



A.B.N. 44 000 964 278
3 - 5, 18 Redland Drive
Mitcham, Vic, 3132
Telephone: (03) 9874 1988
Fax: (03) 9874 1933

Chartered Chemists

29-Oct-2014

AGL Energy Limited
L21, 101 Miller Street
North Sydney

New South Wales 2065
Attention: Rachel Braikenridge

REPORT NUMBER: M142055AR2

Site/Client Ref: BTEX Analysis

Order No: 4510010590

CERTIFICATE OF ANALYSIS

This report replaces previous report(s) dated 28/10/2014 or earlier

SAMPLES: Five samples were received for analysis

DATE RECEIVED: **24-Sep-2014**

DATE COMMENCED: **30-Sep-2014**

METHODS: See Attached Results

RESULTS: Please refer to attached pages for results.

Note: Results are based on samples as received at SGS Leeder Consulting's laboratories

REPORTED BY:

Evan Jones
Laboratory Manager



NATA Accredited Laboratory Number: 14429

Accredited for compliance
with ISO/IEC 17025.

(I) RESULTS

Report N°: M142055AR2

Matrix: Water

Method: MA-15.WW.01 Volatile Organic Compounds

Sample units are expressed in mg/L

		Leeder ID	2014017752	2014017754	2014019139	2014019141	2014019143
		Client ID	Broken x-link gel sample	Pontilands Dam	Linear gel sample without choline chloride	Linear gel sample with choline chloride	Choline chloride Raw
Analyte Name	PQL						
Benzene	0.001		nd	nd	nd	nd	<0.01
Ethylbenzene	0.001		nd	nd	nd	nd	<0.01
Toluene	0.001		nd	nd	nd	nd	<0.01
m&p-Xylenes	0.001		nd	nd	nd	nd	<0.01
o-Xylene	0.001		nd	nd	nd	nd	<0.01

Matrix: Water

Method: MA-15.WW.01 Volatile Organic Compounds

Sample units are expressed in mg/L

		Leeder ID	2014019144	2014019145
		Client ID	Linear gel sample without choline chloride	Method
Analyte Name	PQL		Duplicate	Blank
Benzene	0.001		nd	nd
Ethylbenzene	0.001		nd	nd
Toluene	0.001		nd	nd
m&p-Xylenes	0.001		nd	nd
o-Xylene	0.001		nd	nd

Results:

The tables on this page show the results of test done on the AGL CSG fracture stimulation fluids

(I) RESULTS

Report N°: M142055AR2

Matrix: Water

Method: VOC Surrogate Recovery

Sample units are expressed in %

		Leeder ID	2014017752	2014017754	2014019139	2014019141	2014019143
		Client ID	Broken x-link gel sample	Pontilands Dam	Linear gel sample without choline chloride	Linear gel sample with choline chloride	Choline chloride Raw
Analyte Name	PQL						
Dibromofluoromethane			84	102	111	95	64
12-Dichloroethane-d4			106	107	98	102	69
Toluene-d8			101	101	94	97	93
p-Bromofluorobenzene			91	90	82	82	81

Matrix: Water

Method: VOC Surrogate Recovery

Sample units are expressed in %

		Leeder ID	2014019144	2014019145
		Client ID	Linear gel sample without choline chloride	Method
Analyte Name	PQL		Duplicate	Blank
Dibromofluoromethane			103	111
12-Dichloroethane-d4			95	101
Toluene-d8			95	97
p-Bromofluorobenzene			82	82

Surrogates:

These are organic compounds which are added to all samples prior to analysis, and are used to determine the extraction efficiency of the method. These compounds are similar to the target analytes in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

The surrogacy and quality control test is completed to ensure the accuracy of the fracture stimulation fluid test, the results of which are reported on page 2

(II) QUALITY CONTROL

Report N°: M142055AR2

Matrix: Water

Method: MA-15.WW.01 Volatile Organic Compounds

Quality Control Results are expressed in Percent Recovery of expected result

Analyte Name	Leeder ID	2014019146	2014019147
	Client ID	Method	Method
	PQL	Spike	Spike Dup
Benzene		104	96
Ethylbenzene		101	94
Toluene		106	99
m&p-Xylenes		66	60
o-Xylene		101	92

Matrix: Water

Method: VOC Surrogate Recovery

Quality Control Results are expressed in Percent Recovery of expected result

Analyte Name	Leeder ID	2014019146	2014019147
	Client ID	Method	Method
	PQL	Spike	Spike Dup
Dibromofluoromethane		80	106
12-Dichloroethane-d4		80	96
Toluene-d8		93	94
p-Bromofluorobenzene		86	87

Method Spike (& Spike Dup):

A control matrix is spiked with known concentrations of the target analytes (in this case BTEX). The spiking occurs during the sample preparation and prior to the extraction procedure. The purpose of the spiking (carried out in duplicate) is to determine the precision and bias of the procedure. The results are reported as a percentage recovery of the amount added. The surrogacy and quality control test is completed to ensure the accuracy of the fracture stimulation fluid test, the results of which are reported on page 2

QUALIFIERS / NOTES FOR REPORTED RESULTS

PQL	Practical Quantitation Limit
<i>is</i>	Insufficient Sample to perform this analysis.
T	Tentative identification based on computer library search of mass spectra.
ND	Not Detected – The analyte was not detected above the reported PQL.
NC	Not calculated, Results below PQL
<i>nr</i>	Not Requested for analysis.
R	Rejected Result – results for this analysis failed QC checks.
SQ	Semi-Quantitative result – quantitation based on a generic response factor for this class of analyte.
IM	Inappropriate method of analysis for this compound
U	Unable to provide Quality Control data – high levels of compounds in sample interfered with analysis of QC results.
UF	Unable to provide Quality Control data- Surrogates failed QC checks due to sample matrix effects
L	Analyte detected at a level above the linear response of calibration curve.
E	Estimated result. NATA accreditation does not cover estimated results.
C1	These compounds co-elute.
C2	These compounds co-elute.
CT	Elevated concentration. Results reported from carbon tube analysis
**	Sample shows non-petroleum hydrocarbon profile

This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions/General-Conditions-of-Services-English.aspx>. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents

This report must not be reproduced, except in full.



APPENDIX ONE.

CHAIN OF CUSTODY DOCUMENT