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**AGL UPSTREAM INVESTMENTS PTY LTD
ROSALIND PARK GAS PLANT
Air Monitoring Report**

Reporting Period: November 2012

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Foreword

PREMISES	Rosalind Park Gas Plant Lot 35 Medhurst Road GILEAD NSW 2560
LICENCE DETAILS	<u>Environment Protection Licence 12003</u>
LICENCEE	AGL Upstream Investments Pty Limited
LICENCEE'S ADDRESS	Locked Bag 1837, North Sydney, NSW 2060
REPORTING PERIOD	01 November to 30 November 2012
REPORT DATE	21 December 2012
REPORT PREPARED BY	Aaron Clifton Environmental Manager

SUMMARY OF ACTIVITY

Rosalind Park Gas Plant, located approximately 60km south west of Sydney, is a natural gas processing and treatment plant, used to process coal seam natural gas from the Camden Gas Project.

Produced natural gas is cleaned, dehydrated, compressed and odourised before being measured and transported by pipeline about 500 metres into the nearby Moomba to Sydney Natural Gas Pipeline. The premises covered by this Environment Protection Licence also includes all gas wells, gas gathering, reticulation systems, trunk lines and associated effluent storage areas and work areas of the Camden Gas Project.

This Monitoring Report relates to those air monitoring activities specified in Part 5, Monitoring and Recording Conditions, of the Environment Protection Licence. The Licence conditions stipulate air monitoring is required to be carried out at the locations, at the frequency and using the test methods as set out in the tables below.

This report sets out the results of continuous monitoring summarized on a monthly basis. A separate report is issued for quarterly monitoring.



This report is prepared in accordance with the *Requirements for Publishing Pollution Monitoring Data* (EPA, March 2012) (**Publication Requirements**).

AIR MONITORING LOCATIONS

Point	Location	Monitoring Frequency
1	Exhaust Stack 1 on Compression Engine 1	Continuous
2	Exhaust Stack 2 on Compression Engine 2	Continuous
3	Exhaust Stack 3 on Compression Engine 3	Continuous

Note: monitoring is only undertaken when the compression engines are running.

AIR MONITORING TEST METHODS

Parameter	NSW EPA Test Method (Sampling Method)	Reference Method
Oxides of Nitrogen	CEM-2	USEPA Performance Specification 2
Temperature	TM-2	USEPA Method 2
Moisture content	TM-22	USEPA Method 4
Volumetric Flow Rate	CEM-6	USEPA Performance Specification 6
Oxygen	CEM-3	USEPA Performance Specification 3

USEPA Method refers to the US Environmental Protection Agency 2000, Code of Federal Regulations, Title 40, Part 60, Appendix A Methods.

USEPA Performance Specification refers to the US Environmental Protection Agency 2000, Code of Federal Regulations, Title 40, Part 60, Appendix B, Performance Specifications.

Air Monitoring Results

Continuous monitoring results are based on test results obtained over a one-hour averaging period as set out in Schedule 5 of the *Protection of the Environment Operations (Clean Air) Regulation 2010 (NSW)*.

Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Number of times measured during sampling period	Minimum value	Average value	Maximum value	Concentration limit
1	Compressor Engine 1	Oxides of Nitrogen	milligrams per cubic metre	7% oxygen	CEM-2	Continuous	<i>The CEMS of Compressor Engine 1 was operating for 45 minutes of every one hour period. The remaining 15 minute period was down time for cleaning purposes. See Note 2.</i>	216	402	605 See Note 1	461
		Temperature	degrees Celsius		TM-2	Continuous		338	366	385	
		Moisture	percent		TM-22	Continuous		See Note 2	See Note 2	See Note 2	
		Volumetric flow rate	cubic metres per second		CEM-6	Continuous		See Note 2	See Note 2	See Note 2	
		Oxygen	percent		CEM-3	Continuous		11.00	11.84	12.62	
2	Compressor Engine 2	Oxides of Nitrogen	milligrams per cubic metre	7% oxygen	CEM-2	Continuous	<i>Compressor Engine 2 operated from 01-09 and 19-30 November. The CEMS of Compressor Engine 2 was operating for 45 minutes of every one hour period. The remaining 15 minute period was down time for cleaning purposes. See Note 4.</i>	71	166	896 See Note 3	461
		Temperature	degrees Celsius		TM-2	Continuous		347	431	497	
		Moisture	percent		TM-22	Continuous		See Note 4	See Note 4	See Note 4	
		Volumetric flow rate	cubic metres per second		CEM-6	Continuous		See Note 4	See Note 4	See Note 4	
		Oxygen	percent		CEM-3	Continuous		0.49	0.63	0.99	
3	Compressor Engine 3	Oxides of Nitrogen	milligrams per cubic metre	7% oxygen	CEM-2	Continuous	<i>Compressor Engine 3 operated on 02 November and from 09-19 November. The CEMS of Compressor Engine 3 was operating for 45 minutes of every one hour period. The remaining 15 minute period was down time</i>	50	59	71	461
		Temperature	degrees Celsius		TM-2	Continuous		See Note 5	See Note 5	See Note 5	
		Moisture	percent		TM-22	Continuous		See Note 5	See Note 5	See Note 5	
		Volumetric flow rate	cubic metres per second		CEM-6	Continuous		See Note 5	See Note 5	See Note 5	
		Oxygen	percent		CEM-3	Continuous		0.66	0.88	1.84	



Air Monitoring Results

EML Air Pty Ltd has been engaged by AGL to undertake independent monitoring each month for Monitoring Points 1, 2 and 3. This is additional monitoring beyond the conditions of EPL 12003. Results for monitoring undertaken by EML Air Pty Ltd (Report N90125) on 09 November 2012 are as follows:

Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Result	Concentration limit
1	Compressor Engine 1	Oxides of Nitrogen	milligrams per cubic metre	7% oxygen	TM-11	Not applicable	400	461
		Temperature	degrees Celsius		TM-2	Not applicable	341	
		Moisture	percent		TM-22	Not applicable	8.7	
		Volumetric flow rate	cubic metres per second		TM-2	Not applicable	3	
		Oxygen	percent		TM-25	Not applicable	12.4	
2	Compressor Engine 2	Oxides of Nitrogen	milligrams per cubic metre	7% oxygen	TM-11	Not applicable	310	461
		Temperature	degrees Celsius		TM-2	Not applicable	414	
		Moisture	percent		TM-22	Not applicable	17	
		Volumetric flow rate	cubic metres per second		TM-2	Not applicable	0.81	
		Oxygen	percent		TM-25	Not applicable	0.9	
3	Compressor Engine 3	Oxides of Nitrogen	milligrams per cubic metre	7% oxygen	TM-11	Not applicable	<i>Compressor Engine 3 was not operating.</i>	461
		Temperature	degrees Celsius		TM-2	Not applicable		
		Moisture	percent		TM-22	Not applicable		
		Volumetric flow rate	cubic metres per second		TM-2	Not applicable		
		Oxygen	percent		TM-25	Not applicable		



Notes:

1. The NO_x concentration limit was exceeded during the reporting period. The exceedances were caused by a drift in the air fuel ratio adjustment system, causing the engine to run rich (more fuel) which elevates the NO_x emissions. This problem was identified after the reporting period and has now been rectified.
2. In accordance with Section 3.4.1 of the EPA Publication Requirements, the following data points have not been included for Monitoring Point 1 (Compressor #1 exhaust stack) as AGL knows that the data collected is incorrect. The data is incorrect because the component of the equipment measuring the relevant parameter has either failed or was not operating. AGL has taken and is currently taking actions to rectify the issue (e.g. replacement of failed components of measuring equipment).

Date	Approximate total hours	Pollutant
01.11.2012 to 05.11.2012	105	Oxides of Nitrogen, Temperature and Oxygen, Volumetric Flow Rate, Moisture
12.11.2012 to 30.11.2012	11	Oxides of Nitrogen, Temperature and Oxygen
13.11.2012	1	Oxides of Nitrogen
23.11.2012	1	Oxides of Nitrogen
23.11.2012	1	Oxygen
05.11.2012 to 30.11.2012	604	Volumetric Flow Rate, Moisture

3. The NO_x concentration limit was exceeded for short periods of time on the on 7, 8 and 9 November 2012. Upon discovering the exceedances on 9 November 2012, the unit was shut down for maintenance. The exceedances were caused by ash fouling of the catalyst cell, causing a reduction of the catalysts surface area, which reduces catalyst efficiency. Through maintenance of the catalyst, the cell was rejuvenated, enabling efficient operation and reduced NO_x emissions. This issue has now been rectified.
4. In accordance with Section 3.4.1 of the EPA Publication Requirements, the following data points have not been included for Monitoring Point 2 (Compressor #2 exhaust stack) as AGL knows that the data collected is

incorrect. The data is incorrect because the component of the equipment measuring the relevant parameter has either failed or was not operating. AGL has taken and is currently taking actions to rectify the issue (e.g. replacement of failed components of measuring equipment).

Date	Approximate total hours	Pollutant
05.11.2012	2	Oxides of Nitrogen
06.11.2012	2	Oxides of Nitrogen
08.11.2012	1	Oxides of Nitrogen
01.11.2012 to 09.11.2012 , and 19.11.2012 to 30.11.2012	488	Volumetric Flow Rate, Moisture

5. In accordance with Section 3.4.1 of the EPA Publication Requirements, the following data points have not been included for Monitoring Point 3 (Compressor #3 exhaust stack) as AGL knows that the data collected is incorrect. The data is incorrect because the component of the equipment measuring the relevant parameter has either failed or was not operating. AGL has taken and is currently taking actions to rectify the issue (e.g. replacement of failed components of measuring equipment).

Date	Approximate total hours	Pollutant
02.11.2012 and 09.11.2012 to 19.11.2012	246	Volumetric Flow Rate, Moisture, Temperature