ISOTECH ®

Web Page www.isotechlabs.com Email mail@isotechlabs.com

Isotech Laboratories, Inc. 1308 Parkland Court, Champaign IL 61821-1826 Telephone (217) 398-3490 Fax (217) 398-3493

received 04/11/2008
Complaint 1841034
Document 2144700

Lab #: 133845 Job #: 9555
Sample Name/Number: Norsk 14-11
Company: Colorado Oil & Gas Conservation
Date Sampled: 3/25/2008
Container: Dissolved Gas Bottle
Field/Site Name: Complaint 1841034
Location: Las Animas Co, CO
Formation/Depth: produced water 05-071-09125
Sampling Point:
Date Received: 3/26/2008 Date Reported: 4/11/2008

Component	Chemical mol. %	Chemical Air Free vol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd	nd			
Hydogen Sulfide	nd	nd			
Helium	nd	nd			
Hydrogen	nd	nd			
Argon	0.19	0.012			
Oxygen	4.04				
Nitrogen	19.44	5.42			
Carbon Dioxide	1.83	2.27			
Methane	74.48	92.27	-45.82	-220.4	
Ethane	0.023	0.029			
Ethylene	nd	nd			
Propane	nd	nd			
Iso-butane	nd	nd			
N-butane	nd	nd			
Iso-pentane	nd	nd			
N-pentane	nd	nd			
Hexanes +	nd	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 755
Specific gravity, calculated: 0.676

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.52

Delta C-13 of DIC: +26.24

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 percent. Mol. % is approximately equal to vol. %

ISOTECH®
Web Page www.isotechlabs.com Email mail@isotechlabs.com
Isotech Laboratories, Inc. 1308 Parkland Court, Champaign IL 61821-1826 Telephone (217) 398-3490 Fax (217) 398-3493

Lab #:	133846	Job #:	9555
Sample Name/Number:	Martorano 44-15		
Company:	Colorado Oil & Gas Conservation		
Date Sampled:	3/25/2008		
Container:	Dissolved Gas Bottle		
Field/Site Name:	Complaint 1841034		
Location:	Las Animas Co, CO		
Formation/Depth:	produced water 05-071-08087		
Sampling Point:			
Date Received:	3/26/2008	Date Reported:	4/11/2008

Component	Chemical mol. %	Chemical Air Free vol. %	Delta 13C per mil	Delta D per mil	Delta 15N per mil
Carbon Monoxide	nd	nd			
Hydogen Sulfide	nd	nd			
Helium	nd	nd			
Hydrogen	11.42	11.45			
Argon	0.16	0.16			
Oxygen	0.052				
Nitrogen	9.96	9.79			
Carbon Dioxide	2.81	2.82			
Methane	75.55	75.74	-45.33	-222.5	
Ethane	0.036	0.036			
Ethylene	nd	nd			
Propane	0.0075	0.0075			
Iso-butane	nd	nd			
N-butane	nd	nd			
Iso-pentane	nd	nd			
N-pentane	nd	nd			
Hexanes +	nd	nd			

Total BTU/cu.ft. dry @ 60deg F & 14.7psia, calculated: 803
Specific gravity, calculated: 0.569

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.69

Delta C-13 of DIC: +25.44

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 percent. Mol. % is approximately equal to vol. %