Appendix D

Task 1 and 2 Gas Composition and Methane Isotope Laboratory Analytical Reports

Task 1 Laboratory Analytical Results

TASK 1 RESULTS

ISOTECH®

Isotech Laboratories, Inc. 1308 Parkland Court Champaign, IL 61821-1826 Telephone 217/398-3490 FAX 217/398-3493

August 23, 2007

Bryan Grigsby
SS Papadolpulos & Associates
1877 Broadway, Suite 703
Boulder, CO 80303

Dear Bryan:

Enclosed are the analysis reports for the dissolved gas samples recently submitted from your project 1101-Mam Creek. These samples were assigned to Isotech job numbers 8602 & 8636. These are the same data that were emailed to you earlier. If you have any questions, or if there is anything else we can do for you, please do not hesitate to contact us.

Thank you for choosing Isotech for your analysis needs, we appreciate your business.

Sincerely,

Steven R. Pelphrey

Steven R. Pelphrey
Laboratory Manager

Enclosure

SRP:cw

ANALYSIS REPORT

Lab #: 120768 Job #: 8636
Sample Name: 703866 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 7/12/2007
Container: Dissolved Gas Bottle
Field/Site Name: Project 101 - Mamm Creek
Location: Garfield Colorado
Formation/Depth:
Sampling Point:
Date Received: 7/20/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.57			
Oxygen	4.84			
Nitrogen	82.31			
Carbon Dioxide	11.22			
Methane	0.0603			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1
Specific gravity, calculated: 1.042

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.73

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 119886 Job #: 8602
Sample Name: 703983 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 6/14/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0613			
Hydrogen	nd			
Argon	0.581			
Oxygen	0.285			
Nitrogen	35.39			
Carbon Dioxide	0.36			
Methane	63.30	-64.91	-236.5	
Ethane	0.0211			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 642
Specific gravity, calculated: 0.710

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 120767 Job #: 8636
Sample Name: 703996 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 7/12/2007
Container: Dissolved Gas Bottle
Field/Site Name: Project 101 - Mamm Creek
Location: Garfield Colorado
Formation/Depth:
Sampling Point:
Date Received: 7/20/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	0.686			
Oxygen	0.0182			
Nitrogen	54.12			
Carbon Dioxide	1.72			
Methane	43.10	-41.69	-176.3	
Ethane	0.348			
Ethylene	nd			
Propane	0.0014			
Iso-butane	0.0024			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 443
Specific gravity, calculated: 0.802

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.29

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 119889 Job #: 8602
Sample Name: 704023 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 6/25/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0164			
Hydrogen	nd			
Argon	0.977			
Oxygen	0.721			
Nitrogen	84.25			
Carbon Dioxide	1.42			
Methane	12.27	-36.97	-119.6	
Ethane	0.342			
Ethylene	nd			
Propane	0.0055			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 130
Specific gravity, calculated: 0.930

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 119885 Job #: 8602
Sample Name: 704050 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 6/12/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.55			
Oxygen	6.51			
Nitrogen	78.02			
Carbon Dioxide	12.40			
Methane	1.52			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 15
Specific gravity, calculated: 1.045

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. He dilution factor = 0.65

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

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ANALYSIS REPORT

Lab #: 119891 Job #: 8602
Sample Name: 704073 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 7/06/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	0.065			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.33			
Oxygen	12.70			
Nitrogen	64.40			
Carbon Dioxide	5.49			
Methane	16.01	-60.68	-126.1	
Ethane	0.0085			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 162
Specific gravity, calculated: 0.954

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. He dilution factor = 0.75

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 120769 Job #: 8636
Sample Name: 704074 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 7/13/2007
Container: Dissolved Gas Bottle
Field/Site Name: Project 101 - Mamm Creek
Location: Garfield Colorado
Formation/Depth:
Sampling Point:
Date Received: 7/20/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.37			
Oxygen	17.08			
Nitrogen	73.80			
Carbon Dioxide	7.75			
Methane	nd			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 0
Specific gravity, calculated: 1.039

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.63

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 120771 Job #: 8636
Sample Name: 704076 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 7/13/2007
Container: Dissolved Gas Bottle
Field/Site Name: Project 101 - Mamm Creek
Location: Garfield Colorado
Formation/Depth:
Sampling Point:
Date Received: 7/20/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.19			
Oxygen	7.29			
Nitrogen	68.90			
Carbon Dioxide	2.94			
Methane	19.68	-39.27	-167.8	
Ethane	nd			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 199
Specific gravity, calculated: 0.917

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.68

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 119890 Job #: 8602
Sample Name: 704151 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 6/26/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0064			
Hydrogen	nd			
Argon	0.525			
Oxygen	0.673			
Nitrogen	31.92			
Carbon Dioxide	1.07			
Methane	65.80	-40.99	-182.6	
Ethane	0.0087			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 667
Specific gravity, calculated: 0.704

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 119888 Job #: 8602
Sample Name: 704330 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 6/23/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0046			
Hydrogen	nd			
Argon	0.0936			
Oxygen	0.749			
Nitrogen	5.13			
Carbon Dioxide	0.66			
Methane	93.31	-44.68	-203.5	
Ethane	0.0483			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 947
Specific gravity, calculated: 0.587

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 119887 Job #: 8602
Sample Name: 704332 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 6/23/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	0.063			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.57			
Oxygen	5.46			
Nitrogen	83.73			
Carbon Dioxide	9.18			
Methane	nd			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 0
Specific gravity, calculated: 1.032

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. He dilution factor = 0.63

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 119892 Job #: 8602
Sample Name: 704534 Co. Lab#:
Company: SS Papadopulos
Date Sampled: 7/06/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101 - Mam Creek
Location: Garfield County CO
Formation/Depth:
Sampling Point:
Date Received: 7/10/2007 Date Reported: 8/13/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Hydrogen Sulfide				
Helium	na			
Hydrogen	na			
Argon	na			
Oxygen + Argon				
Nitrogen				
Carbon Dioxide				
Methane				
Ethane				
Ethylene	na			
Propane				
Iso-butane				
N-butane				
Iso-pentane				
N-pentane				
Hexanes +				

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated:
Specific gravity, calculated:

Remarks: sample on hold

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

Task 1 QA/QC

TASK1 QAQC

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Isotech Laboratories, Inc. 1308 Parkland Court Champaign, IL 61821-1826 Telephone 217/398-3490 FAX 217/398-3493

December 12, 2007

Bryan Grigsby
SS Papadopulos
3100 Arapahoe Ave
Suite 203
Boulder, CO 80303

Dear Bryan,

Enclosed is the hard copy analysis report for the gas sample submitted from project 1101 in Garfield County. This sample was assigned to Isotech job number 8821. These are the same data that were emailed to you earlier: this copy is for your records.

If you have any questions or if there is anything else we can do for you, please do not hesitate to contact us. Thank you for choosing Isotech for your analysis needs, we appreciate your business.

Sincerely,

Steven R. Pelphrey

Steven R. Pelphrey
Laboratory Manager

Enclosure (1)

ANALYSIS REPORT

Lab #: 122946 Job #: 8821
Sample Name: 703866-A Co. Lab#:
Company: SS Papadopulos
Date Sampled: 9/06/2007
Container: Dissolved Gas Bottle
Field/Site Name: 1101
Location: Garfield Co, CO
Formation/Depth:
Sampling Point:
Date Received: 9/07/2007 Date Reported: 9/12/2007

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	0.028			
Hydrogen Sulfide	nd			
Helium	nd			
Hydrogen	nd			
Argon	1.52			
Oxygen	1.47			
Nitrogen	83.94			
Carbon Dioxide	12.99			
Methane	0.0508			
Ethane	nd			
Ethylene	nd			
Propane	nd			
Iso-butane	nd			
N-butane	nd			
Iso-pentane	nd			
N-pentane	nd			
Hexanes +	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1
Specific gravity, calculated: 1.047

Remarks: Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. He dilution factor = 0.73

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

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Task 2 Laboratory Analytical Results

TASK 2 RESULTS

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Isotech Laboratories, Inc. 1308 Parkland Court Champaign, IL 61821-1826 Telephone 217/398-3490 FAX 217/398-3493

January 18, 2008

Bryan Grigsby
SS Papadopulos
3100 Arapahoe Ave
Suite 203
Boulder CO 80303

Dear Bryan,

Enclosed are the hard copy analysis reports for the gas samples from your project 1101. These samples were assigned to Isotech job number 9167. These are the same data that were emailed to you earlier.

We will hold the samples until 2/11/08 in case you would want any additional analyses carried out, and will then dispose of the remaining sample material. If you need us to hold the samples longer, please contact us.

If you have any questions or if there is anything else we can do for you, please do not hesitate to contact us. Thank you for choosing Isotech for your analysis needs, we appreciate your business.

Sincerely,

Steven R. Pelphrey

Steven R. Pelphrey
Laboratory Manager

Enclosures (4)

ANALYSIS REPORT

Lab #: 128639 Job #: 9167
Sample Name: 05-045-07155 (Boulton 10) Co. Lab#:
Company: SS Papadopulos
Date Sampled: 12/06/2007 Cylinder: 2037
Container: 300 ml stainless
Field/Site Name: Project 1101
Location: Garfield County
Formation/Depth:
Sampling Point:
Date Received: 12/12/2007 Date Reported: 1/18/2008

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0053			
Hydrogen	0.0036			
Argon	nd			
Oxygen	nd			
Nitrogen	0.11			
Carbon Dioxide	0.62			
Methane	83.12	-41.67	-199.1	
Ethane	9.52			
Ethylene	nd			
Propane	4.02			
Iso-butane	0.859			
N-butane	0.890			
Iso-pentane	0.291			
N-pentane	0.226			
Hexanes +	0.331			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1209
Specific gravity, calculated: 0.689

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

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ANALYSIS REPORT

Lab #: 128638 Job #: 9167
Sample Name: 05-045-09156 (Magnall) Co. Lab#:
Company: SS Papadopulos
Date Sampled: 12/06/2007 Cylinder: 2769
Container: 300 ml stainless
Field/Site Name: Project 1101
Location: Garfield County
Formation/Depth:
Sampling Point:
Date Received: 12/12/2007 Date Reported: 1/18/2008

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0047			
Hydrogen	0.0014			
Argon	nd			
Oxygen	0.0059			
Nitrogen	0.13			
Carbon Dioxide	1.62			
Methane	83.99	-41.80	-197.7	
Ethane	8.94			
Ethylene	nd			
Propane	3.43			
Iso-butane	0.704			
N-butane	0.689			
Iso-pentane	0.197			
N-pentane	0.131			
Hexanes +	0.155			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1164
Specific gravity, calculated: 0.677

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

ANALYSIS REPORT

Lab #: 128636 Job #: 9167
Sample Name: 05-045-09462 (Magic) Co. Lab#:
Company: SS Papadopulos
Date Sampled: 12/06/2007 Cylinder: 2006
Container: 300 ml stainless
Field/Site Name: Project 1101
Location: Garfield County
Formation/Depth:
Sampling Point:
Date Received: 12/12/2007 Date Reported: 1/18/2008

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0055			
Hydrogen	nd			
Argon	nd			
Oxygen	0.0244			
Nitrogen	0.21			
Carbon Dioxide	1.43			
Methane	84.81	-41.49	-195.5	
Ethane	8.38			
Ethylene	nd			
Propane	3.00			
Iso-butane	0.667			
N-butane	0.680			
Iso-pentane	0.237			
N-pentane	0.184			
Hexanes +	0.369			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1164
Specific gravity, calculated: 0.675

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

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ANALYSIS REPORT

Lab #: 128637 Job #: 9167
Sample Name: 05-045-13527 (Boulton) Co. Lab#:
Company: SS Papadopulos
Date Sampled: 12/06/2007 Cylinder: 2752
Container: 300 ml stainless
Field/Site Name: Project 1101
Location: Garfield County
Formation/Depth:
Sampling Point:
Date Received: 12/12/2007 Date Reported: 1/18/2008

Component	Chemical mol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd			
Hydrogen Sulfide	nd			
Helium	0.0040			
Hydrogen	0.0010			
Argon	nd			
Oxygen	nd			
Nitrogen	0.072			
Carbon Dioxide	3.50			
Methane	84.30	-41.39	-191.6	
Ethane	7.22			
Ethylene	nd			
Propane	2.68			
Iso-butane	0.680			
N-butane	0.701			
Iso-pentane	0.263			
N-pentane	0.200			
Hexanes +	0.383			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 1134
Specific gravity, calculated: 0.687

nd = not detected. na = not analyzed. Isotopic composition of carbon is relative to VPDB. Isotopic composition of hydrogen is relative to VSMOW. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %. Chemical analysis based on standards accurate to within 2%

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