

Impact of Closed Loop System on Drilling Economics in SJB, NM

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Exhibit 37

IMAN

Why choose closed loop?

- Farmington C Com #1E – Shallow water table near river prohibited below grade lined pit
- Farmington C Com #1Z – Drilled on same pad as #1E well
- Heights Com #1Z – Location overlays multiple pipelines

High Incremental Costs

- Adds > \$200,000 to the cost of drilling a well after subtraction of traditional reserve pit costs
- Increases drilling budget by 25%
- Examples were in close proximity to services and disposal locations, best case situation
- Has no environmental benefit

A fit for purpose tool

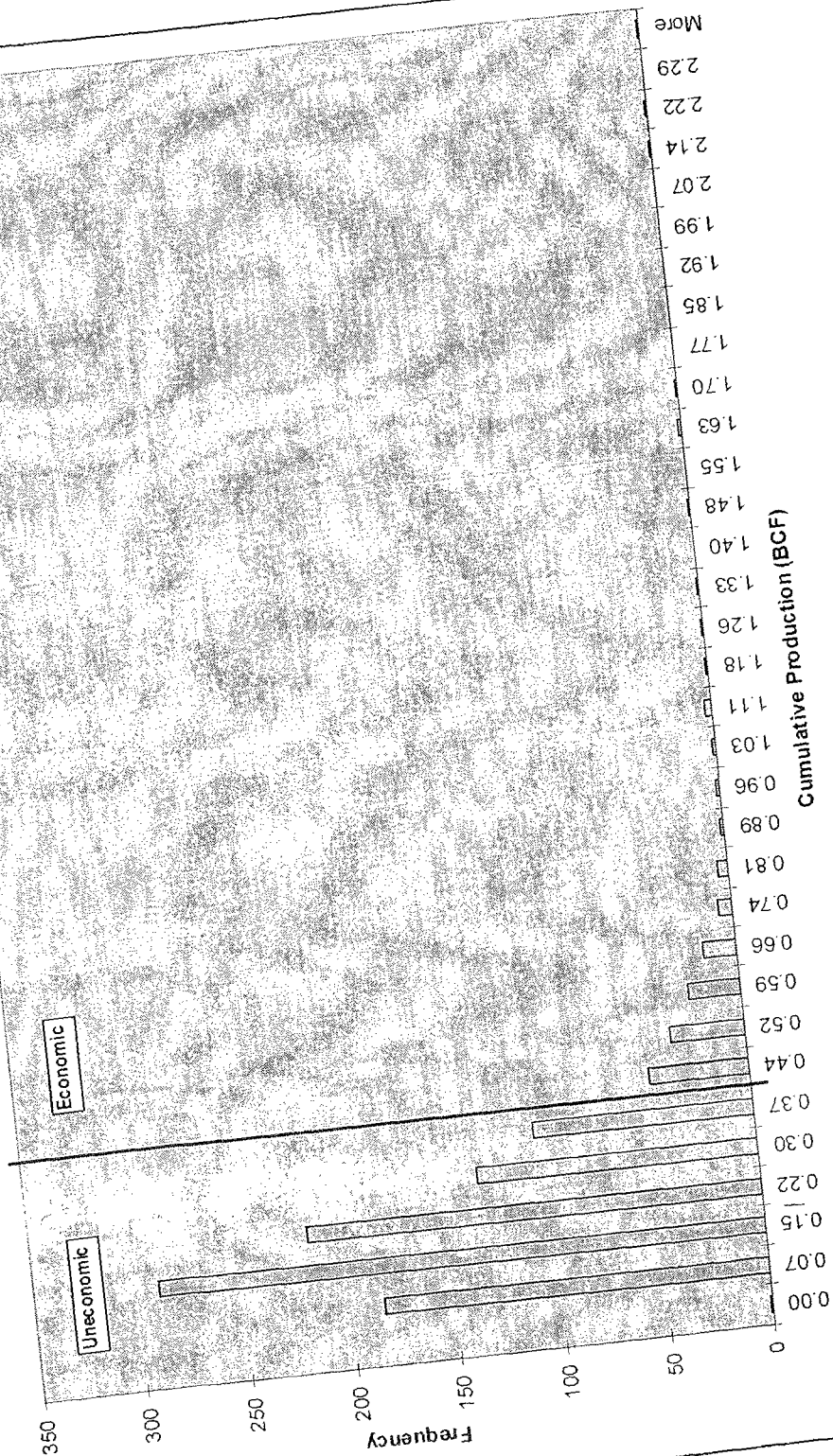
- Closed loop systems are feasible only in situations with extremely favorable economics where reserve pits are constrained due to existing natural or man made physical features
- The three additional 80 acre wells that would normally be drilled to finish off the down spacing will not be feasible with the incremental costs of the closed loop system
- Three wells described above are the exceptions, not the rule for typical SJB well economics

Typical Basin Dakota Economics

- Expect 0.5 BCF cumulative recovery
- Normal drilling and completion costs yield 16.9% PV with \$5.50/mmbtu constant gas
- Addition of closed loop costs lower PV to 10.6%
- Analogous economics in other San Juan Basin Reservoirs

Economic Impact if Closed Loop Mandated

Basin Dakota 2000-2005 Drilled Wells



Impact on Merriam Oil & Gas

- MOG – 20 infill Basin Dakota wells on 2008 drilling program
- Recommend reducing and possibly eliminating NM drilling program for higher PV opportunities in CO, UT, WY
- If pit rule expands into other Rockies states, recommend acquisition and development of leases in OK, TX, LA, AR

Expect negative impact

- New rule will not eliminate **ALL** wells, because some do have the reserves to pay the incremental costs associated with closed loop drilling
- **MOST** of the remaining wells to be drilled will not generate acceptable returns for this high risk business.
- Expect significant flight of capital from NM

Appendices

Incremental Costs C Com #1E

Farmington C Com #1E

Measured Depth
Days

6365
18

Item	Cost/well	Cost/day	Cost/ft	Notes
Closed Loop drilling system and services	\$63,900.00	\$3,550.00	\$10.04	Equipment rental and personnel + expendibles
Welder and steel	\$830.08	\$46.12	\$0.13	Rig modifications for installation of closed loop system.
Generator to power closed loop equipment plus fuel	\$8,338.14	\$463.23	\$1.31	1375 kW generator required, cannot run off of rig generator
Dewatering Chemicals (Acid & Polymer)	\$7,956.25	\$442.01	\$1.25	Needed to cut drilled solids buildup
Cuttings Drying Area Const.	\$5,028.00	\$279.33	\$0.79	Bermed area (60' X 40') w/ pit liner
Dry Cuttings handling on location	\$23,445.18	\$1,302.51	\$3.68	Catch tank to drying area. Rental on backhoe plus fuel. Excavator to stir cuttings and promote drying
Reserve Pit Construction and Closure	-\$13,500.00	-\$750.00	-\$2.12	Subtract "normal" pit costs
Additional Mud Costs	\$4,659.00	\$258.83	\$0.73	Mud additives lost to closed loop solids removal equipment
Slurried Cuttings transfer	\$2,916.00	\$162.00	\$0.46	Fast ROP limits mud retention time in pits and reduces shale shaker efficiency
Water Hauling & Disposal	\$2,482.53	\$137.92	\$0.39	Pull water from drying area
Open top flowback tank for choke line	\$2,700.00	\$150.00	\$0.42	Choke line usually routed to reserve pit
Piping and valves for rerouting returns during cementing	\$5,792.00	\$321.78	\$0.91	Returns usually routed to reserve pit
Trucking of drilled solids	\$21,482.36	\$1,193.46	\$3.38	250 yd ³ per well
Testing and disposal of drill cuttings at landfarm	\$4,750.00	\$263.89	\$0.75	250 yd ³ per well
Trucking of Used Drilling Mud	\$1,762.00	\$0.28	\$0.28	
Frac tanks for mud storage	\$2,160.00	\$120.00	\$0.34	3 frac tanks
Cleaning of Frac tanks	\$1,500.00	\$83.33	\$0.24	3 Frac tanks
Disposal of used drilling mud				400 bbl. Not re-usable due to drilled solids content and "souring". Cost to re-use mud exceeds disposal costs.
Reclamation of drying area	\$8,000.00	\$444.44	\$1.26	
Transfer pump	\$2,282.00	\$126.78	\$0.36	
Additional drilling time	\$2,232.00	\$124.00	\$0.35	Needed to transfer runoff from rig ditches, move slurries and mud around location.
				0.5 days extra rig up time, 1 day reduced ROP due to drilled solids in system increasing mud weight, 0.5 days due to maintenance and repair
			\$10.31	on closed loop system equipment.

\$65,624.00

\$224,339.54

Total Incremental Cost Before Tax

\$240,043.31

Total Incremental Cost After Tax (7%)

Incremental Costs C Com #1Z

Farmington C Com #1Z

Measured Depth
Days

6950
16

Item	Cost/ Well	Cost/ day	Cost/ft	Notes
Closed Loop drilling system and services	\$56,800.00	\$3,550.00	\$8.17	Equipment rental and personnel + expendables
Welder and steel	\$830.08	\$51.88	\$0.12	Rig modifications for installation of closed loop system.
Generator to power closed loop equipment plus fuel	\$7,411.68	\$463.23	\$1.07	375 kW generator required. cannot run off of rig generator
Dewatering Chemicals (Acid & Polymer)	\$9,687.50	\$542.97	\$1.25	Needed to cut drilled solids buildup
Cuttings Drying Area Const.	\$5,028.00	\$314.25	\$0.72	Bermed area (60' X 40') w/ pit liner
Dry Cuttings handling on location	\$20,840.16	\$1,302.51	\$3.00	Catch tank to drying area. Rental on backhoe plus fuel. Excavator to stir cuttings and promote drying
Reserve Pit Construction and Closure	\$13,500.00	-\$843.75	-\$1.94	Subtract "normal" pit costs
Additional Mud Costs	\$7,140.00	\$446.25	\$1.03	Mud additives lost to closed loop solids removal equipment
Slurried Cuttings transfer				Fast ROP in shallow portion of hole limits mud retention time in pits
Water Hauling & Disposal	\$2,560.00	\$160.00	\$0.37	and reduces shale shaker efficiency
Open top flowback tank for choke line	\$5,128.40	\$320.53	\$0.74	Pull water from drying area
Piping and valves for rerouting returns during cementing	\$2,400.00	\$150.00	\$0.35	Choke line usually routed to reserve pit
Trucking of drilled solids	\$1,232.00	\$77.00	\$0.18	Returns usually routed to reserve pit
Testing and disposal of drill cuttings at land farm	\$21,482.36	\$1,342.65	\$3.09	250 yd ³ per well
Frac tanks for mud storage	\$4,750.00	\$296.88	\$0.68	250 yd ³ per well
Trucking of Used Drilling Mud	\$1,920.00	\$120.00	\$0.28	3 frac tanks
Cleaning of Frac tanks	\$1,762.00	\$110.13	\$0.25	
Disposal of used drilling mud	\$1,500.00	\$93.75	\$0.22	3 Frac tanks
Reclamation of drying area	\$8,000.00	\$500.00	\$1.15	400 bbl. Not re-usable due to drilled solids content and "souring". Cost to re-use mud exceeds disposal costs.
Transfer pump	\$2,282.00	\$142.63	\$0.33	
Additional drilling time	\$1,984.00	\$124.00	\$0.29	Needed to transfer runoff from rig ditches, move slurries and mud around location.
				0.5 days extra rig up time, 1 day reduced ROP due to drilled solids in system increasing mud weight; 0.5 days due to maintenance and repair on closed loop system equipment.
	\$61,200.00	\$3,825.00	\$8.81	

Total Incremental Cost Before Tax \$209,438.18

Total Incremental Cost After Tax (7%) \$224,098.85

37-11

37-12

DECLINE DATA		Oil	Gas
Initial Rate	1.0 bopd	230 mcf/d	
Initial Decline Rate	50.0% per yr	35.0% per yr	
Final Decline Rate	10.0% per yr	10.0% per yr	
Dogleg at	2.0 years	2.0 years	
Economic Limit	0.0 bopd	11 mcf/d	
Gas Res	1,692 bo	499,812 mcf	
Net Res	1,346 bo	398,850 mcf	

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By: Steven S. Dunn &
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GAS PRODUCTION										PRICES				REVENUE				EXPENSES				NET INC		INVEST		BEFORE TAX CASH FLOW					
Begin Rate		Gross Prod		Net Prod		Begin Rate	Gross Prod	Net Prod	Oil Price \$/Bbl	Gas Price \$/mmbtu	Oil Rev M\$	Gas Rev M\$	Total Rev M\$	Prod Taxes M\$	Operating Cost M\$	Net Op Income M\$	Net Invest M\$	Cash Flow M\$	Cum Cash M\$	Disc @ 16% M\$	Cum C Flow M\$	Taxable Income M\$									
bopd	stb	stb	stb	stb	stb																		stb	stb	stb	stb	stb	stb	stb	stb	stb
Year																															
1 2005	1.0	287		230	70,833	56,665		70.00	5.50	16.1	327.2	343.3		31.1	18.0	294	800.0	(800)	(800)	(800)		(429)									
2 2006	0.6	174		162	49,915	39,932		70.00	5.50	9.8	230.6	240.4		21.8	18.0	201		234	(506)	254	(346)	128									
3 2007	0.4	128		114	39,672	31,717		70.00	5.50	7.2	163.3	190.4		17.3	18.0	155		201	(305)	149	(397)	100									
4 2008	0.3	116		103	35,896	28,717		70.00	5.50	6.5	165.8	172.3		15.6	18.0	139		155	(150)	99	(298)	94									
5 2009	0.3	105		94	32,480	25,984		70.00	5.50	5.9	150.1	155.9		14.1	18.0	124		139	(11)	77	(221)	87									
6 2010	0.3	95		85	29,390	23,572		70.00	5.50	5.3	135.8	141.1		12.8	18.0	110		124	112	59	(162)	69									
7 2011	0.2	86		77	26,593	21,274		70.00	5.50	4.8	122.9	127.7		11.6	18.0	98		110	223	45	(117)	59									
8 2012	0.2	78		69	24,062	19,250		70.00	5.50	4.3	111.2	115.5		10.5	18.0	87		98	321	35	(82)	57									
9 2013	0.2	70		63	21,772	17,418		70.00	5.50	3.9	100.6	104.5		9.5	18.0	77		87	408	27	(56)	56									
10 2014	0.2	63		57	19,700	15,760		70.00	5.50	3.6	91.0	94.6		8.6	18.0	68		77	485	20	(36)	49									
11 2015	0.2	57		51	17,825	14,261		70.00	5.50	3.2	82.4	85.6		7.8	18.0	60		68	553	15	(20)	37									
12 2016	0.1	52		46	16,129	12,903		70.00	5.50	2.9	74.5	77.4		7.0	18.0	52		60	613	12	(8)	0									
13 2017	0.1	47		42	14,594	11,676		70.00	5.50	2.6	67.4	70.1		6.4	18.0	46		52	665	9	0	32									
14 2018	0.1	43		38	13,206	10,564		70.00	5.50	2.4	61.0	63.4		5.7	18.0	40		46	711	7	7	32									
15 2019	0.1	38		34	11,949	9,559		70.00	5.50	2.2	55.2	57.4		5.2	18.0	34		40	750	5	12	27									
16 2020	0.1	35		31	10,812	8,649		70.00	5.50	2.0	50.0	51.9		4.7	18.0	29		34	785	4	16	23									
17 2021	0.1	32		28	9,783	7,826		70.00	5.50	1.8	45.2	47.0		4.3	18.0	25		29	814	3	18	19									
18 2022	0.1	29		25	8,852	7,082		70.00	5.50	1.6	40.9	42.5		3.9	18.0	21		25	839	2	20	15									
19 2023	0.1	26		23	8,010	6,408		70.00	5.50	1.4	37.0	38.4		3.5	18.0	17		21	859	1	22	12									
20 2024	0.1	23		21	7,247	5,798		70.00	5.50	1.3	33.5	34.8		3.2	18.0	14		17	876	1	23	9									
21 2025	0.1	21		19	6,586	5,246		70.00	5.50	1.2	30.3	31.5		2.9	18.0	11		14	890	1	23	7									
22 2026	0.1	19		17	5,934	4,747		70.00	5.50	1.1	27.4	28.5		2.6	18.0	8		11	900	0	24	4									
23 2027	0.0	17		15	5,368	4,295		70.00	5.50	1.0	24.8	25.8		2.3	18.0	5		8	908	0	24	2									
24 2028	0.0	16		13	4,888	3,886		70.00	5.50	0.9	22.4	23.3		2.1	18.0	3		5	914	0	24	0									
25 2029	0.0	14		11	4,396	3,517		70.00	5.50	0.8	20.3	21.1		1.9	18.0	1		3	917	0	25	0									
26 2030	0.0	13		10	3,977	3,182		70.00	5.50	0.7	18.4	19.1		1.7	18.0	(0.6)		1	918	0	25	(1)									
27 2031																		(1)	917	(0)	25										
28 2032																															
29 2033																															
30 2034																															
E																															
TOTAL \$		1,682	1,346		499,812	399,850		0	5	94	2,309	2,403		218	488	1,717	800	917		25		500									

