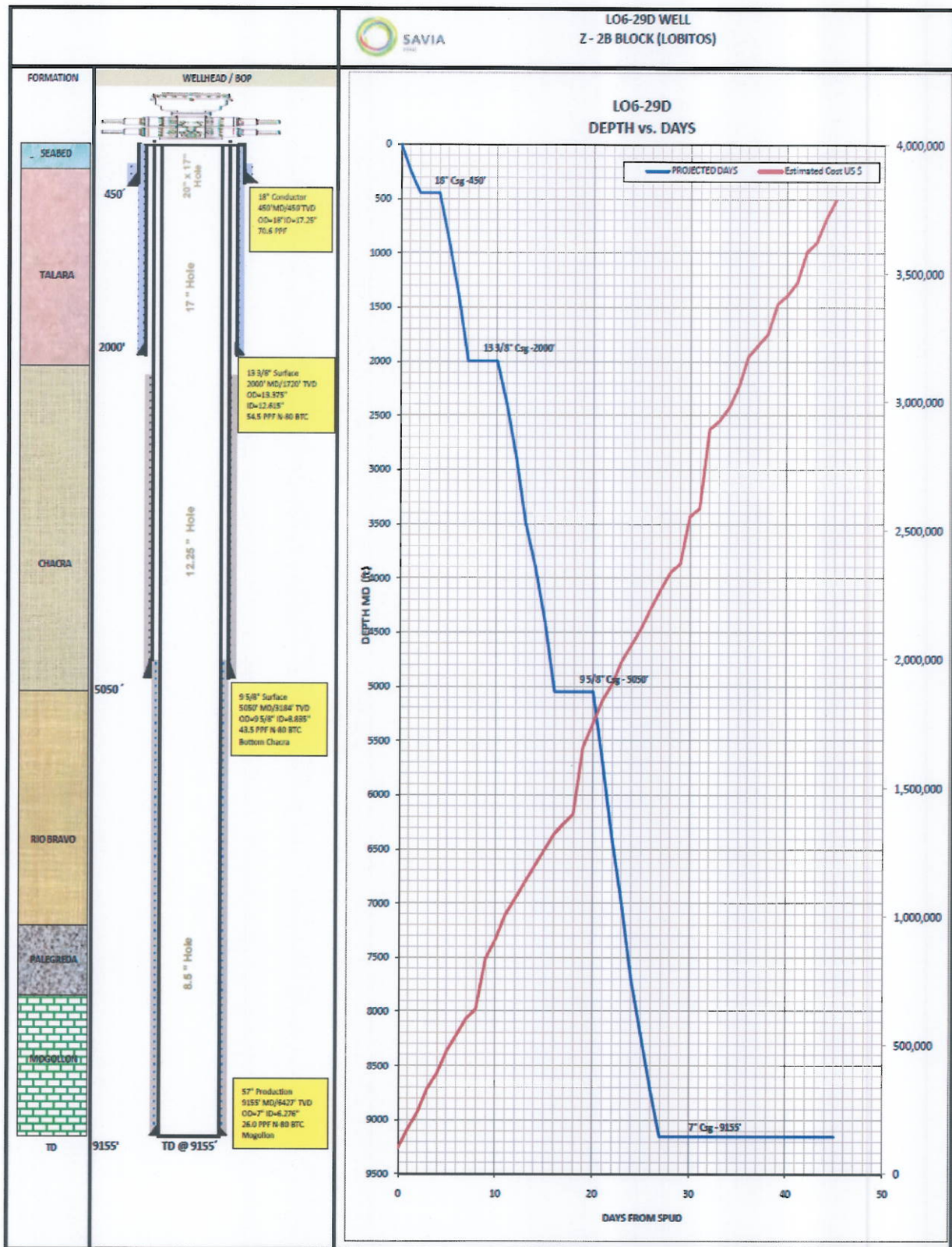


Fig. 10: Drilling Cost Time-Depth Chart of well LO6-29D

Economic Summary (Savia)

LO6_29D_BASE_new

(Nominal values)

P. Zans Aug-2013

Interests & Settings

Net Revenue	Net Expl	Net Dev	Net Oper	Disc. Rate	BT NPV	AT NPV	BT PIR	AT PIR	DPI	AT ME	AT IE
Company (% of Total)	84.00	0.00	100.00	100.00	(%)	(M\$)	(fraction)	(fraction)	(fraction)	(M\$)	(fraction)
Company (% of Contr)	0.00	0.00	100.00	100.00	0.00	11,143.00	7,410.00	2.93	1.95	2.95	-3,800.00
Partner (% of Contr)	0.00	0.00	100.00	100.00	0.00	7,639.00	4,783.00	2.01	1.26	2.26	0.00
Contr	84.00	0.00	100.00	100.00	10.50	7,511.00	4,687.00	1.98	1.23	2.23	-3,800.00
NOC	0.00	0.00	0.00	0.00	12	7,149.00	4,415.00	1.88	1.16	2.16	0
Model	Peru License R Fact (2003)										
Global Params	Savia Peru										
Escalation Date	2013/01	AT ROR (%) 89.02 89.02 89.02 Contr Take (%) 52.58									
Discount Date	2013/01	AT Payoff (yrs) 1.50 1.50 1.50 NOC Take (%) 0.00									
Economic Limit	2023/12	F&D (\$/BOE) 23.35 23.35 23.35 Govt Take (%) 47.42									
		Lifting Costs (\$/BOE) 2.27 2.23 2.12									

Economic Indicators

Disc. Rate	BT NPV	AT NPV	BT PIR	AT PIR	DPI	AT ME	AT IE
(%)	(M\$)	(M\$)	(fraction)	(fraction)	(fraction)	(M\$)	(fraction)
0.00	11,143.00	7,410.00	2.93	1.95	2.95	-3,800.00	1.95
0.00	7,639.00	4,783.00	2.01	1.26	2.26	0.00	0
10.50	7,511.00	4,687.00	1.98	1.23	2.23	-3,800.00	1.23
12	7,149.00	4,415.00	1.88	1.16	2.16	0	0

Cash Flow Breakdown

(M\$)	(\$/BOE)	(M\$) [10.5 %]	(\$/BOE) [10.5 %]	(%)
Net Revenue	15,495.00	95.22	11,808.00	72.56
Less:				
Bonuses & Fees	0.00	0.00	0.00	0.00
Operating Costs	551.00	3.39	369.00	2.27
Tariffs	0.00	0.00	0.00	0.00
Prod & Asset Taxes	0.00	0.00	0.00	0.00
Capital Costs	3,800.00	23.35	3,800.00	23.35
Plus: Other Income/Expense	0.00	0.00	0.00	0.00
Before Tax Cash Flow	11,143.00	68.48	7,639.00	46.94
Less Income Tax	3,733.00	22.94	2,856.00	17.55
After Tax Cash Flow	7,410.00	45.54	4,783.00	29.39

Reserves and Investments

(M\$)	(MSTB)	Project	Contr	Comp Wt	Company
Oil	(MSTB)	194.00	163.00	194.00	163.00
Gas	(MMSCF)	0.00	0.00	0.00	0.00
NGL	(MSTB)	0.00	0.00	0.00	0.00
Tax	(MSTB)	0.00	0.00	0.00	0.00
Total	(MBOE)	194.00	163.00	194.00	163.00
Acquisition	(M\$)	0.00	0.00	0.00	0.00
Exploration	(M\$)	0.00	0.00	0.00	0.00
Development	(M\$)	3,800.00	3,800.00	0.00	3,800.00
Abandonment	(M\$)	0.00	0.00	0.00	0.00
Total	(M\$)	3,800.00	3,800.00	0.00	3,800.00

Comp Cash Flow

All values are Company (Comp) Share unless specified otherwise.

Date	Sales Volume	Price	Net Revenue	Sales Volume	Net Price	Net Revenue	(-) Operating Costs	(-) Capital Costs	Amortization	Taxable Income	(-) Before Tax Cash Flow	(-) Income Taxes	(-) After Tax Cash Flow	(-) After Tax Cash Flow	(-) After Tax Cash Flow	(-) After Tax Cash Flow
	Oil	Oil	Oil	Oil	[BOE]	[BOE]	M\$	M\$	M\$	M\$	M\$	M\$	M\$	M\$	M\$	M\$
2013(12)	24.00	95.00	1,952.00	24.00	23.75	1952	31.00	3,800.00	480	1441	1879	453	2382	2382	2382	2382
2014(12)	53.00	95.00	4,195.00	53	96.00	4195	84.00	—	1031	3080	4111	1032	3079	2787	2787	2787
2015(12)	29.00	90.20	2,176.00	29	90.2	2176	63	—	563	1550	2113	519	1594	1306	1306	1306
2016(12)	20.00	92.01	1,540.00	20	92.01	1540	55	—	391	1095	1485	367	1119	829	829	829
2017(12)	15.00	93.85	1,199.00	15	93.85	1199	50	—	298	850	1146	285	863	579	579	579
2018(12)	12.00	95.72	991.00	12	95.72	991	46	—	242	701	943	235	708	430	430	430
2019(12)	10.00	97.64	850.00	10	97.64	850	46	—	203	600	803	201	602	331	331	331
2020(12)	9.00	99.59	750.00	9	99.59	750	45	—	178	529	705	177	528	262	262	262
2021(12)	8.00	101.58	670.00	8	101.58	670	44	—	154	473	627	158	468	211	211	211
2022(12)	7.00	103.61	610.00	7	103.61	610	43	—	138	430	567	144	423	172	172	172
2023(12)	6.00	105.69	562.00	6	105.69	562	42	—	124	395	520	132	387	143	143	143
Total	194.00	97.43	15,495.00	194.00	—	15,495.00	551.00	3,800.00	3800	11143	11143	3733	7410	4687	4687	4687

Peep Version 2009.1

CONSIDERATIONS

Net Revenue Interest %	84%
Discount Rate %	10.5%
Tax	30%
Variable Cost, US\$/BL	0.91
Fixed MU\$/Year	36.6
Cost MUSD\$	3,800
Oil Price according Portfolio MTP 2012: 95 US\$/BL for 2013 & 2014	
phased 2% yearly from 2015 to 2023.	

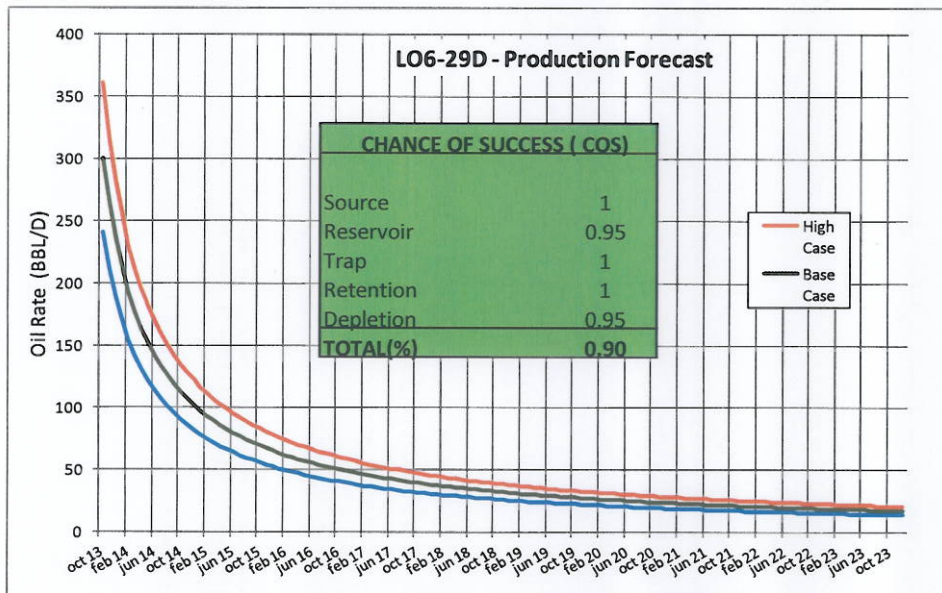


Table A: Economic summary and Oil rate forecast for well LO6-29D


 SAVIA <small>PERU S.A.</small>		SAVIA PERU S.A.		AFE No. 2214237	
CIA	ACD	BUDGET ITEM			
FU		WELL DESCRIPTION		OFFICIAL NUMBER	MM / DD / AA
		LO6-29D		SAV-Z2B-24-LO6-29D	
TOTAL ESTIMATED DAYS					
FU		TYPE OF WELL	MOV / COND	DRILLING	COMPLETION
		DEVELOPMENT	3	27	16
					EST FOOTAGE
					9155
					AREA
					LOBITOS
FU		GEN	CC	AREA	
WELL COST BREAKDOWN					
SUB	DESCRIPTION		QUANTITY	UNIT COST	SUB-TOTAL
TOTAL US\$					
OUTSIDE SERVICES:					
201	DRILLING RIG		21	27	1,026,000
203	DIRECTIONAL DRILLING				261,600
204	MUD LOGGING		34	1500	51,000
205	MUD ENGINEERING		34	1200	51,600
206	CEMENT. CONDUCT.			900	15,960
206	CEMENT. SURF. CSG.				34,940
206	CEMENT. INTERM. CSG.				28,820
206	CEMENT. OTHERS				28,930
206	CEMENT. CASING 7"				36,300
206	CEMENT. CASING 5 1/2"				0
207	ELECTRIC LOGGING				190,000
208	PERFORATING				60,000
209	STIMULATION				60,000
211	TUBULAR INSPECTION				7,960
213	DIVING				24,000
212	HYDRAULIC TONGS				70,560
219	WELL TESTING				16,000
221	TOOL SERVICES				70,000
224	METALIC STRUCTURES CUT & WELD				10,000
226	CRANE MAINTENANCE				15,000
228	MACHINE WORK				7,500
229	BARGE OPERATIONS				0
231	BOAT OPERATIONS				0
237	WATER. & EQUIP. TRANSP.				22,500
240	WATER FURNISHMENT				15,000
244	TOOL RENTAL				51,080
248	CATERING				61,200
249	CONSULTING				60,000
252	ENVIRONMENTAL PROTECTION				20,280
TOTAL OUTSIDE SERVICES:					2,294,220
MATERIALS & SUPPLIES:					
301	FITTING SCREWED				200
303	VALVES AND PARTS				1,500
304	API FLANGES & RING GASKET				1,000
306	HARDWARE				2,000
325	BITS				129,700
326	TOOLS FOR DRILLING				44,660
327	COMPLETIONS				66,000
328	FLOATING EQUIPMENT - CMT.				23,080
329	PRODUCTION FACILITIES EQUIP.				2,000
335	OTHERS TUBULAR CONNECTIONS				7,500
336	STRUCTURAL CONST. MAT.				2,200
340	WELDING MATERIAL				500
341	MAT. CMT. CONDUCT.				18,000
341	MAT. CMT. SURF. CSG.				36,000
341	MAT. CMT. INTERM. CSG.				24,180
341	MAT. CMT. CASING 7"				35,100
341	MAT. CMT. CASING 5 1/2"				0
341	MAT. CMT. OTHERS				11,200
342	STIMULATION MATERIAL				90,000
343	DRILLING / COMPLETION FLUIDS				207,280
344	CONDUCTORS		450	37.52	16,880
344	SURFACE CSG.		2000	35.11	70,220
344	INTERMED. CSG. (9 5/8")		5050	28.42	143,520
344	7" CASING		9155	18.33	167,810
344	5 1/2" CASING		0	11.24	0
344	2 7/8" TUBING		8700	4.68	40,720
346	DIESEL-FUEL			4.60	349,420
347	OIL & GRASES				2,150
TOTAL MATERIALS & SUPPLIES:					1,490,820
TOTAL PROJECT COST US \$					3,785,040
APPROVAL BY: _____ DATE: _____					

Table B: AFE for proposed well LO6-29D