GEOMARK

Petroleum Services Division

Produced Gas Analyses Report

Pasus-Dimock-Shields G. PAD1 8-2

Cabot Oil and Gas

November 9, 2011

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43							
45	Street						
46	70508						
47	337.261.4002						
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49							

GEOMARK RESEARCH, LTD.

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45	Drive
46	77095
47	281.856.9333
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GEOMARK

Cabot Oil and Gas

Sample ID	Sample Type	Sampling Date	Sampling Time	Tubing Pressure (psia)
#198.00 1069.00, 000- Water Well-1	Water	10/31/2011	10:30 AM	

Cylinder Number	N2 / Air Conc. (mole %)	CO2 Conc. (mole %)	H2S Conc. (mole %)	C1 Conc. (mole %)
#198.00 1069.00, 000- Water Well-1	20.95	0.01	0.00	77.27

Cylinder Number	C1 Conc. (mole %)	C2 Conc. (mole %)	C3 Conc. (mole %)	iC4 Conc. (mole %)
#198.00 1069.00, 000- Water Well-1	97.76	2.18	0.05	0.00

Note: Insufficient hydocarbon concentration to measure Butane and Pentane Carbon Isotopes

	F	G	H	I	J	K	L
1						GAS COMPOS	
2							
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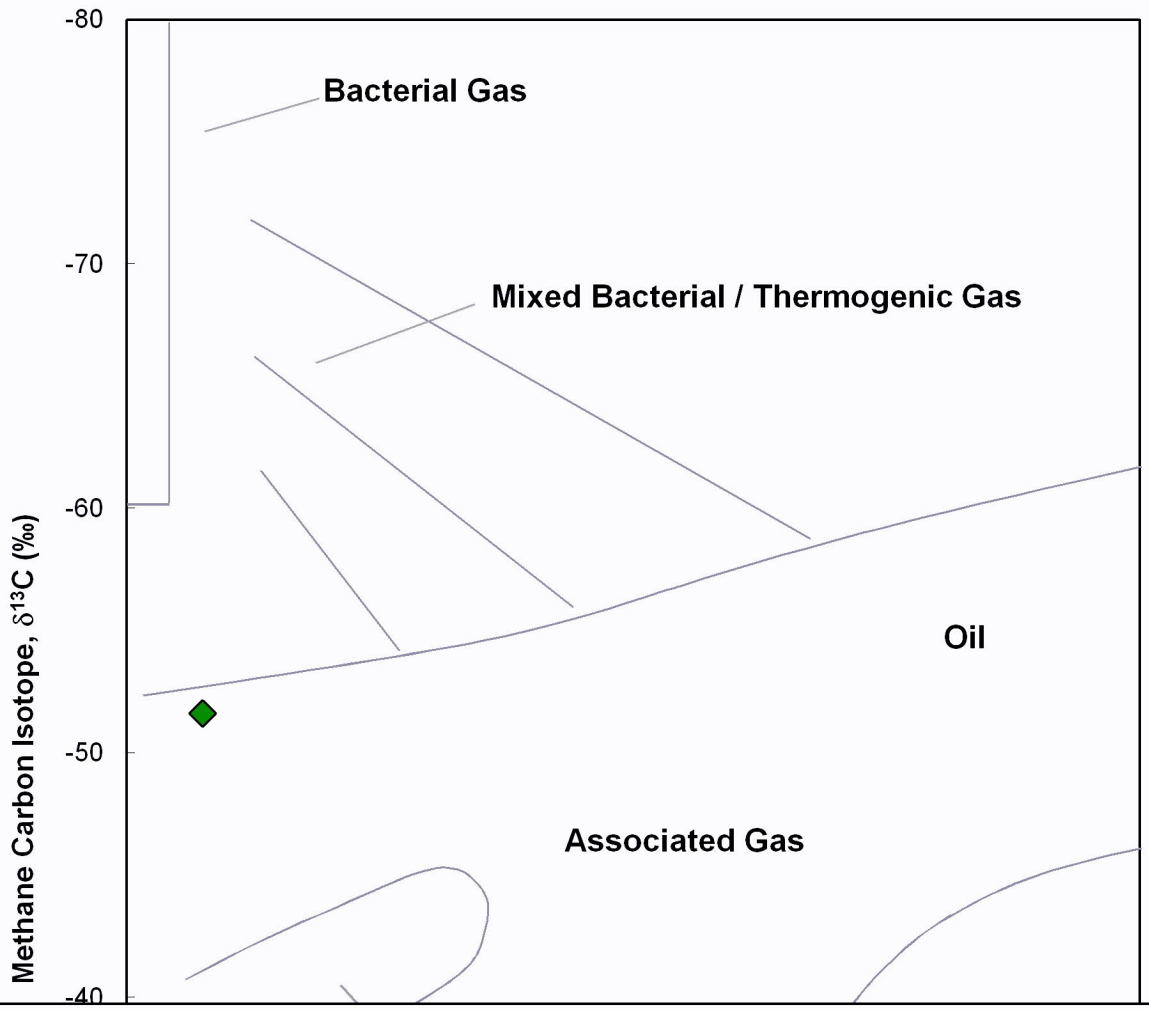
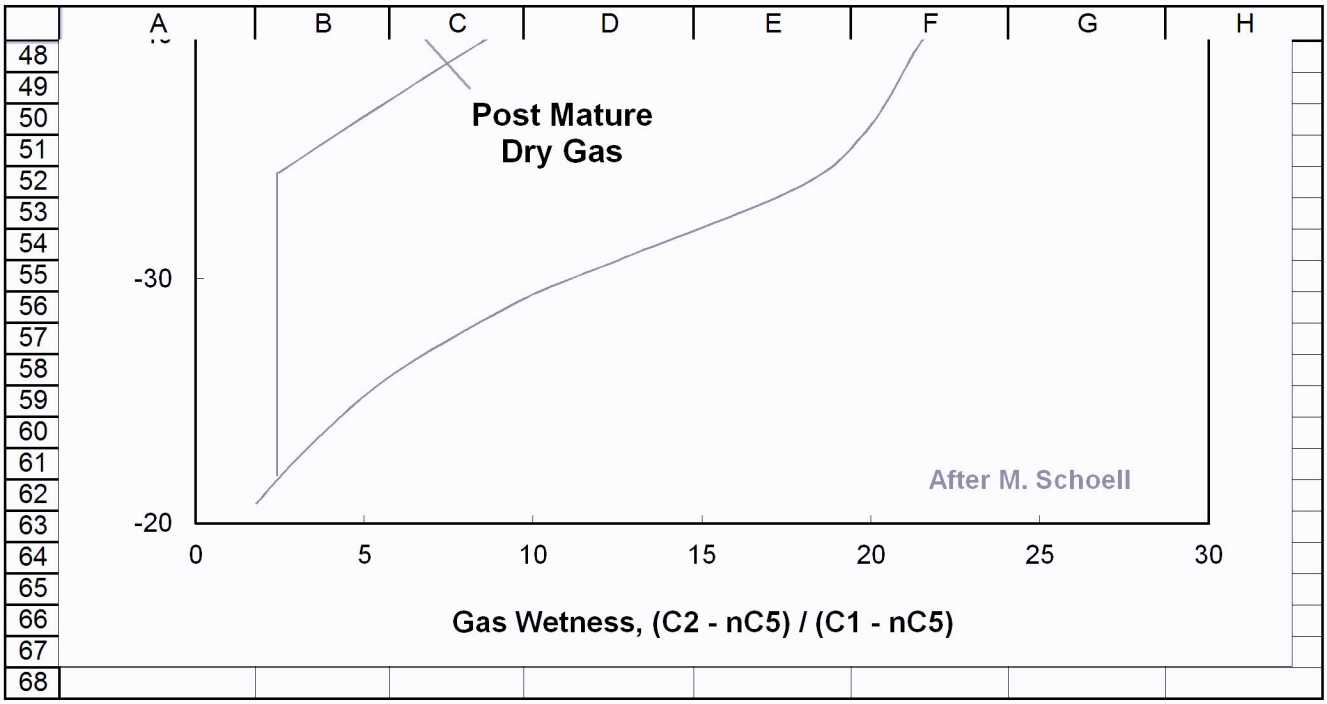
10							
11	**Casing**	**$\delta^{13}C$**	**$\delta^{13}C$**	**$\delta^{13}C$**	**$\delta^{13}C$**	**$\delta^{13}C$**	**$\delta^{13}C$**
12	**Pressure**	**Methane**	**Ethane**	**Propane**	**i-Butane**	**n-Butane**	**i-Pentane**
13	(psia)	(‰)	(‰)	(‰)	(‰)	(‰)	(‰)
14		-51.6	-41.9	-44.1	::	::	::
15							
16							
17							
18	**C2**	**C3**	**iC4**	**nC4**	**iC5**	**nC5**	**C6+**
19	**Conc.**	**Conc.**	**Conc.**	**Conc.**	**Conc.**	**Conc.**	**Conc.**
20	(mole %)	(mole %)	(mole %)	(mole %)	(mole %)	(mole %)	(mole %)
21	1.72	0.04	0.00	0.00	0.00	0.00	0.00
22							
23							
24							
25	**nC4**	**iC5**	**nC5**	**C6+**	**Wetness**	**C1/C2**	**iC4/nC4**
26	**Conc.**	**Conc.**	**Conc.**	**Conc.**	**C2+**	**Ratio**	**Ratio**
27	(mole %)	(mole %)	(mole %)	(mole %)	(mole %)	(mole/mole)	(mole/mole)
28	0.00	0.00	0.00	0.00	2.24	44.9	0.72
29							
30							
31							

	M	N	O	P	Q
1	ITION AND ISOTOPE ANALYSES				
2					
3	GEOMARK RESEARCH, LTD.				
4					
5					
6					
7					**Dimock-**
8					
9					
10					
11	**$\delta^{13}C$**	**$\delta^{13}C$**	**δD**	**Total**	**Hydrocar,**
12	**n-Pentane**	**CO2**	**Methane**	**Gas**	**Gas**
13	(‰)	(‰)	(‰)	(BTU/ft3)	(BTU/ft3)
14	::	-22.2	-261	812	1,028
15					
16					
17					
18	**Specific**				
19	**Gravity**				
20	(Air = 1.0)				
21	0.649				
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					

GeoMark

and Gas




Post Mature
Dry Gas
After M. Schoell
-30
-20
0
5
10
15
20
25
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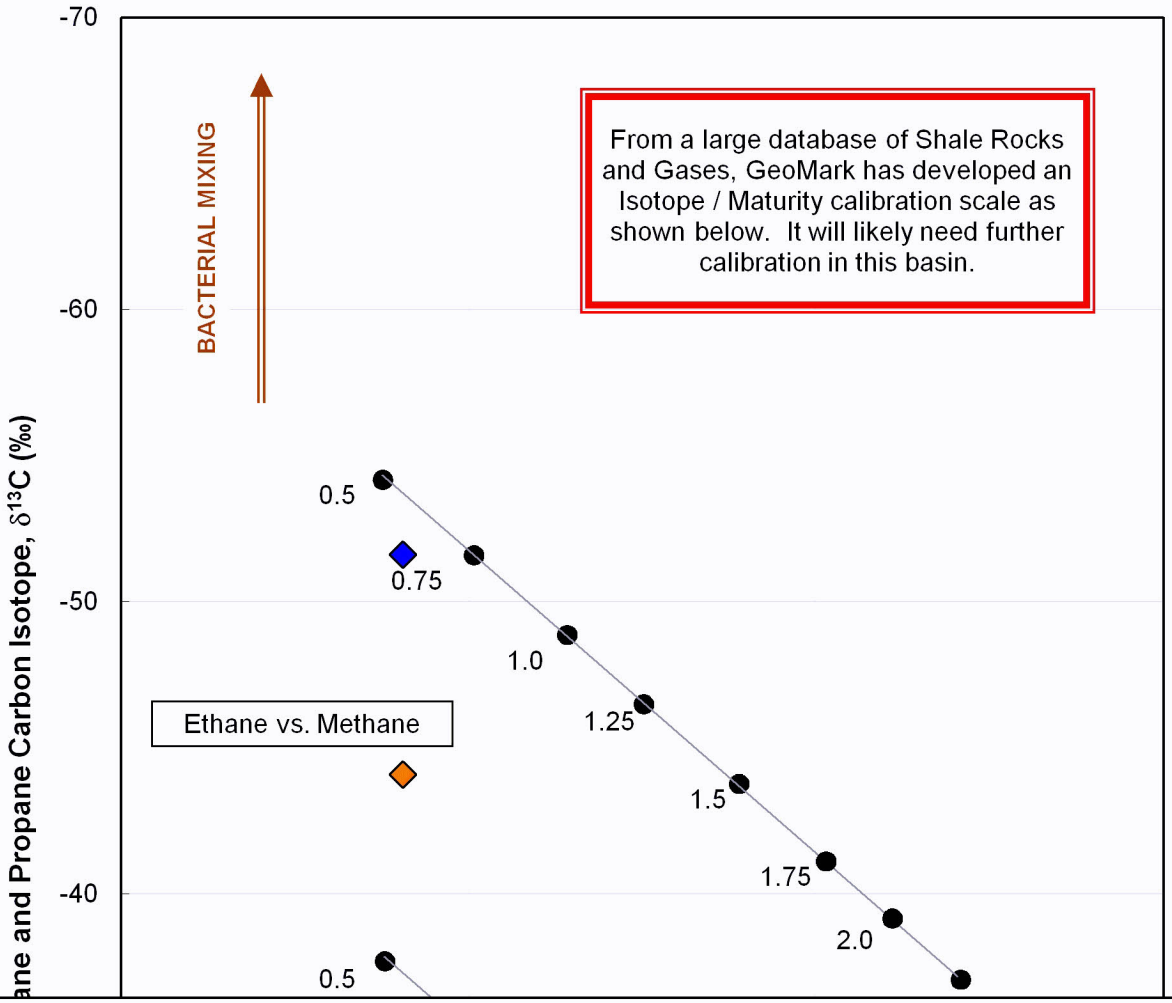
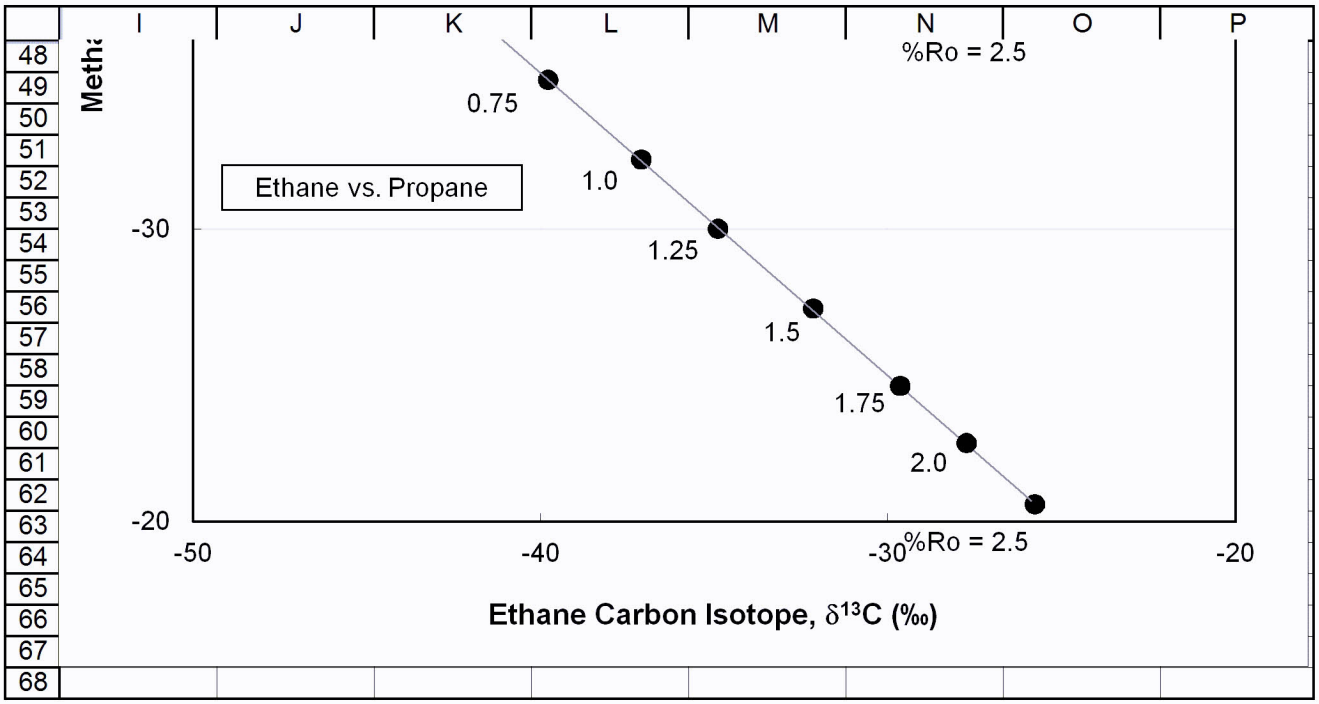
Gas Wetness, (C2 - nC5) / (C1 - nC5)

GAS COMPOSITION AND ISOTOPE ANALYSES

GEOMARK RESEARCH, LTD.

Dimock-




Meth
Ethane vs. Propane
%Ro = 2.5
0.75
1.0
1.25
1.5
1.75
2.0
%Ro = 2.5
-30
-20
-50
-40
-30
-20
Ethane Carbon Isotope, δ13C (‰)

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