



## **Mack Energy**

**Fracture Recommendation**

**Cockburn A State #5**

**Abo Single Stage**

**32-T17S-R33E Corbin Abo**

**Lea County, NM**

**API 30-025-25286**

**8/8/2012**

**Prepared for: Lee Livingston**

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**575-748-1288**

Oil Conservation Commission

Case No. 27

Exhibit No. 27

## CONTACTS

Thank you for the opportunity to provide this proposal for your consideration. If you have any questions or require further information, please feel free to contact us any time. Elite Services appreciates the opportunity to provide this information and we look forward to being of service to you in the future.

Contact Information				
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The estimated cost is for materials and/or services outlined within. The price in this analysis are based on Elite Well Serices current prices and are effective for 30 days from the date of this analysis. Prices will be reviewed if the work is awarded after 30 days of this written analysis. The projected equipment, personnel, and material needs are estimates based on the information presently available to us. At the time the work is actually performed, conditions may require an increse or decrease in the equipment, personnel, and/or material required. Charges will be based upon prices in effect at the time the work is preformed and the amount of equipment, personnal, and/or material actually used. Taxes, if any, are not included but will be added to the actual invoice.

Notes:

## Summary

### Summary (each stage)

Stage #	Treat Via	Max Anticipated Rate (bbls/min)	Estimated STP (psi)	Total Clean Volumes (bbls)	Total Proppant (lbs)	Pumping Time (hr:min:ss)
1	Casing	80	4,748	3,418	246,700	0:42:53

## Treatment Totals

Treatment Totals			
Fluid Type	Fluid Volume	Proppant Type	Proppant Volume
25# Borate	2,948 bbls	20/40 White	215,500 lbs
25# Linear Gel	200 bbls	20/40 SB-Excell	31,200 lbs
Fresh Water	4 bbls		
Total Pump Time	0:42:53 (hr:min:ss)	Total Proppant	246,700 lbs

Reservoir Data			
Pump Via	Casing	Formation	Abo
Frac Gradient (avg)	0.70 psi/ft	BHFP avg (psi)	6,145
Surface Temp (F)	75 F		
Reservoir Temp (F)	136 F		
Packer Depth	N/A		

## Well Data

Casing				
TopMD	BottomMD	OD	Weight/Grd	ID
0	9000	5 1/2	17/N-80	4.892

Perfs						
Stage	Top MD	Bottom MD	Top TVD	Bottom TVD	Hole Dia.	Total
1	8,644	8,914	8,644	8,914	0.42	82

## Fluid Specifications

### 25# Borate

**123,800 gal**

Additives per 1000 Gallons:

Plex Gel 907-LE	6.25 (gal/mgal)	773.8 gal
Plexbor 101	1.00 (gal/mgal)	123.8 gal
Claymax	1.00 (gal/mgal)	123.8 gal
Plexbreak 150	0.50 (gal/mgal)	61.9 gal
Plexsurf 240 E	1.00 (gal/mgal)	123.8 gal
Plexgel Breaker 10L	1.00 (gal/mgal)	123.8 gal
Ammonium Persulfate	1.00 (lb/mgal)	123.8 lb
Plexset 730	5.00 (gal/mgal)	70.0 gal
Biocide-AMA 398	0.15 (lb/mgal)	18.6 lb

### 25# Linear Gel

**8,381 gal**

Additives per 1000 Gallons:

Plex Gel 907-LE	6.25 (gal/mgal)	52.4 gal
Claymax	1.00 (gal/mgal)	8.4 gal
Plexbreak 150	0.50 (gal/mgal)	4.2 gal
Plexsurf 240 E	1.00 (gal/mgal)	8.4 gal
Ammonium Persulfate	0.50 (lb/mgal)	4.2 lb
Biocide-AMA 398	0.15 (lb/mgal)	1.3 lb

### Fresh Water

**165 gal**

Additives per 1000 Gallons:

Plexsurf 240 E	1.00 (gal/mgal)	0.2 gal
Biocide-AMA 398	0.15 (lb/mgal)	0.0 lb

**Pump Schedule**

**Stage 1**

Treatment Schedule											
Stg #	Fluid Type	Description	Clean Vol (bbls)	Clean Vol (gals)	Slurry Rate (bpm)	Proppant	Cum Prop (lbs)	Conc (lb/gal)	Stg Time (mins)	Cum Time (mins)	Time Remaining (mins)
1	Fresh Water	Scale Inhibitor	3.9	165	20				0:20	0:20	42:68
2	25# Borate	Pre-Pad	35.7	1,500	80				0:45	0:64	42:23
3	25# Borate	Pad	476.2	20,000	80				5:95	6:60	36:28
4	25# Borate	Prop	142.9	6,000	80	20/40 White	1,500	0.25	1:81	8:40	34:47
5	25# Borate	Prop	214.3	9,000	80	20/40 White	6,000	0.50	2:74	11:14	31:74
6	25# Borate	Prop	226.2	9,500	80	20/40 White	15,500	1.00	2:96	14:10	28:78
7	25# Borate	Prop	238.1	10,000	80	20/40 White	30,500	1.50	3:18	17:27	25:60
8	25# Borate	Prop	250.0	10,500	80	20/40 White	51,500	2.00	3:41	20:68	22:19
9	25# Borate	Prop	261.9	11,000	80	20/40 White	79,000	2.50	3:65	24:33	18:55
10	25# Borate	Prop	273.8	11,500	80	20/40 White	113,500	3.00	3:89	28:22	14:66
11	25# Borate	Prop	285.7	12,000	80	20/40 White	155,500	3.50	4:14	32:35	10:52
12	25# Borate	Prop	357.1	15,000	80	20/40 White	215,500	4.00	5:27	37:63	5:25
13	25# Borate	RC Prop	185.7	7,800	80	20/40 SB; Excell	246,700	4.00	2:75	40:38	2:49
14	25# Linear Gel	Flush	199.5	8,381	80				2:49	42:88	0:00

**Pump Schedule**

Stage 1

Blender Schedule											
Stg #	Clean Rate (bpm)	Stage Clean (bbls)	Cum Clean (bbls)	Blender Conc (lb/gal)	Slurry Rate (bpm)	Stg Slurry (bbls)	Cum Slurry (bbls)	Prop Rate (lb/m)	Stg Prop (lbs)	Cum Prop (lbs)	Stg Time (mins)
1	20.0	4	4		20	3.9	3.9			0	0.20
2	80.0	36	40		80	35.7	39.6			0	0.45
3	80.0	476	516		80	476.2	515.8			0	5.95
4	79.1	143	659	0.25	80	144.5	658.7	831	1,500	1,500	1.81
5	78.2	214	873	0.50	80	219.1	873.0	1,643	4,500	6,000	2.74
6	76.5	226	1,099	1.00	80	236.4	1099.2	3,215	9,500	15,500	2.96
7	74.9	238	1,337	1.50	80	254.3	1337.3	4,720	15,000	30,500	3.18
8	73.4	250	1,587	2.00	80	272.7	1587.3	6,162	21,000	51,500	3.41
9	71.9	262	1,849	2.50	80	291.6	1849.2	7,546	27,500	79,000	3.65
10	70.4	274	2,123	3.00	80	311.1	2123.0	8,875	34,500	113,500	3.89
11	69.1	286	2,409	3.50	80	331.1	2408.7	10,152	42,000	155,500	4.14
12	67.7	357	2,766	4.00	80	421.9	2765.8	11,380	60,000	215,500	5.27
13	67.5	186	2,952	4.00	80	220.2	2951.5	11,340	31,200	246,700	2.75
14	80.0	200	3,151		80	199.5	3151.1			246,700	2.49



## Pricing

### Price Estimate (Entire Job)

Code	Category	Description	Quantity	Units	Price	Discount %	Gross	Net price
1000	MILEAGE-HV	Heavy Vehicle mileage	720	mi	\$8.45	75%	\$6,084.00	\$1,521.00
1000	MILEAGE-LT	Light Vehicle mileage	60	mi	\$4.78	73%	\$286.80	\$77.44
1100	SV-FR-5000	Fracturing Services > 5000 HHP	1	Job	\$2,249.52	74%	\$2,249.52	\$584.88
1300	COMP-FRAC	Fracturing - computer monitoring	1	Job	\$4,523.76	74%	\$4,523.76	\$1,176.18
1500	DELV-ONEWY	Standard one way delivery	7,401	ton-mi	\$2.82	74%	\$20,870.82	\$5,426.41
2000	FP-05000PS	FP HHP 0 - 5,000 psi	9,309	HHP	\$16.46	74%	\$153,226.14	\$39,838.80
2300	BLN-080BP	Blender 61-80 bpm	1	2hr	\$12,508.32	74%	\$12,508.32	\$3,252.16
3000	PC-01LB-GL	0.1 to 1.0 pounds per gallon	24,500	GAL	\$0.15	74%	\$3,785.25	\$984.17
3000	PC-04LB-GL	1.1 to 4.0 pounds per gallon	77,800	GAL	\$0.18	74%	\$13,622.78	\$3,541.92
3100	LA-CHEMADD	Chemical additive unit	1	Job	\$1,992.43	74%	\$1,992.43	\$518.03
3100	LA-CONT-MX	Continuous mix liquid gel processing service	1	Job	\$8,627.28	74%	\$8,627.28	\$2,243.09
3300	MANIFOLDTR	Trailer mounted frac manifold, initial hrs	1	HR	\$7,292.40	74%	\$7,292.40	\$1,896.02
3400	SKING-300K	Sand King (less than 300k lb capacity), 1st day	1	DAY	\$2,209.97	74%	\$2,209.97	\$574.59
7200	BIOCID-398	Biocide - AMA 398	21	LB	\$30.65	74%	\$643.65	\$167.35
7200	BREAK-10L	Breaker - Plexgel Breaker 10L	124	GAL	\$138.87	74%	\$17,219.88	\$4,477.17
7200	BREAK-AP	Breaker - Ammonium Persulfate	128	LB	\$11.90	74%	\$1,523.20	\$396.03
7200	CL-PLEX101	Cross Linker - Plexbor 101	124	GAL	\$51.10	74%	\$6,336.40	\$1,647.46
7200	GRNHIB679	Additives - Greenhib 679	165	GAL	\$40.15	74%	\$6,624.75	\$1,722.44
7200	KCL-CLAYMX	KCl Sub - Claymax	132	GAL	\$55.79	74%	\$7,364.28	\$1,914.71
7200	LG-907LE	Liquid Gel - Plexgel 907 LE	826	GAL	\$174.00	74%	\$143,724.00	\$37,368.24
7200	NE-PLEX150	Non Emulsifier - Plexbreak 150	66	GAL	\$84.00	74%	\$5,544.00	\$1,441.44
7200	PLEXSET730	Plexset 730	40	GAL	\$72.88	74%	\$2,915.20	\$757.95
7200	SURF-240E	Surfactant - Plexsurf 240E	132	GAL	\$24.50	74%	\$3,234.00	\$840.84
8000	WHITE2040	White Sand 20/40	2,155	cwt	\$48.75	74%	\$105,056.25	\$27,314.63
8000	2040SUPRLC	Super LC 20/40	31,200	LB	\$1.28	74%	\$39,936.00	\$10,383.36

Total: \$577,401.08  
Discount: \$433,050.81  
Net price: \$144,350.27