AGL UPSTREAM INVESTMENTS PTY LTD
Newcastle Gas Storage Facility
Air Monitoring Report

Reporting Period: April 2018

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Foreword

PREMISES	Newcastle Gas Storage Facility 5 Old Punt Road TOMAGO NSW 2322
LICENCE DETAILS	Environment Protection Licence 20130
LICENCEE	AGL Upstream Investments Pty Limited
LICENCEE'S ADDRESS	Locked Bag 1837, St Leonards, NSW 2065
MONITORING DATE	03 April 2018
MONITORING BY	Ektimo
ANALYSIS BY	Ektimo (laboratory report number R005801)
OBTAINED DATA DATE	30 April 2018 (Ektimo Report R005801)
REPORT DATE	01 May 2018
REPORT PREPARED BY	Aaron Clifton Environment Business Partner

SUMMARY OF ACTIVITY

The Newcastle Gas Storage Facility (NGSF) is located in Tomago, New South Wales.

The NGSF includes:

- A processing plant that converts pipeline natural gas to liquefied natural gas (LNG) by cooling it to -162°C. It is capable of processing up to 66,500 tonnes of LNG per year.
- An insulated, non-pressurised LNG storage tank capable of containing 30,000 tonnes or 63,000 m^3 of LNG, equivalent to 1.5 petajoules (PJ) of natural gas, and an associated containment area.
- A re-gasification unit to convert the LNG in the storage tank back into natural gas.
- A flare stack with a height of approximately 15m to combust hydrocarbons discharged from the process.

- A truck loading facility to allow the dispatch of up to 1,000 tankers of LNG per year.
- Infrastructure and utility connection and an emergency access road.

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 is prepared in accordance with the *Requirements for Publishing Pollution Monitoring Data* (EPA, October 2013) (**Publication Requirements**).

AIR MONITORING LOCATIONS

Point	Location	Monitoring Frequency
7	Stack associated with the Gas Liquefaction System (H101)	Twice per year
8	Stack associated with the LNG Vaporiser (H501A)	Twice per year*
10	Stack associated with the LNG Vaporiser (H501B)	Twice per year*
11	Stack associated with the LNG Vaporiser (H501C)	Twice per year*

Note: monitoring is only undertaken when the equipment is operating.
*Not operating at the time of monitoring.

AIR MONITORING TEST METHODS

Parameter	NSW EPA Test Method (Sampling Method)
Carbon dioxide	TM-24
Carbon monoxide	TM-32
Dry gas density	TM-23
Moisture	TM-22
Molecular weight of stack gases	TM-23
Nitrogen Oxides	TM-11
Oxygen (O_2)	TM-25
Solid Particles	TM-15
Sulfuric acid mist and sulphur trioxide (as SO_3)	TM-3
Sulphur dioxide	TM-4

Parameter	NSW EPA Test Method (Sampling Method)
Temperature	TM-2
Velocity	TM-2
Volatile organic compounds	OM-2
Volumetric flowrate	TM-2

Air Monitoring Results

Monitoring Date: 03 April 2018

Monitoring Point	Description	Pollutant	Units of measure	Oxygen correction	Sampling method	Monitoring frequency required by licence	Average Concentration	Concentration limit
7	Stack associated with Gas Liquefaction System (H101)	Carbon dioxide	Percent		TM-24	Twice per year	9.3	Not applicable
		Carbon monoxide	Milligrams per cubic metre	3%	TM-32	Twice per year	41	100
		Dry gas density	Kilograms per cubic metre		TM-23	Twice per year	1.33	Not applicable
		Moisture	Percent		TM-22	Twice per year	12	Not applicable
		Molecular weight of stack gases	Grams per gram mole		TM-23	Twice per year	29.8	Not applicable
		Nitrogen Oxides (as NO_2 equivalent)	Milligrams per cubic metre		TM-11	Twice per year	75	250
		Oxygen (O_2)	Percent		TM-25	Twice per year	4	Not applicable
		Solid Particles	Milligrams per cubic metre		TM-15	Twice per year	<2	5
		Sulfuric acid mist and sulphur trioxide (as SO_3)	Milligrams per cubic metre		TM-3	Twice per year	0.36	60
		Sulphur dioxide	Milligrams per cubic metre		TM-4	Twice per year	<5	Not applicable
		Temperature	Kelvin		TM-2	Twice per year	502	Not applicable
		Velocity	Metres per second		TM-2	Twice per year	5.5	Not applicable
		Volatile organic compounds	Milligrams per cubic metre	3%	OM-2	Twice per year	0.68	5
		Volumetric flowrate	Cubic metres per second		TM-2	Twice per year	0.78	Not applicable