



AGL UPSTREAM INVESTMENTS PTY LTD
Newcastle Gas Storage Facility
Annual Noise Monitoring Report

Reporting Period: May 2019

AGL Upstream Investments Pty Ltd

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Foreword

PREMISES	Newcastle Gas Storage Facility 5 Old Punt Road TOMAGO NSW 2322
LICENCE DETAILS	<u>Environment Protection Licence 20130</u>
LICENCEE	AGL Upstream Investments Pty Limited
LICENCEE'S ADDRESS	Locked Bag 3013, Australia Square, NSW 1215
MONITORING DATE	15 May 2019
MONITORING BY	EMM Consulting Pty Limited
ANALYSIS BY	EMM Consulting Pty Limited (report number H190290 RP#1)
OBTAINED DATA DATE	30 May 2019
REPORT DATE	14 June 2019
REPORT PREPARED BY	Aaron Clifton Environment Program and Project Lead

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 m³ 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 noise monitoring activities specified in Part 5, Monitoring and Recording Conditions, of the Environment Protection Licence. The Licence conditions stipulate noise monitoring is required to be carried out as per the assessment periods at the locations and frequency set out in the table below.

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

NOISE MONITORING LOCATIONS

Point	Location	Assessment Period	Minimum Duration	Minimum Frequency
2	Hunter Botanical Gardens	Day, Evening, Night	15 minutes	Yearly
3	5 Grahame Drive Tomago	Day, Evening, Night	15 minutes	Yearly
5	45 School Drive Tomago	Day, Evening, Night	15 minutes	Yearly
6	Tomago Village Van Park	Day, Evening, Night	15 minutes	Yearly
9	Tomago Aluminium Company Meteorological Station	N/A	N/A	N/A

NOISE MONITORING MEASUREMENT PARAMETERS

Point	Time Period	Measurement Parameter
2	Day	Day – LAeq (15 minute)
	Evening	Evening – LAeq (15 minute)
	Night	Night – LAeq (15 minute)
3, 5, 6	Day	Day – LAeq (15 minute)
	Evening	Evening – LAeq (15 minute)
	Night	Night – LAeq (15 minute)
	Night	Night – LAeq (1 minute)

Noise Monitoring Results Summary, 15 May 2019

Monitoring Point	Monitoring Location Description	Period	Start time	Total Measured Noise Level			Project Contribution		EPL Noise Level	
				LA1	LAeq	LA90	LA1	LAeq	LA1	LAeq
2 – Hunter Botanical Gardens	A point along the NGSF northern access road at a similar distance from the NGSF as the nearest corner of Botanic Gardens.	Day	16:08	45	38	36	46	<31	N/A	50
		Evening	19:06	49	41	39	<33	<32	N/A	50
		Night	23:05	49	43	40	<35	<33	N/A	50
3 – Grahame Drive Tomago	In front of 5 Grahame Drive	Day	17:15	70	61	54	IA	IA	N/A	35
		Evening	18:00	65	58	50	IA	IA	N/A	35
		Night	22:00	65	54	36	IA	IA	45	35
5 – 45 School Drive Tomago	In front of 45 School Drive	Day	16:56	70	65	59	IA	IA	N/A	35
		Evening	18:20	73	65	52	IA	IA	N/A	35
		Night	22:19	68	58	41	IA	IA	45	35
6 – Tomago Village Van Park	Adjacent to Old Punt Road on Tomago Village Van Park boundary	Day	16:34	75	64	52	IA	IA	N/A	35
		Evening	18:41	64	54	50	IA	IA	N/A	35
		Night	22:40	66	57	53	IA	IA	45	35

IA = Inaudible; N/A = Not applicable

Weather conditions were recorded at Monitoring Point 9 during the noise survey were determined suitable for noise monitoring.



CONCLUSION

EMM has completed a review of operational noise from the NGSF within the surrounding community based on attended measurements conducted during the day, evening and night-time periods on 15 May 2019.

The applicability of noise criteria was assessed with reference to data from the Tomago Aluminium Company Meteorological Station located 470 metres to the south of the site. It was identified that noise limits were not applicable during two measurements, during the evening period at points 3 and 6.

The attended survey data demonstrates that operational noise from the NGSF was inaudible during nine of the 12 operator attended noise surveys at noise monitoring locations outlined in EPL 20130.

Low frequency noise was conservatively assessed by comparison of the overall measured one-third octave L_{Aeq} noise levels to the NPfl one-third octave low-frequency noise thresholds. Measured noise levels did not exceed the relevant LFN thresholds during any of the 12 operator attended noise surveys. Therefore, the LFN modifying factors were not applicable, in accordance with the NPfl.

Conservative calculations (assuming attenuation due to distance loss only) based on the results of monitoring at the additional location showed that the NGSF $L_{Aeq,15\text{ minute}}$ noise contributions satisfied the relevant EPL noise limits at all locations during the noise survey under worst-case operational conditions.