Permit

Environmental Protection Act 1994

Environmental authority EPPG00712213

This environmental authority is issued by the administering authority under Chapter 5 of the Environmental Protection Act 1994.

Environmental authority number: EPPG00712213

Environmental authority takes effect on 26 May 2021

Environmental authority holder(s)

Name(s)	Registered address
SANTOS GLNG PTY LTD	Ground Floor, Santos Centre 60 Flinders Street ADELAIDE SA 5000 Australia
Total GLNG Australia	Level 13 28 The Esplanade PERTH WA 6000
PAPL (Downstream) Pty Limited	'ADDISONS' Level 12 60 Carrington Street SYDNEY NSW 2000
KGLNG Liquefaction Pty Ltd	Level 11 28 The Esplanade PERTH WA 6000

Environmentally relevant activity and location details

Environmentally relevant activity/activities	Location(s)
Schedule 3 03: A petroleum activity that is likely to have a significant impact on a category A or B environmentally sensitive area	PFL10
Ancillary 16 - Extraction and Screening 2: Extracting, other than by dredging, in a year, the following quantity of material (c) more than 1,000,000t	PFL10

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Environmentally relevant activity/activities	Location(s)
Ancillary 64 - Water treatment 1: Desalinating, in a day, the following quantity of water, allowing the release of waste only to seawater (b) more than 5ML	PFL10
Ancillary 08 - Chemical Storage 3: Storing more than 500 cubic metres of chemicals of class C1 or C2 combustible liquids under AS 1940 or dangerous goods class 3 under subsection (1)(c)	PFL10
Ancillary 16 - Extraction and Screening 3: Screening, in a year, the following quantity of material (c) more than 1,000,000t	PFL10
Ancillary 08 - Chemical Storage 4: storing 200t or more of chemicals that are solids or gases, other than chemicals mentioned in items 1 to 3, under subsection (1)(d)	PFL10
Ancillary 33 - Crushing, milling, grinding or screening Crushing, grinding, milling or screening more than 5000t of material in a year	PFL10
Ancillary 09 - Hydrocarbon gas refining 1: Hydrocarbon gas refining (the relevant activity) consists of refining natural gas or coal seam methane gas (c) Coal seam gas	PFL10
Ancillary 38 - Surface Coating 2: Coating, painting or powder coating, using, in a year, more than 100t of surface coating materials	PFL10
Ancillary 10 - Gas Producing Manufacturing, processing or reforming 200t or more of hydrocarbon gas in a year	PFL10

Environmentally relevant activity/activities	Location(s)
Ancillary 47 - Timber Milling and Woodchipping Milling, in a year, the following total quantity of timber (c) more than 20,000t but not more than 100,000t	PFL10
Ancillary 14 - Electricity Generation 2: Generating electricity by using a fuel, other than gas, at a rated capacity of (a) 10MW electrical to 150MW electrical	PFL10
Ancillary 50 - Mineral and bulk material handling 2: Loading or unloading 100t or more of bulk materials in a day, other than loading or unloading mentioned in item 3, or storing bulk materials	PFL10
Ancillary 15 - Fuel burning Using fuel burning equipment that is capable of burning at least 500kg of fuel in an hour	PFL10
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (c) more than 1500 but not more than 4000EP	PFL10
Schedule 3 08: A petroleum or GHG storage activity, other than items 1 to 7, that includes an activity from Schedule 2 with an AES	PFL10
Ancillary 16 - Extraction and Screening 1: Dredging, in a year, the following quantity of material (b) more than 10,000t but not more than 100,000t	PFL10
Ancillary 63 - Sewage Treatment 1: Operating sewage treatment works, other than no-release works, with a total daily peak design capacity of (b-ii) more than 100 but not more than 1500EP otherwise	PFL10

Additional information for applicants

Environmentally relevant activities

The description of any environmentally relevant activity (ERA) for which an environmental authority (EA) is issued is a restatement of the ERA as defined by legislation at the time the EA is issued. Where there is any inconsistency between that description of an ERA and the conditions stated by an EA as to the scale, intensity or manner of carrying out an ERA, the conditions prevail to the extent of the inconsistency.

An EA authorises the carrying out of an ERA and does not authorise any environmental harm unless a condition stated by the EA specifically authorises environmental harm.

A person carrying out an ERA must also be a registered suitable operator under the *Environmental Protection Act 1994* (EP Act).

Contaminated land

It is a requirement of the EP Act that an owner or occupier of contaminated land give written notice to the administering authority if they become aware of the following:

- the happening of an event involving a hazardous contaminant on the contaminated land (notice must be given within 24 hours); or
- a change in the condition of the contaminated land (notice must be given within 24 hours); or
- a notifiable activity (as defined in Schedule 3) having been carried out, or is being carried out, on the contaminated land (notice must be given within 20 business days);

that is causing, or is reasonably likely to cause, serious or material environmental harm.

For further information, including the form for giving written notice, refer to the Queensland Government website www.qld.gov.au, using the search term 'duty to notify'.

Take effect

Please note that, in accordance with section 200 of the EP Act, an EA has effect:

a) if the authority is for a prescribed ERA and it states that it takes effect on the day nominated by the holder of the authority in a written notice given to the administering authority-on the nominated day; or

b) if the authority states a day or an event for it to take effect-on the stated day or when the stated event happens; or

c) otherwise-on the day the authority is issued.

However, if the EA is authorising an activity that requires an additional authorisation (a relevant tenure for a resource activity, a development permit under the *Sustainable Planning Act 2009* or an SDA Approval under the

State Development and Public Works Organisation Act 1971), this EA will not take effect until the additional authorisation has taken effect.

If this EA takes effect when the additional authorisation takes effect, you must provide the administering authority written notice within 5 business days of receiving notification of the related additional authorisation taking effect.

If you have incorrectly claimed that an additional authorisation is not required, carrying out the ERA without the additional authorisation is not legal and could result in your prosecution for providing false or misleading information or operating without a valid environmental authority.

Tristan Roberts
Department of Environment and Science
Delegate of the administering authority
Environmental Protection Act 1994

Date issued: 26 May 2021

Enquiries:
Petroleum and Gas Unit
Department of Environment and Science

Phone: 3330 5715
Email: petroleumandgas@des.qld.gov.au

Obligations under the *Environmental Protection Act 1994*

In addition to the requirements found in the conditions of this environmental authority, the holder must also meet their obligations under the EP Act, and the regulations made under the EP Act. For example, the holder must comply with the following provisions of the Act:

- general environmental duty (section 319)
- duty to notify environmental harm (section 320-320G)
- offence of causing serious or material environmental harm (sections 437-439)
- offence of causing environmental nuisance (section 440)
- offence of depositing prescribed water contaminants in waters and related matters (section 440ZG)
- offence to place contaminant where environmental harm or nuisance may be caused (section 443)

This environmental authority incorporates the following schedules:

Schedule A – General conditions
Schedule B – Air emissions
Schedule C – Water management
Schedule D – Noise management
Schedule E – Waste management
Schedule F – Land management
Schedule G – Storage and handling of chemicals, flammable and combustible substances
Schedule H – Petroleum infrastructure
Schedule I – Monitoring programs
Schedule J – Community issues
Schedule K – Notification procedures

Appendix 1 – Definitions
Appendix 2 – Figures

Schedule A – GENERAL CONDITIONS

AUTHORISED ACTIVITIES

A1 This environmental authority authorises the construction and operation of a two train Liquid Natural Gas Facility with a capacity up to 7.8 Million Tonnes per annum.

PREVENT AND/OR MINIMISE LIKELIHOOD OF ENVIRONMENTAL HARM

A2 This authority does not authorise environmental harm unless a condition contained within this authority explicitly authorises that harm. Where there is no condition or the authority is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.

A3 This environmental authority does not authorise a relevant act[1] to occur in carrying out an authorised relevant activity unless a condition of this environmental authority expressly authorises the relevant act to occur.

A4 In carrying out petroleum activities the holder of this authority must prevent and / or minimise the likelihood of environmental harm being caused.

MAINTENANCE OF MEASURES, PLANT AND EQUIPMENT

A5 The holder of this authority must:

(a) Install measurements, plant and equipment necessary to ensure compliance with the conditions of this authority
(b) maintain such measures, plant and equipment in a proper and efficient condition
(c) operate such measures, plant and equipment in a proper and efficient manner.

A6 All instruments, equipment and measuring devices used for measuring or monitoring in accordance with any condition of this authority must be calibrated, appropriately operated and maintained.

A7 The holder of this authority must ensure that daily operation and maintenance of all plant and equipment relating to the authorised petroleum activities are carried out by suitability qualified, competent and experienced person(s).

A8 No change, replacement or alteration of any plant or equipment is permitted if the change, replacement or alteration increases the risk of environmental harm from the petroleum activities.

A9 All analyses and tests required to be conducted under this authority must be carried out by a laboratory that has NATA certification for such analyses and tests, except as otherwise authorised by the administering authority.

[1] See section 493A of the Act

ENVIRONMENTAL MANAGEMENT PLAN

A10 An Environmental Management Plan (EM plan) must be implemented that provides for the effective management of the actual and potential impacts resulting from the carrying out of the petroleum activities. Documentation relating to the EM plan must be kept.

A11 The EM plan required by condition (A10) must address, at least, the following:

(1) Describe each of the following:
   (a) all relevant petroleum activities
   (b) the land on which the activities are to be undertaken
   (c) the environmental values likely to be affected by the activities
   (d) the potential adverse and beneficial impacts of the activities on the environmental values.

(2) State the environmental protection commitments the applicant proposes for the activities, to protect or enhance the environmental values under best practice environmental management.

(3) Include a rehabilitation program for land proposed to be disturbed

(4) Training staff in the awareness of environmental issues related to carrying out the petroleum activities, which must include at least:
   (a) The environmental policy of the authority holder, so that all persons that carry out the petroleum activities are aware of all relevant commitments to environmental management.
   (b) Any relevant environmental objectives and targets, so that all staff are aware of the relevant performance objectives and can work towards these
   (c) Control procedures to be implemented for routine operations for day to day activities to minimise the likelihood of environmental harm, however occasioned or caused
   (d) Contingency plans and emergency procedures to be implemented for non-routine situations to deal with foreseeable risks and hazards, including corrective responses to prevent and mitigate environmental harm (including any necessary site rehabilitation)
   (e) Organisational structure and responsibility to ensure that roles, responsibilities and authorities are appropriately defined to ensure effective management of environmental issues
   (f) Effective communication procedures to ensure two-way communication on environmental matters between operational staff and higher management
   (g) Obligations with respect to monitoring, notification and record keeping obligations under the EM plan and relevant approvals

(h) Monitoring of the release of contaminants into the environment including procedures, methods and record keeping.

(5) The conduct of periodic reviews of environmental performance and procedures adopted, not less frequently than every three years

(6) A program for continuous improvement.

A12 The EM Plan must not be implemented or amended in a way that contravenes or is inconsistent with any condition of this approval.

CONTINGENCY PLANS AND EMERGENCY PROCEDURES

A13 Contingency plans and emergency procedures must be developed and implemented for non-routine situations to deal with foreseeable risks and hazards including corrective responses to prevent and mitigate environmental harm (including a contingency plan when plant shuts down for maintenance or other reasons).

A14 The Contingency plans and emergency procedures required under Condition (A13) must address the following matters as a minimum:

(1) A clear definition of what constitutes an emergency event for the activity;

(2) Response procedures to be implemented to prevent or minimise the risk of environmental harm arising from incidents;

(3) Response procedures to minimise the extent and duration of environmental harm caused by an incident;

(4) The practices and procedures to be employed to restore the environment or mitigate any environmental harm caused;

(5) The resources to be used in response to an incident;

(6) Procedures to investigate the cause of any incidents, including releases, and where necessary, implement remedial actions to reduce the likelihood of recurrence of similar events;

(7) A receiving environment (surface waters/land) monitoring program, to be implemented in the event of a release to waters/land to examine/assess environmental impacts (for waters this must include upstream and downstream monitoring);

(8) The provision and availability of documented procedures to staff attending any incident to enable them to effectively respond;

(9) Training of staff that will be called upon to respond to incidents to enable them to effectively respond;

(10) Timely and accurate reporting of the circumstance and nature of incidents to the administering authority in accordance with conditions of this environmental authority;

(11) Procedures for accessing monitoring points during incidents; and

(12) Procedures to notify any potentially impacted stakeholder who may be affected by the event

THIRD PARTY AUDITING

A15 Compliance with the conditions of this authority must be audited by an appropriately qualified third party auditor, nominated by the holder of this authority and accepted by the administering authority, within one year of the completion of commissioning of the LNG Facility, and every three years thereafter

A16 Notwithstanding condition (A15), and prior to undertaking the third party audit, the scope and content of the third party audit can be negotiated with the administering authority.

A17 Upon receipt of the final third party audit report, the holder of this authority must submit a copy to the administering authority.

A18 The third party auditor must certify the findings of the audit in the report.

A19 The financial cost of the third party audit is borne by the holder of this authority.

A20 The holder of this authority must, within a reasonable period of time agreed in writing with the administering authority, act upon any recommendations arising from the audit report and:
(a) investigate any non-compliance issues identified; and
(b) as soon as practicable, implement measures or take necessary action to ensure compliance with this authority.

A21 Subject to condition (A20), but otherwise not more than one (1) month following the submission of the audit report, the holder of this authority must provide written advice to the administering authority addressing the:
(a) actions taken by the holder to ensure compliance with this authority; and
(b) actions taken to prevent a recurrence of any non-compliance issues identified.

A22 The third party auditor certification required by Condition (A18), must include a Statutory Declaration certifying the findings of the audit in the report.

DOCUMENTATION AND RECORDS MANAGEMNT

A23 All records and results required by the conditions of this environmental authority must be kept for a minimum of five (5) years.

A24 All documentation required by this environmental authority (including but not limited to the results of any audits, assessments, monitoring, inspections and complaint records) must be made available to the administering authority upon request

DEFINITIONS

A25 Words and phrases used in this authority are defined in Appendix 1 – Definitions. Where a definition for a term used in this authority is not defined within this authority, the definitions in the Environmental Protection Act 1994, its Regulation and Environmental Protection Policies must be used.

CULTURAL HERITAGE

A26 In the carrying out of the petroleum activity the holder of this environmental authority must not adversely impact on the cultural heritage values of any place registered on the Queensland Heritage Register.

Schedule B – AIR EMISSIONS

NUISANCE

B1 The release of noxious or offensive odours or any other noxious or offensive airborne contaminants resulting from the activities must not cause an environmental nuisance at any sensitive or commercial place

B2 The release of dust and/or particulate matter resulting from the activities must not cause an environmental nuisance at any sensitive or commercial place, unless the release is authorised by this environmental authority.

B3 Dust and particulate matter must not exceed any of the following levels when measured at any sensitive or commercial place.

(a) Dust deposition of 120 milligrams per square metre per day over a 30-days averaging period, when monitored in accordance with Australian Standard AS 3580.10.1 of 2003 (or more recent editions); OR

(b) A concentration of particulate matter with an aerodynamic diameter of less than 10 micrometre (μm) (PM10) suspended in the atmosphere of 50 micrograms per cubic metre (with five one day exceedances allowed in any one year period); and over a 24 hour averaging time, at a dust sensitive place downwind of the licensed place, when monitored in accordance with:

i. Australian Standard AS 3580.9.6 of 2003 (or more recent editions) 'Ambient air - Particulate matter - Determination of suspended particulate PM10 high-volume sampler with size-selective inlet -Gravimetric method'; or

ii. (ii) any alternative method of monitoring PM10 which may be permitted by the 'Air Quality Sampling Manual' as published from time to time by the administering authority.

Note: The above 5 days exceedances per year are based on the expected exceedances from the natural events such as bushfires and dust storm.

THE RELEASE OF CONTAMINANTS TO THE ATMOSPHERE

B4 The release of contaminants to the atmosphere from a point source must only occur from those release points identified in Schedule B, Table 1 - Contaminant Release Points and must be directed vertically upwards without any impedance or hindrance.

Schedule B – Table 1: Contaminant Release Points

Number of stack/units	Source description	Minimum release height (m) above ground level	Minimum velocity (m/s)
A1 – Methane Compressor Driver	Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at 15 percent oxygen reference level.	32	12
A2 - Methane Compressor Driver		32	12
A3 - Ethylene Compressor Driver (Bypass Stack)		44	2.4
A3 - Ethylene Compressor Driver (Waste Heat Recovery Unit Stack)		44	8.5
A4 - Ethylene Compressor Driver (Bypass Stack)		44	2.4
A4 - Ethylene Compressor Driver (Waste Heat Recovery Unit Stack)		44	8.5
A5 - Propane Compressor Driver		32	12
A6 - Propane Compressor Driver		32	12
A7 – Acid Gas and Nitrogen Vent		43	10
A8 – Hot Oil Heater	Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at 3 percent oxygen reference level.	41	1.2
A9 – Gas Turbine Generator Turbine Driver		30	26

A10 - Gas Turbine Generator Turbine Driver	Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at 15 percent oxygen reference level.	30	26
A11 - Gas Turbine Generator Turbine Driver	Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at 15 percent oxygen reference level.	30	19
A12 - Gas Turbine Generator Turbine Driver		30	19
A13 - Wet Gas Flares	N/A	100	N/A
A14 - Marine Flare	N/A	30	N/A
A15 - Dry Gas Flare	N/A	100	N/A
A16 - Backup Wet & Dry Flare	N/A	100	N/A
B1 - Methane Compressor Driver	Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at 15 percent oxygen reference level.	32	12
B2 - Methane Compressor Driver		32	12
B3 - Ethylene Compressor Driver (Bypass Stack)		44	2.4
B3 - Ethylene Compressor Driver (Waste Heat Recovery Unit Stack)		44	8.5
B4 - Ethylene Compressor Driver (Bypass Stack)		44	2.4
B4 - Ethylene Compressor Driver (Waste Heat Recovery Unit Stack)		44	8.5
B5 - Propane Compressor Driver		32	12
B6 - Propane Compressor Driver		32	12
B7 - Acid Gas and Nitrogen Vent		43	10
B8 – Hot Oil Heater	Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at 3 percent oxygen reference level.	41	1.2

B9 - Gas Turbine Generator Turbine Driver	Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at 15 percent oxygen reference level.	30	19
B10 - Gas Turbine Generator Turbine Driver		30	19

B5 Contaminants must be released to the atmosphere from a release point at a height and a flow rate not less than the corresponding height and velocity stated for that release point in Schedule B, Table 1 - Contaminant Release Points.

B6 The minimum velocity limits specified in Schedule B, Table 1 - Contaminant Release Points apply during normal operating conditions.

B7 Contaminants must not be released to the atmosphere from a release point at a mass emission rate/concentration, as measured at a monitoring point, in excess of that stated in Schedule B, Table 2 - Contaminant Release Limits to Air.

Schedule B – Table 2: Contaminant Release Limits to Air

Monitoring location	Contaminant	Emission limits per stack	Frequency of monitoring
A1 – Methane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	All stacks must be monitored within 3 months of commissioning Train 1. Thereafter, at least one Methane Compressor Driver stack must be monitored annually on a rotational basis.
A2 - Methane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	
A3 - Ethylene Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	All stacks must be monitored within 3 months of commissioning Train 1. Thereafter, at least one Ethylene Compressor Driver stack must be monitored annually on a rotational basis.
A4 - Ethylene Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	
A5 - Propane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	All stacks must be monitored within 3 months of commissioning Train 1. Thereafter, at least one Propane Compressor Driver stack must be monitored annually on a rotational basis.
A6 - Propane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	

A8 – Hot Oil Heater	Oxides of Nitrogen	350mg/Nm^3(dry) @3%O_2 & 0.95 grams/second	The Hot Oil Heater must be monitored within 3 months of commissioning Train 1 and annually thereafter.
A9 – Gas Turbine Generator Turbine Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 1.74 grams/second	All stacks must be monitored within 3 months of commissioning Train 1. Thereafter, at least one Gas Turbine Generator Turbine Driver stack must be monitored annually on a rotational basis.
A10 - Gas Turbine Generator Turbine Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 1.74 grams/second	
A11 - Gas Turbine Generator Turbine Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 1.74 grams/second	
A12 - Gas Turbine Generator Turbine Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 1.74 grams/second	
B1 - Methane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	All stacks must be monitored within 3 months of commissioning Train 2. Thereafter, at least one Methane Compressor Driver stack must be monitored annually on a rotational basis.
B2 - Methane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	
B3 - Ethylene Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	All stacks must be monitored within 3 months of commissioning Train 2. Thereafter, at least one Ethylene Compressor Driver stack must be monitored annually on a rotational basis.
B4 - Ethylene Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	
B5 - Propane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	All stacks must be monitored within 3 months of commissioning Train 2. Thereafter, at least one Propane Compressor Driver stack must be monitored annually on a rotational basis.
B6 - Propane Compressor Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 3.6 grams/second	
B8 – Hot Oil Heater	Oxides of Nitrogen	350mg/Nm^3(dry) @3%O_2 & 0.95 grams/second	The Hot Oil Heater must be monitored within 3 months of commissioning Train 2 and annually thereafter.

B9 - Gas Turbine Generator Turbine Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 1.74 grams/second	All stacks must be monitored within 3 months of commissioning Train 2. Thereafter, at least one Gas Turbine Generator Turbine Driver stack must be monitored annually on a rotational basis.
B10 - Gas Turbine Generator Turbine Driver	Oxides of Nitrogen	51mg/Nm^3(dry) @15%O_2 & 1.74 grams/second	

B8 Contaminants must be monitored not less frequently than specified in Schedule B, Table 2 - Contaminant Release Limits to Air.

B9 Monitoring of any releases to the atmosphere required by a condition of this approval must be carried out in accordance with the following requirements:

1. Monitoring provisions for the release points listed in Schedule B, Table 1 – Contaminant Release Points must comply with the Australian Standard AS 4323.1 - 1995 'Stationary source emissions, Method 1: Selection of sampling positions' (or more recent editions).
2. The following tests must be performed for each determination specified in Schedule B, Table 2 - Contaminant Release Limits to Air:
   i. gas velocity and volume flow rate
   ii. temperature
   iii. water vapour concentration (moisture content).
3. Samples must be taken during normal operating conditions.
4. During the sampling period the following additional information must be gathered:
   i. production rate at the time of sampling
   ii. raw materials and fuel used
   iii. number of plant or equipment and operating units operating;
   iv. reference to the actual test methods and accuracy of the methods.

B10 All release points referred to in Schedule B, Table 1 - Contaminant Release Points must be conspicuously marked with the corresponding release point number.

B11 The emission limits per stack specified in Schedule B, Table 2 – Contaminant Release Limits to Air apply during normal operating conditions.

B12 Notwithstanding Condition (B7) and Schedule B, Table 2 - Contaminant Release Limits to Air, the following emission limit for Oxides of Nitrogen is authorised to apply to any two Gas Turbine Generator Turbine Drivers (monitoring locations A9 – A12, B9 & B10) at any one time until, and including, 20 July 2021:
(a) 73mg/Nm3 (dry) @15%O2; and
(b) 2.17 grams/second.

B13 Until, and including, 20 July 2021 the total maximum LNG Facility air emission limit for Oxides of Nitrogen must not exceed 55.54 grams/sec @ 15%O2.

B14 During the period until, and including, 20 July 2021 each Gas Turbine Generator Turbine Driver operating under Condition (B12) must:
(a) have air emissions monitoring undertaken at least once; and
(b) air emissions monitoring must be undertaken in accordance with Condition (B9).

FLARE CONDITIONS

B15 The flare must be equipped with a flare tip design to provide good mixing with air, flame stability and achieve a minimum Volatile Organic Compound (VOC) removal efficiency of 98 per cent under varied gas flow rate and meteorological conditions and meet the best practice design standards (e.g. NSW EPA: Protection of the Environmental Operations (Clean Air) Amendment (Industrial and Commercial Activities) Regulation 2005, or the US EPA Code of Federal Regulations: 40 CFR 60.18 and 40 CFR 63.11).

B16 The flare must be equipped with a continuously burning pilot or other automatic ignition system that assures gas ignition and provides immediate notification to appropriate personnel when the ignition system ceases to function.

B17 The flare must be designed to handle large fluctuations in both the volume and the chemical content of gases.

B18 Visible smoke and particulate emissions must not be permitted for more than five minutes in any two hour period during normal operating conditions.

FUGITIVE EMISSIONS

B19 The holder of this environmental authority must ensure that all reasonable and practicable measures are taken in the design and operation of the plant to minimise fugitive VOC emissions. Reasonable and practicable measures include but are not limited to:
(a) implementation of a monitoring program to regularly leak test all units/components including pumps, piping and controls, vessels and tanks; and
(b) operating, maintenance and management practices to be implemented to mitigate fugitive VOC sources.

B20 Flaring events, except for those resulting from an emergency, occurring outside of normal operating conditions must not exceed:
(a) 7 hours per annum during daylight hours; and
(b) 14 times per annum during daylight hours; and
(c) 30 minutes of continuous visible smoke during daylight hours except as authorised under condition (B21)

B21 Notwithstanding condition (B20)(c), flaring events must not exceed 90 minutes of continuous visible smoke at any one time in the following circumstances:

(a) A flaring event associated with a plant maintenance activity that was planned to be completed outside of daylight hours, but was required to be undertaken during daylight hours to ensure the safe operation of the plant; or
(b) A flaring event associated with a plant maintenance activity that was not planned and was required to be undertaken during daylight hours to ensure the safe operation of the plant

B22 The holder of this authority must keep records of each flaring event to determine compliance with condition (B20) and (B21) and provide these records to the administering authority on request. Records must include, but not be limited to:
(a) The duration of each flaring event; and
(b) The operational planning that was implemented to minimise flaring; and
(c) The operational controls that were implemented during flaring; and
(d) If the flaring event exceeds 30 minutes, the circumstance under condition (B21) which caused this exceedance.

B23 The holder of this environmental authority must monitor and record all flaring events in accordance with Schedule B, Table 3 – Recording during flaring events and Condition (I3)

Schedule B, Table 3 – Recording during flaring events

Emissions Point Reference	Parameter	Units	Frequency	Method	Commencement of Recording
Process Flares (Wet and Dry Gas) and Marine Flares	Visual recording	Seconds	Continuously during a flaring event	Digital Video Recorder	6 April 2021
	Temperature	^{o}C	Continuously during a flaring event	CEMS	
	Flare gas flow rate	Sm^3/h	Continuously during a flaring event	CEMS	
	Flare gas composition	Mol%	Continuously during a flaring event	CEMS	By 6 April 2022

Sm^3/h = standard cubic meters per hour (temperature 15°C, pressure of 101.325kPaa)
Mol% = Molar %

B24 The ducting and extraction systems that transfer effluent gases from one location to another must be constructed, operated and maintained so as to minimise any leakage of VOCs and vapours to the atmosphere occurring from these sources.

B25 In the event of emissions of contaminants occurring from industrial plant or ducting systems that transfer effluent gases from one location to another, the fault or omission that resulted in that emission must be corrected as soon as practicable.

FUEL BURNING

B26 This authority only permits the burning of natural gas, methane gas or diesel fuel in the fuel burning equipment under normal operating conditions at the rate of the design capacity of the equipment.

B27 The sulphur content of fuel burned in the power generators must not exceed 0.5 percent by weight.

GREENHOUSE GAS EMISSIONS

B28 The holder of this authority must develop and implement a greenhouse gas reduction strategy for the LNG Facility. The strategy must include, but not limited to, the company's policy on greenhouse gas emissions, an energy efficiency program, a continuous improvement program, better control systems and a CO2 recovery plan.

Schedule C – WATER MANAGEMENT

GENERAL

C1 Contaminants that will, or have the potential to cause environmental harm, must not be released directly or indirectly to any waters except as permitted under the conditions of this environmental authority.

C2 The release of contaminants directly or indirectly to waters must not produce any slick or other visible or odorous evidence of oil, grease or petrochemicals nor contain visible floating oil, grease, scum or litter.

PERMITTED CONTAMINANT RELEASE AND DISCHARGE POINT(S)

C3 The release of contaminants directly or indirectly to waters must only occur from the release points specified in Schedule C – Table 1: Contaminant Release Points.

Schedule C – Table 1: Contaminant Release Points

Release Point	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Contaminant Source, Location and Description of Release Point	Monitoring Point	Receiving Waters Description
WW1	N7368573.212	E316794.358	Wastewater effluent	S9 – Prior to outlet of diffuser discharge point WW1	Port Curtis
WW2	N7367192	E318191	Construction Outfall	S3 – Outlet of Sewage Treatment Plant prior to release to outfall S4 – Outlet of Reverse Osmosis Plant prior to release to outfall	Port Curtis
SW1 (MOF)	N7367745	E317917	Stormwater		Port Curtis
SW2 (Sedimentation Basin 2)	N7369034	E317596	Stormwater Firewater system testing water Treated waste water effluent	SW2 – Sedimentation Basin 2	Port Curtis

Release Point	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Contaminant Source, Location and Description of Release Point	Monitoring Point	Receiving Waters Description
SW3 (Sedimentation Basin 3)	N7368738	E318308	Stormwater Firewater system testing water Turbine Inlet Air Chilling condensate water	SW 3– Sedimentation Basin 3	Port Curtis
SW4 (Diversion Ditch Outfall – East)	N7368776	E318563	Stormwater		Port Curtis
SW5 (Diversion Ditch Outfall and Sedimentation Basin 1)	N7368844	E317060	Stormwater Firewater system testing water		Port Curtis
SW6 (MOF)	N7367490	E318166	Stormwater		Port Curtis
SW7 (Heavy haul road)	N7368365	E318760	Stormwater		Port Curtis
SW 8 (Sedimentation Basin 1)	N7369052	E317117	Stormwater Firewater system testing water	SW 8– Sedimentation Basin 1	Port Curtis
SW 9 (MOF)	N7367621	E317985	Stormwater		Port Curtis
PLF Loading Platform	N7368542 N7368560 N7368584 N7368602	E316824 E316793 E316852 E316825	Firewater system testing	-	Port Curtis
SW10 (PLF)	N7368569	E316798	Spill containment bund Stormwater	SW10 – PLF LNG Spill Containment Bund Release Point	Port Curtis

Release Point	Latitude or northing (GDA94)	Longitude or easting (GDA94)	Contaminant Source, Location and Description of Release Point	Monitoring Point	Receiving Waters Description
Material offloading facility (MOF) and product loading facility (PLF) MOF	As depicted in depicted in Appendix 2, Figure 4	As depicted in depicted in Appendix 2, Figure 4	Maintenance activities	-	Port Curtis

Release points are accurate to +/- 25m

C4 When carrying out maintenance activities at the Material Offloading Facility (MOF) and the Product Loading Facility (PLF) as authorised in Schedule C – Table 1, the holder of this environmental authority must ensure that any direct or indirect release of contaminants to waters does not cause environmental harm.

C5 A management plan must be developed and implemented to ensure that maintenance activities at the PLF and MOF authorised in Schedule C – Table 1 do not result in environmental harm.

C6 At least twenty-four (24) hours prior to carrying out maintenance activities on the PLF and MOF authorised in Schedule C – Table 1, the holder of this environmental authority must notify the administering authority of its intention to carry out the activity and what the expected duration will be for carrying out the activity.

C7 The release point WW1 must be submerged such that the top of the outfall pipe is at least 10 metres below Low Water Datum.

C8 All contaminants from discharge location WW1 must be released through a proper and effective diffuser to achieve a minimum initial dilution of 91:1.

C9 Despite Condition (C3), the total quantity of waste water effluent released via WW1 to waters on any one day during Stage 3 - operation works must not exceed 0.24 megalitres.

C10 The daily volume and daily average flow rate of waste water effluent released from the premises via WW1 must be determined or estimated by an appropriate method with an accuracy of +/- 5 per cent, and records kept of such determinations.

C11 The waste water effluent released via the diffuser discharge point WW1 must not exceed the release limits specified in Schedule C, Table 2: Quality Characteristic Limits WW1 Waste Water Effluent when measured at the monitoring point S9 described as the Discharge Monitoring Point (N

7369052, E 317270), refer plan Appendix 2 – Figure 1: GLNG Project Simplified Waste Water Schematic.

Schedule C – Table 2: Quality Characteristic Limits WW1 Waste Water Effluent

Monitoring Point	Quality Characteristics	Release Limit	Limit Type	Minimum monitoring frequency
S9[1]	Dissolved Oxygen	4.0 mg/L	Minimum	Weekly Grab Sample
	Total Residual Hydrocarbons C10 – C36	10 mg/L	Maximum	
	pH	6.0 to 8.5	Range	

Notes: 1 Monitoring point S9 as the Discharge Monitoring Point (N7369052, E317270), shown in Appendix 2 – Figure 1: GLNG Project Simplified Wastewater Schematic.

MONITORING

C12 Monitoring of contaminants released to Port Curtis must be undertaken for the quality characteristics and parameters, at the monitoring point(s), and at the frequencies specified in Schedule C, Table 2: Quality Characteristic Limits WW1 Waste Water Effluent.

C13 The release of contaminants from the stormwater discharge points to waters must be monitored at the locations and for each quality characteristic and at the frequency specified in Schedule C – Table 3: Stormwater Release Limits

Schedule C – Table 3: Stormwater Release Limits

Release Point	Monitoring Point	Quality Characteristic	Limit	Limit Type	Minimum Monitoring Frequency
SW2, SW3, SW8	SW2, SW3, SW8	pH	6 - 8.5	Range Limit applies up to the design event of 42.1 mm rainfall event over a 5-day period	Prior to discharge.
		Turbidity (NTU)	31 NTU	Maximum Limit applies up to the design event of 42.1 mm rainfall event over a 5-day period	
		Total Hydrocarbons	No Visible Sheen	Maximum	

		Dissolved Oxygen	4 mg/L (minimum)	Minimum
SW10	SW10	Total Hydrocarbons	No Visible Sheen	Visual Inspection

C14 The release of contaminants from the stormwater discharge points to waters must not exceed the release limits stated in Schedule C – Table 3: Stormwater Release Limits for each quality characteristic.

C15 The period of active discharge from the release points authorised by Schedule C, Table 3: Stormwater Release Limits must be recorded.

DIFFUSER VALIDATION

C16 Provide to the administering authority a monitoring plan for the diffuser modelling validation within 40 business days from the issue of this environmental authority. The monitoring plan must have the following objectives:

a. To validate all modelling and investigations related to the diffuser; and
b. To confirm that expected dilutions predicted in design of the diffuser under specified flow conditions are met as a minimum.

C17 The Monitoring Plan (Diffuser Validation), required by condition (C16), must include (but not be limited to) the following:

a. A description of the diffuser as installed
b. A list of the environmental values to be protected within and adjacent to the diffuser
c. Sampling of reference sites to determine the background concentration of relevant water quality parameters
d. Investigate employing other approaches (e.g. dye-based diffuser validation techniques) where electrical conductivity-based methods are inconclusive
e. The methods for the collection and analysis of samples (including the Quality Assurance and Quality Control protocols adopted)
f. The methods of analysing the data and responding to the results
g. Monitoring must be done by a competent person(s) in accordance with methods prescribed in the latest edition of the Department of Environment and Heritage Protection Water Quality Sampling Manual; and carried out on representative samples.

C18 The holder of the environmental authority must provide to the administering authority a Diffuser Validation Report, not more than 20 business days after receipt of the results obtained from the Monitoring Plan (Diffuser Validation). The report must include:

a. The outcome of the monitoring including the methodology, findings and recommendations of the Monitoring Plan (Diffuser Validation)
b. A determination on the validation of modelling and investigations undertaken

C19 The finalised Monitoring Plan (Diffuser Validation), required by Condition (C16) must not be changed without prior written consent from the administering authority.

RECEIVING ENVIRONMENT MONITORING PROGRAM (REMP)

C20 A REMP must be developed and implemented to monitor and record the effects of the release of contaminants on the receiving environment whilst contaminants are being discharged, with the aims of identifying and describing the extent of any adverse impacts to local environmental values, and monitoring any changes in the receiving water. For the purposes of the REMP the receiving environment is defined as the waters of the China Bay and connected waterways within Port Curtis (e.g. Xkm) downstream of the release. (i.e. Port Curtis) that addresses at least the following:

(a) Description of potentially affected receiving waters including key communities and background water quality characteristics based on accurate and reliable monitoring data that takes into consideration any temporal variation (e.g. seasonality); and
(b) Description of applicable environmental values and water quality objectives to be achieved (i.e. as scheduled pursuant to the Environmental Protection (Water and Wetland Biodiversity) Policy 2019 (QLD); and
(c) Any relevant reports prepared by other governmental or professional research organisations that relate to the receiving environment within which the REMP is proposed; and
(d) Water quality targets within the receiving environment to be achieved, and clarification of contaminant concentrations or levels indicating adverse environmental impacts during the REMP.
(e) Monitoring for any potential adverse environmental impacts caused by the release of wastewater;
(f) Monitoring performance of the diffuser to ensure adequate mixing and dilution;
(g) Sampling to determine the extent of the near-field mixing zone at various tidal phases (including the vertical profile) to validate modelling estimates;
(h) Monitoring of selected toxicants (including ammonia nitrogen, total and free chlorine, dissolved metals and metalloids likely to be present in intake water) to assess the extent of the compliance of concentrations with water quality objectives and the extent of the toxicity zone,
(i) Monitoring of selected physical chemical parameters (including turbidity, pH, dissolved oxygen saturation, conductivity, temperature) that would assist in quantifying the mixing and dilution of the diffusers
(j) The locations of monitoring points including monitoring transects away from the outfall of the designated release point as well as control locations;
(k) The proposed sampling depths;
(l) The frequency or scheduling of sampling and analysis;
(m) Any historical datasets to be relied upon;
(n) Description of the statistical basis on which conclusions are drawn, and
(o) Any spatial and temporal controls to exclude potential confounding factors.

C21 The REMP must be maintained by a person possessing appropriate qualifications and experience in the field of hydrology and surface water monitoring program design.

C22 The REMP must be prepared and submitted in writing to the administering authority within three (3) months prior to discharge occurring.

C23 A report outlining the findings of the REMP, required by Condition (C20), must be prepared and submitted in writing to the administering authority every 12 months, unless no releases of waste water effluent at WW1 or WW2 occurred during the preceding 12 months. This should include an assessment of background water quality, any assimilative capacity for those contaminants monitored and the suitability of current discharge limits to protect environmental values.

CONTAMINANT RELEASE TO GROUNDWATER

C24 There must be no release of contaminants to groundwater

STORMWATER MANAGEMENT PLAN

C25 A Stormwater Management Plan must be prepared and implemented for the site prior to construction and operation. The Stormwater Management Plan must address at least the following:

(a) prevention of incident storm water and storm water run-off from contacting wastes or contaminants;
(b) diversion of upstream run-off away from areas where it may be contaminated by bulk products being loaded or unloaded, wastes, contaminants or other materials; and
(c) collection, treatment and disposal of all contaminated storm water run-off.

C26 The Stormwater Management Plan required by Condition C25 must be consistent with the requirements of the environmental authority and include, but not be limited to:

(a) Environmental Values
(b) Impacts
(c) Performance Criteria and Objectives
(d) Mitigation Strategies
(e) Monitoring
(f) Responsibilities
(g) Scheduling
(h) Reporting and Auditing
(i) Corrective Actions
(j) Plans

C27 Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering the LNG facility footprint.

Schedule D – NOISE MANAGEMENT

D1 Noise from the LNG plant activities must not cause environmental nuisance at any sensitive place or commercial place.

D2 When requested by the administering authority, noise monitoring must be undertaken within a reasonable and practicable timeframe nominated by the administering authority to investigate any complaint (which is neither frivolous nor vexatious nor based on mistaken belief in the opinion of the authorised officer) of environmental nuisance at any sensitive place or commercial place, and the results must be notified within 14 days to the administering authority following completion of monitoring.

D3 If the authority holder can provide evidence through monitoring that the limits defined in Schedule D – Table 1: Noise Limits for the LNG Plant at Sensitive Receptors are not being exceeded then the holder is not in breach of Condition (D1). Monitoring and subsequent analysis must provide:

a) determination of LAeq,15 mins for the LNG plant noise at the noise sensitive place or commercial place;
b) narrow band analysis and the noise 'signature' of the LNG plant to determine the contribution from the LNG plant to the total noise level at the noise sensitive place or commercial place;
c) the level and frequency of occurrence of impulsive or tonal noise;
d) taking measurements of the low frequency noise below 200 Hz;
e) atmospheric conditions including temperature, wind speed and direction; and
f) location, date and time or recording.

Schedule D – Table 1: Noise Limits For The LNG Plant At Sensitive Receptors

		P1 Tide and Witt Island	P2 South End Curtis Island	P3 Auckland Hill	P4 Yarwun	P5 Targanie	P6 Gladstone Marina	P7 Fishermans Rd
Operational Noise Criteria dBA LAeq								
Monday - Sunday and Public Holidays	7am – 6pm	46	38	47	46	36	50	40
	6pm – 10pm	46	37	47	45	36	47	35
	10pm – 7am	44	34	40	40	36	41	30

Notes: Sensitive receptor locations are provided in *Appendix 2 - Figure 3: Noise Monitoring Locations*. The noise levels in *Schedule D - Table 1: Noise Limits for the LNG Plant at Sensitive Receptors* apply for the day, evening and night periods since the LNG plant operates continuously on a 24-hour basis.

D4 If monitoring indicates exceedance of the limits in Schedule D – Table 1: Noise Limits for the LNG Plant at Sensitive Receptors due to the contribution from the LNG plant activities, then the holder of this authority must:

a) resolve the complaint with the use of appropriate dispute resolution techniques to the satisfaction of the administering authority; or
b) consider Best Practice Environmental Management in instigating noise abatement measures to comply with noise emission limits in Schedule D – Table 1: Noise Limits for the LNG Plant at Sensitive Receptors .

D5 The method of measurement and reporting of noise levels must comply with the latest edition of the Department of Environment and Heritage Protection's Noise Measurement Manual.

NOISE CONTROL MEASURES

D6 The authorised activities must be carried out by such reasonable and practicable means necessary to minimise the noise generated. The measures adopted must be incorporated into the relevant procedure(s) implemented under the Environmental Management Plan required by condition (A10) and must include, but not necessarily be limited to, the following noise abatement measures:

i. ensure that any equipment to be used on the site is assessed for potential noise nuisance impacts and appropriately attenuated;
ii. low frequency components at the plant including the gas turbine are to be attenuated according to Australian standards and Best Practice Environmental Management;
iii. ensure that engine cowlings and high efficiency silencers are fitted to all the engines of all plant and equipment identified as impacting on noise sensitive receptors; and
iv. where operation of reversing beepers is likely to cause environmental nuisance, taking measures to ensure mitigation of the environmental nuisance, for example by de-tuning the reversing beepers, replacing the reversing beepers with other warning devices and/or replacing reversing beepers with alternative reversing beepers which adjust their noise level output in accordance with the prevailing background noise level.

LOW FREQUENCY NOISE

D7 Notwithstanding condition (D1) and the limits specified in Schedule D Table 1: Noise Limits for the LNG Plant at Sensitive Receptors in condition (D4), emission of any noise below 200 Hz must not cause an environmental nuisance.

D8 Low frequency noise from the LNG plant is not considered to be a nuisance under condition (D7) if monitoring shows that noise emissions do not exceed the following limits:

a. 60 dB(C) measured outside the sensitive receptor, and
b. the difference between the external A-weighted and C-weighted noise levels is no greater than 20 dB; or
c. 50 dB(Z) measured inside the sensitive receptor; and
d. the difference between the internal A-weighted and Z-weighted noise levels is no greater than 15 dB.

VIBRATION AND BLASTING

D9 A Blast Management Plan must be developed in accordance with Australian Standard 2187 by a suitably qualified person prior to each blasting activity.

D10 The Blast Management Plan must include measures to minimise the likelihood of any adverse effects being caused by airblast overpressure and / or ground borne vibrations at any sensitive receptor and demonstrate current best practice environmental management.

D11 All blasting must be carried out in a proper manner by a suitably qualified person.

D12 All blasting must be carried out in accordance with the Blast Management Plan.

D13 Noise from blasting operations must not exceed an airblast overpressure level of 120 dB (linear peak) at any time, when measured at or extrapolated to any sensitive receptor.

D14 Ground-borne vibration peak particle velocity caused by blasting operations must not exceed 10 mm/s at any time, when measured at or extrapolated to any sensitive receptor.

BLAST AND VIBRATION MONITORING

D15 Monitoring and recording of the air blast overpressure and ground borne vibration of every blast must be undertaken.

D16 Blast and vibration monitoring must include but not necessarily be limited to:

a. maximum instantaneous charge;
b. location of the blast within the site (including any bench level);
c. airblast overpressure level (dB Linear Peak);
d. peak particle velocity (mm / s);
e. location, date and time of recording;
f. measurement instrumentation and procedure;
g. meteorological conditions for blast monitoring (including temperature, relative humidity, temperature gradient, cloud cover, wind speed and direction); and
h. distances from the blast site to potentially noise-affected buildings or structures.

Schedule E – WASTE MANAGEMENT

E1 A Waste Management Plan (WMP) must be developed, implemented and maintained for the authorised petroleum activities.

E2 The Waste Management Plan required by E1 must include:

a. a description of the activities that may generate waste;
b. the types and amounts of wastes generated by the activities;
c. a program for reusing, recycling or disposing of all wastes;
d. how the waste will be dealt with in accordance with the waste management hierarchy, including a description of the types and amounts of waste that will be dealt with under each of the waste management practices in the waste management hierarchy (i.e. avoidance, reuse, recycling, energy recovery, disposal);
e. procedures for identifying and implementing opportunities to minimise the amount of waste generated, promote efficiency in the use of resources and improve the waste management practices employed;
f. procedures for dealing with accidents, spills and other incidents;
g. details of any accredited management system employed, or planned to be employed, to deal with waste;
h. how often the performance of the waste management plan will be assessed;
i. the indicators or other criteria on which the performance of the waste management plan will be assessed; and
j. staff training and induction to the waste management plan.

E3 Waste generated in the carrying out the activities must be stored, handled and transferred in a proper and efficient manner. Waste must not be released to the environment, stored, transferred or disposed contrary to any condition of this authority.

E4 The holder of this authority must ensure that all general waste produced from the conducting of the activities under this environmental authority is removed and disposed of at a facility that is permitted to accept such waste unless the waste is specifically authorised to be disposed of or used on site under this environmental authority.

E5 All regulated waste removed from the site must be removed by a person who holds a current authority to transport such waste under the provisions of the *Environmental Protection Act 1994* and sent to a facility that is permitted to accept such waste.

E6 Regulated waste is not permitted to be disposed on site unless specifically authorised by a condition of this Environmental Authority

WASTE RECORDS

E7 A record of all general waste must be kept detailing the following information:

a) date of pick of waste;
b) description of waste;
c) quantity of waste;
d) origin of the waste;
e) destination of the waste.

NOTE: Trackable wastes as listed in Schedule 11 of the *Environmental Protection Regulation 2019* (Qld) are not covered by this condition.

E8 All regulated waste removed from the site must be removed by a person who holds a current authority to transport such waste under the provisions of the Environmental Protection Act 1994 and sent to a facility that is permitted to accept such waste.

E9 Each container of regulated waste stored awaiting movement off-site must be clearly marked to identify the contents.

Schedule F – LAND MANAGEMENT

PERMITTED CONTAMINANT RELEASE AND DISCHARGE POINT(S)

F1 Contaminant(s) that will, or have the potential to cause environmental harm, must not be released directly or indirectly to any land unless otherwise authorised under this environmental authority.

F2 Any spillage of wastes, contaminants or other materials must be cleaned up as quickly as practicable. Such spillages must be cleaned up using dry methods that minimise the release of wastes, contaminants or materials to any stormwater drainage system, roadside gutter or waters.

ACID SULFATE SOILS

F3 Acid sulfate soils must be managed in accordance with the *Queensland Acid Sulfate Soil Technical Manual, Soil Management Guidelines 2002* such that contaminants are not directly or indirectly released, as a result of the activity, to any waters or the bed and banks of any waters.

F4 As soon as practicable and within 3 (three) months of cessation of authorised activities that cause any significant disturbance to land, the holder of this authority must investigate contaminated land status in accordance with *Environmental Protection Act 1994* requirements and the NEPM where land has been subject to contamination caused by activities authorised under this authority.

DISTURBANCE TO LAND – ENVIRONMENTALLY SENSITIVE AREAS

F5 A total maximum area of 188.0504 hectares of vegetation can be cleared within the boundary of PFL10, refer to plan Appendix 2 – Figure 2: LNG Facility Regional Ecosystems, comprising of:

a. a maximum cleared area of 38.0363 hectares of Endangered Regional Ecosystem 12.3.3;
b. a maximum cleared area of 42.921 hectares of Of Concern Regional Ecosystem 12.11.14;
c. a maximum cleared area of 0.6 hectares of saltpan vegetation Regional Ecosystem 12.1.2;
d. a maximum cleared area of 1.9931 hectare of mangrove shrubland Regional Ecosystem 12.1.3; and
e. a maximum 104.5 hectares of Corymbia citriodora and Eucalyptus crebra open forest Regional Ecosystem 12.11.6.

PEST AND WEED SPECIES

F6 Pest and weed species must be managed to prevent their growth and proliferation.

MANAGEMENT OF FAUNA

F7 The holder of this authority must develop and implement, within three (3) months from the date of this approval, a Fauna Management Plan that details how the holder will ensure that authorised activities are undertaken to minimise the potential risk of causing harm to fauna.

F8 The holder of this authority must minimise lighting disturbance to marine turtles by:

a. physically shielding lights and directing the lights onto work areas
b. keeping light heights as low as practicable

c. using long wave length lights instead of short wavelength lights unless required for the safe operation of the LNG Facility
d. minimising reflective surfaces
e. fitting motion detectors and light timers where practicable.

F9 A suitably qualified, licensed and experienced fauna spotter will be present during the vegetation clearing activities to relocate fauna or recover any injured fauna.

F10 The holder of this authority must ensure any protected animals injured by clearing activities under this permit are referred to an appropriate wildlife carer group or veterinarian (to be predetermined prior to clearing) and the administering authority must be notified within 24 hours of any injuries or deaths.

EROSION AND SEDIMENT CONTROL PLANS

F11 An Erosion and Sediment Control Plan must be developed and implemented for all stages of the petroleum activities and which has been certified by a Certified Professional in Sediment and Erosion Control, or a professional with appropriate experience and/or qualifications accepted by the administering authority.

F12 Erosion and sediment controls must be designed and maintained in accordance with the guideline "Best practice erosion and sediment control, International Erosion Control Association 2008" and supporting documentation as updated from time to time.

Schedule G – STORAGE AND HANDLING OF CHEMICALS, FLAMMABLE AND COMBUSTIBLE SUBSTANCES

G1 All explosives, hazardous chemicals, corrosive substances, toxic substances, gases, dangerous goods, flammable and combustible liquids (including petroleum products and associated piping and infrastructure) must be stored and handled in accordance with the relevant Australian Standard where such is available.

G2 Notwithstanding the requirements of any Australian Standard and any other relevant Australian or State legislation, any liquids stored on site that have the potential to cause environmental harm must be stored in or serviced by an effective containment system that is impervious to the materials stored and managed to prevent the release of liquids to waters or land. Where no relevant Australian Standard is available, the following must be applied:

(a) storage tanks must be bunded so that the capacity and construction of the bund is sufficient to contain at least 110 per cent of a single storage tank or 100 per cent of the largest storage tank plus 10 per cent of the second largest storage tank in multiple storage areas; and
(b) drum storages must be bunded so that the capacity and construction of the bund is sufficient to contain at least 25 per cent of the maximum design storage volume within the bund.

SPILL KIT

G3 An appropriate spill kit, personal protective equipment and relevant operator instructions/emergency procedure guides for the management of wastes and chemicals associated with the activities must be kept and maintained at the site.

SPILL KIT TRAINING

G4 Anyone operating under this approval must be trained in the use of the spill kit.

Schedule H – PETROLEUM INFRASTRUCTURE

H1 All infrastructure (including buildings, structures, petroleum equipment and plant erected and/or used for the authorised activities) but excluding the Material Offload Facility and haul road, authorised under this authority must be removed from the relevant environmental authority prior to surrender of this authority, except where agreed in writing by the administering authority and the current landowner.

H2 Prior to the commencement of decommissioning or abandonment activities, the scope of work for decommissioning or abandonment of project infrastructure shall be developed and agreed to with the administering authority.

Schedule I – MONITORING PROGRAMS

I1 The holder of this authority must:

a. develop and implement a monitoring program, within six (6) months from the date of this approval or three (3) months from commencement of construction activities, that will demonstrate compliance with the conditions in this authority
b. document the monitoring and inspections carried out under the program and any actions taken

I2 The holder of this authority must ensure that a suitably qualified, experienced and competent person(s) conducts all monitoring required by this authority.

I3 Any management or monitoring plans, systems or programs required to be developed and implemented by a condition of this authority must be reviewed for performance and amended if required every three years.

I4 An annual monitoring report must be prepared each year and presented in the format requested (including electronic) to the administering authority when requested. Information and results held by the administrating authority in relation to this approval may be used for any purpose including supply to third parties. This report shall include but not be limited to:

a. a summary of the previous twelve (12) months monitoring results obtained under any monitoring programs required under this authority and, a comparison of the previous twelve (12) months monitoring results to both this authority limits and to relevant prior results
b. an evaluation/explanation of the data from any monitoring programs
c. a summary of any record of quantities of releases required to be kept under this authority
d. a summary of the record of equipment failures or events recorded for any site under this approval
e. an outline of actions taken or proposed to minimise the environmental risk from any deficiency identified by the monitoring or recording programs.

Schedule J – COMMUNITY ISSUES

J1 When the administering authority advises the holder of a complaint alleging environmental nuisance, the holder must investigate the complaint and advise the administering authority in writing of the action proposed or undertaken in relation to the complaint.

J2 When requested by the administering authority, the holder of this authority must undertake monitoring specified by the administering authority, within a reasonable and practicable timeframe nominated by the administering authority, to investigate any complaint of environmental harm at any sensitive or commercial place.

J3 The results of the investigation (including an analysis and interpretation of the monitoring results) and abatement measures implemented must be provided to the administering authority within fourteen (14) days of completion of the investigation, or receipt of monitoring results, whichever is the latter.

J4 If monitoring in accordance with Condition (J2), indicates that emissions exceed the limits set by this authority or are causing environmental nuisance, then the holder of this authority must:

a. address the complaint including the use of appropriate dispute resolution if required; and/or
b. as soon as practicable implement abatement or attenuation measures so that noise, dust, particulate or odour emissions from the authorised activities do not result in further environmental nuisance.

J5 Maintain a record of complaints and incidents causing environmental harm, and actions taken in response to the complaint or incident.

J6 The holder of this authority must record the following details for all complaints received and provide this information to the administering authority on request:

a. name, address and contact number for complainant;
b. time and date of complaint
c. reasons for the complaint
d. investigations undertaken
e. conclusions formed
f. actions taken to resolve complaint
g. any abatement measures implemented
h. person responsible for resolving the complaint.

Schedule K – NOTIFICATION PROCEDURES

K1 The holder of this environmental authority must telephone the Department of Environment and Heritage Protection's Pollution Hotline (telephone: 1300 130 372) and any affected landholder, occupier or their nominated representative as soon as reasonably practicable, but within 48 hours after becoming aware of:

a. unauthorised releases of any volume of contaminants to water;
b. unauthorised releases of volumes of contaminants to land greater than 200L of hydrocarbons; or
c. any other release not authorised under this environmental authority which has caused, or has the potential to cause serious or material environmental harm.

K2 The notification of emergencies or incidents as required by condition (K1) must include but not be limited to the following information:

a. the environmental authority number and name of the holder;
b. the tenure type and number where the emergency or incident occurred;
c. the name and telephone number of the designated contact person;
d. the location of the emergency or incident (GDA94);
e. the date and time that the emergency or incident occurred;
f. the date and time the holder of this environmental authority became aware of the emergency or incident;
g. details of the nature of the event and the circumstances in which it occurred;
h. the estimated quantity and type of any contaminants involved in the incident;
i. the actual or potential suspected cause of the emergency or incident;
j. a description of the land use at the site of the emergency or incident (e.g. grazing, pasture, forest etc.) and / or the name of any relevant waters and other environmentally sensitive features;
k. a description of the possible impacts from the emergency or incident;
l. a description of whether stock and / or wildlife were actually or potentially exposed to any contaminants released and measures taken to prevent access for the duration of the emergency or incident;
m. any sampling conducted or proposed, relevant to the emergency or incident;
n. landholder details and details of landholder consultation;
o. immediate actions taken to control the impacts of the emergency or incident and how environmental harm was mitigated at the time of the emergency or incident; and
p. whether further examination / root cause analysis is required and if so, the expected date by when this examination will be completed and reported to the administering authority.

K3 Within 10 business days following the initial notification, unless a longer time is agreed to by the administering authority, a written report must be provided to the administering authority, including the following (where relevant to the emergency or incident):

a. the root cause of the emergency or incident;

b. the confirmed quantities and types of any contaminants involved in the incident;
c. results and interpretation of any analysis of samples taken at the time of the emergency or incident (including the analysis results of any impact monitoring);
d. a final assessment of the impacts from the emergency or incident including any actual or potential environmental harm that has occurred or may occur in the longer term as a result of the release;
e. the success or otherwise of actions taken at the time of the incident to prevent or minimise environmental harm;
f. results and current status of landholder consultation, including commitment to resolve any outstanding issues / concerns; and
g. actions and / or procedural changes to prevent a recurrence of the emergency or incident

Appendix 1 – Definitions

Words and phrases used throughout this environmental authority are defined below except where identified in the *Environmental Protection Act 1994* or its Regulations and Environmental Protection Policies. Where a word or term is not defined, the ordinary English meaning applies, and regard should be given to the Macquarie Dictionary.

Word or Phrase	Definition
"background noise level"	means the sound pressure level, measured in the absence of the noise under investigation, as the L A90,T being the A-weighted sound pressure level exceeded for 90 percent of the measurement time period T of not less than 15 minutes, using Fast response.
"bed and banks"	for a watercourse or wetland means land over which the water of the watercourse or wetland normally flows or that is normally covered by the water, whether permanently or intermittently; but does not include land adjoining or adjacent to the bed or banks that is from time to time covered by floodwater.
"brine"	means either saline water with a total dissolved solid concentration greater than 40 000mg/l or CSG water after it has been concentrated through water treatment processes and/or evaporation.
"bund or bunded"	in relation to spill containment systems for fabricated or manufactured tanks or containers designed to a recognised standard means an embankment or wall of brick, stone, concrete or other impervious material which may form part or all of the perimeter of a compound and provides a barrier to retain liquid. Since the bund is the main part of a spill containment system, the whole system (or bunded area) is sometimes colloquially referred to within industry as the bund. The bund is designed to contain spillages and leaks from liquids used, stored or processed above ground and to facilitate clean-up operations. As well as being used to prevent pollution of the receiving environment, bunds are also used for fire protection, product recovery and process isolation.
"category A ESA"	means any area listed in Schedule 19 of the *Environmental Protection Regulation 2019* (Qld).
"category B ESA"	means any area listed in Schedule 19 of the *Environmental Protection Regulation 2019* (Qld).
"category C ESA"	means any of the following areas: • Nature Refuges as defined under the Nature Conservation Act 1992; • Koala habitat areas as defined under *the Nature Conservation (Koala) Conservation Plan 2006* (Qld); • State Forests or Timber Reserves as defined under the Forestry Act 1959; • Regional parks (previously known as resource reserves) under the *Nature Conservation Act 1992* (Qld). • An area validated as 'essential habitat' from ground-truthing surveys in accordance with the *Vegetation Management Act 1999* (Qld) for a species of wildlife listed as endangered or vulnerable under the *Nature Conservation Act 1992* (Qld).

Word or Phrase	Definition
	'Of concern regional ecosystems' that are remnant vegetation and identified in the database called 'RE description database' containing regional ecosystem numbers and descriptions.
"CEMS"	means continuous emissions monitoring system. This includes a virtual continuous emissions monitoring system, which is a method used to determine flare gas composition by utilising the existing monitoring data available for gas temperature and pressure and the use of engineering calculations to determine the flare gas composition. The calculation methodology must be adopted from *ISA- 75.01.01-2007 Flow Equations for Sizing Control Valves.*
"clearing"	means: in relation to grass, scrub or bush—the removal of vegetation by disturbing root systems and exposing underlying soil (including burning), but does not include— • the flattening or compaction of vegetation by vehicles if the vegetation remains living; or • the slashing or mowing of vegetation to facilitate access tracks; or • the clearing of noxious or introduced plant species; and • in relation to trees—cutting down, ringbarking, pushing over, poisoning or destroying in any way.
"commercial place"	means a work place used as an office or for business or commercial purposes, which is not part of the petroleum activities and does not include employees accommodation or public roads.
"construction"	means: • in relation to a dam includes building a new dam and modifying or lifting an existing dam; and • in relation to the LNG plant the period when the construction of the LNG plant takes place on Curtis Island and during commissioning.
"daylight hours"	means those between sunrise and sunset times as shown on the Australian Government Geoscience Australia webpage < http://www.ga.gov.au/geodesy/astro/sunrise.jsp>.
"emergency"	refer to *Environmental Protection Act 1994.*
"fill"	means any kind of material in solid form (whether or not naturally occurring) capable of being deposited at a place but does not include material that forms a part of, or is associated with, a structure constructed in a watercourse, wetland or spring including a bridge, road, causeway, pipeline, rock revetment, drain outlet works, erosion prevention structure or fence.

Word or Phrase	Definition
"firewater system testing water"	means potable water used for testing of the firewater system.
"flaring event"	means an event where flammable gas is combusted through a flare and produces visible smoke either (i) continuously for more than 5 minutes or (ii) multiple instances of visible smoke occurring consecutively with a total duration of more than 5 minutes, provided that the consecutive instances of visible smoke occur due to the same underlying cause, discharges through the same valve or flare source and occurs within a two-hour period.
"flowable substance"	means matter or a mixture of materials which can flow under any conditions potentially affecting that substance. Constituents of a flowable substance can include water, other liquids fluids or solids, or a mixture that includes water and any other liquids fluids or solids either in solution or suspension.
"foreseeable future'	means the period used for assessing the total probability of an event occurring. Permanent structures and ecological sustainability should be expected to still exist at the end of a 150 year foreseeable future with an acceptably low probability of failure before that time.
"high bank"	means the defining terrace or bank or, if no bank is present, the point on the active floodplain, which confines the average annual peak flows in a watercourse.
"highly erodible soils"	means very unstable soils that are generally described as Sodosols with hard – setting, fine sandy loam to silty clay loam surfaces (solodics, solodised solonetz and solonetz) or soils with a dispersible layer located less than 25cm deep or soils less than 25cm deep.
"impulsive sound"	means sound characterised by brief excursions of sound pressure (acoustic impulses) that significantly exceed the background sound pressure. The duration of a single impulsive sound is usually less than one second.
"infrastructure"	means water storage dams, roads and tracks, equipment, buildings and other structures built for the purpose and duration of the conduct of the petroleum activities, but does not include other facilities required for the long term management of the impact of those activities or the protection of potential resources. Such other facilities include dams other than water storage dams (e.g. evaporation dams), pipelines and assets, that have been decommissioned, rehabilitated, and lawfully recognised as being subject to subsequent transfer with ownership of the land.
"lake"	means: • a lagoon, swamp or other natural collection of water, whether permanent or intermittent; and

Word or Phrase	Definition
	• the bed and banks and any other element confining or containing the water.
"leachate"	means a liquid that has passed through or emerged from, or is likely to have passed through or emerged from, a material stored, processed or disposed of on site which contains soluble, suspended or miscible contaminants likely to have been derived from the said material.
"mg/L"	means milligrams per litre.
"normal operating conditions"	means the ongoing operation of the LNG plant, excluding start-up, shut-down, maintenance, upset conditions, an emergency and LNG ship management.
"operation"	means the ongoing operation of the LNG plant following the commissioning period.
"permanent infrastructure"	includes any infrastructure (roads, tracks, bridges, culverts, dams, bores, buildings, fixed machinery, hardstand areas, airstrips, helipads, pipelines etc), which is to be left by agreement with the landowner.
"pest"	means species: • declared under the Land Protection (Pest and Stock route Management) Act 2002; • declared under Local Government model local laws; and • which may become invasive in the future.
"plant maintenance activity/ies"	means the maintenance shutdowns (and subsequent start-ups) where equipment at the plant is inspected and, if needed, repaired or replaced to ensure the ongoing safe operation of the plant.
"rehabilitation"	means the process of reshaping and revegetating land to restore it to a stable landform and in accordance with the acceptance criteria set out in this environmental authority and, where relevant, includes remediation of contaminated land.
"Ringelmann number"	means a visually comparative scale used to define levels of opacity, where clear is 0, black is 5 and 1 through 4 are increasing levels of grey as used in describing smoke from combustion of hydrocarbons.
"sensitive place"	means the following, except those within tenure PFL10: a dwelling (including residential allotment, mobile home or caravan park, residential marina or other residential premises, motel, hotel or hostel); or a library, childcare centre, kindergarten, school, university or other educational institution; a medical centre, surgery or hospital; or a protected area; or a public park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment; or a work place used as an office or for business or commercial purposes, which is not part of

Word or Phrase	Definition
	the petroleum activity(ies) and does not include employees accommodation or public roads; or for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2019.
"sensitive receptor"	is defined in Schedule 2 of the Environmental Protection (Noise) Policy 2019, and means an area or place where noise is measured.
"significantly disturbed land or significant disturbance to land"	means disturbance to land as defined in section 28 of the Environmental Protection Regulation 2008.
"site"	means the petroleum authority(ies) to which the environmental authority relates.
"specified relevant activity"	means an environmentally relevant activity that, but for being a resource activity, would otherwise be an environmentally relevant activity under section 18 of the Environmental Protection Act 1994.
"spring"	means the land to which water rises naturally from below the ground and the land over which the water then flows.
"stable"	in relation to land, means landform dimensions are or will be stable within tolerable limits now and in the foreseeable future. Stability includes consideration of geotechnical stability, settlement and consolidation allowances, bearing capacity (trafficability), erosion resistance and geochemical stability with respect to seepage, leachate and related contaminant generation.
"stage 3 - operation works"	means the ongoing operation of LNG facility following completion of stage 2 – construction works.
"suitably qualified person"	means a person who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.
"third party auditor"	means a suitably qualified person who is either a certified third party auditor or an internal auditor employed by the holder of the environmental authority and the person is independent of the day to day management and operation of activities covered by this environmental authority.
"tolerable limits"	means a range of parameters regarded as being sufficient to meet the objective of protecting relevant environmental values. For example, a range of settlement for a tailings capping, rather than a single value, could still meet the objective of draining the cap quickly, preventing damage and limiting infiltration and percolation.
"visible smoke"	means a visible suspension of carbon or other particles in air measured by a Ringelmann number greater than 2.
"waters"	includes all or any part of a creek, river, stream, lake, lagoon, dam, swamp, wetland, spring, unconfined surface water, unconfined water in natural or

Word or Phrase	Definition
	artificial watercourses, bed and bank of any waters, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and underground water.
"watercourse"	means a river, creek or stream in which water flows permanently or intermittently: • in a natural channel, whether artificially improved or not; or • in an artificial channel that has changed the course of the watercourse; • but, in any case, only: • unless a regulation under paragraph (d), (e) or (f) declares otherwise- at every place upstream of the point (point A) to which the high spring tide ordinarily flows and reflows, whether due to a natural cause or to an artificial barrier; or • if a regulation has declared an upstream limit for the watercourse-the part of the river, creek or stream between the upstream limit and point A; or • if a regulation has declared a downstream limit for the watercourse-the part of the river, creek or stream upstream of the limit; or • if a regulation has declared an upstream and a downstream limit for the watercourse-the part of the river, creek or stream between the upstream and the downstream limits. • Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.
"wetland"	means an area shown as a wetland on a 'Map of referable wetlands', a document approved by the chief executive (environment). A map of referable wetlands can be viewed at www.ehp.qld.gov.au

Appendix 2 – Figures

Figure 1 – *GLNG Project Simplified Waste Water Schematic*

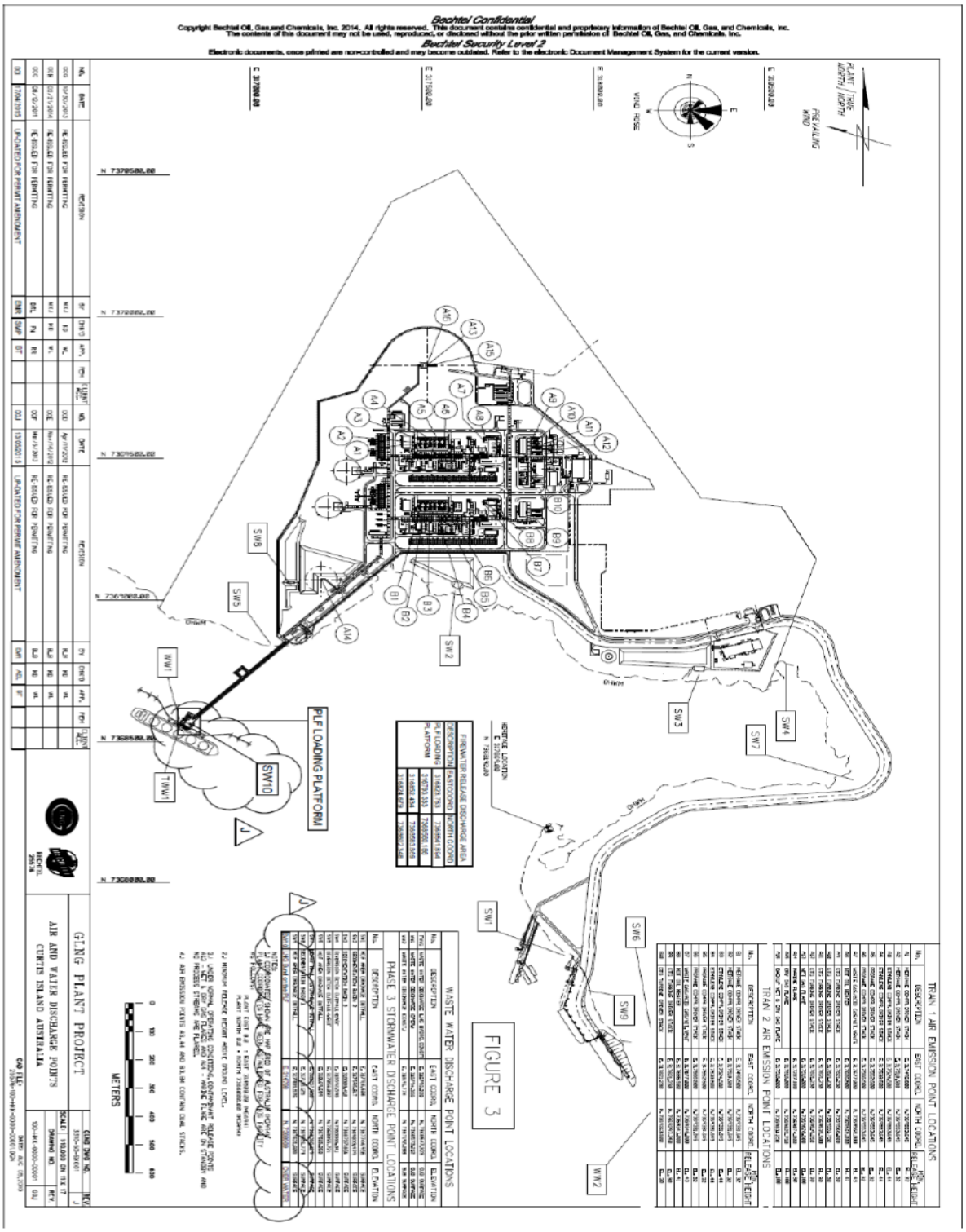

Figure 2 – LNG Facility Regional Ecosystems

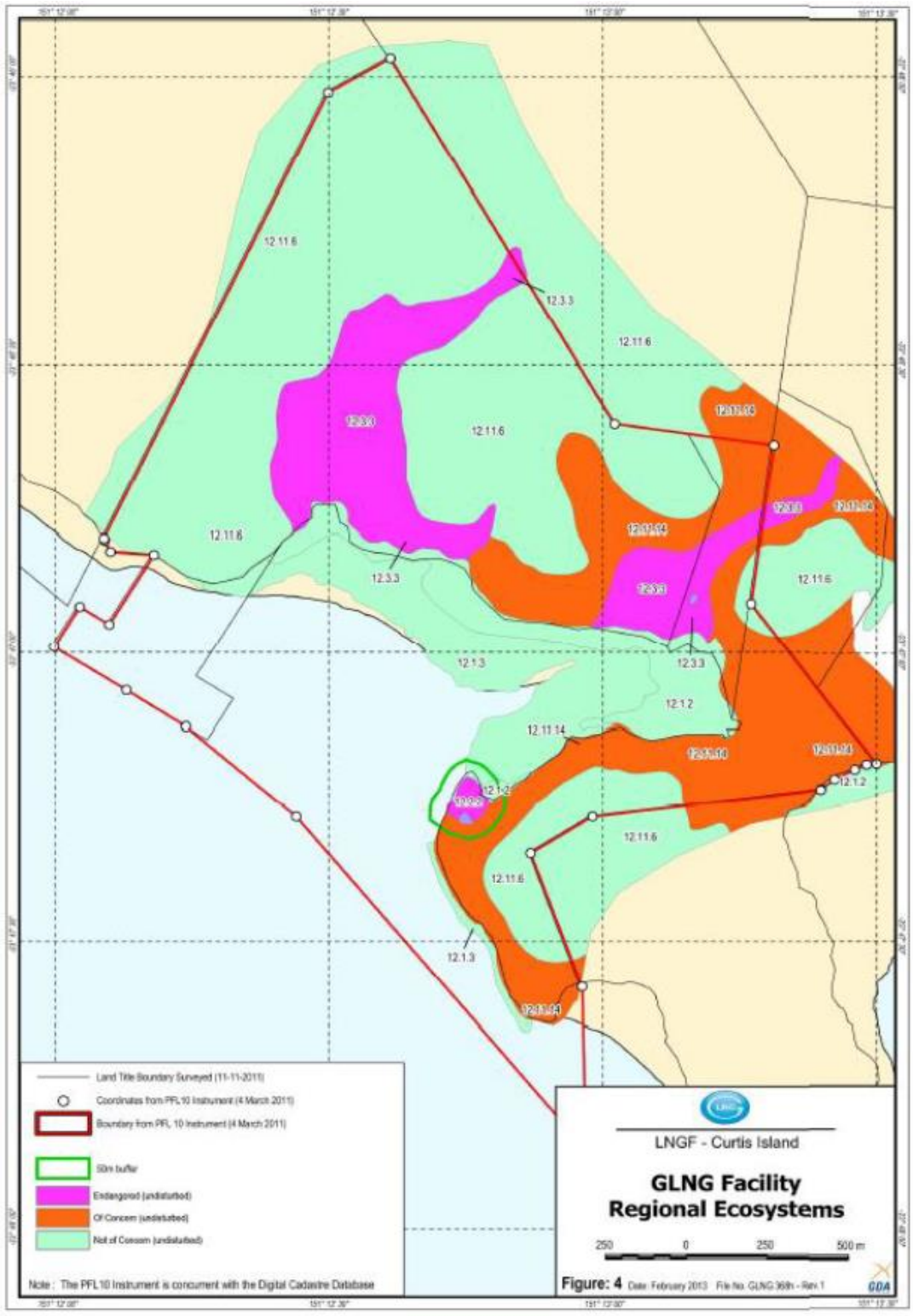

Figure 3 – Noise monitoring locations

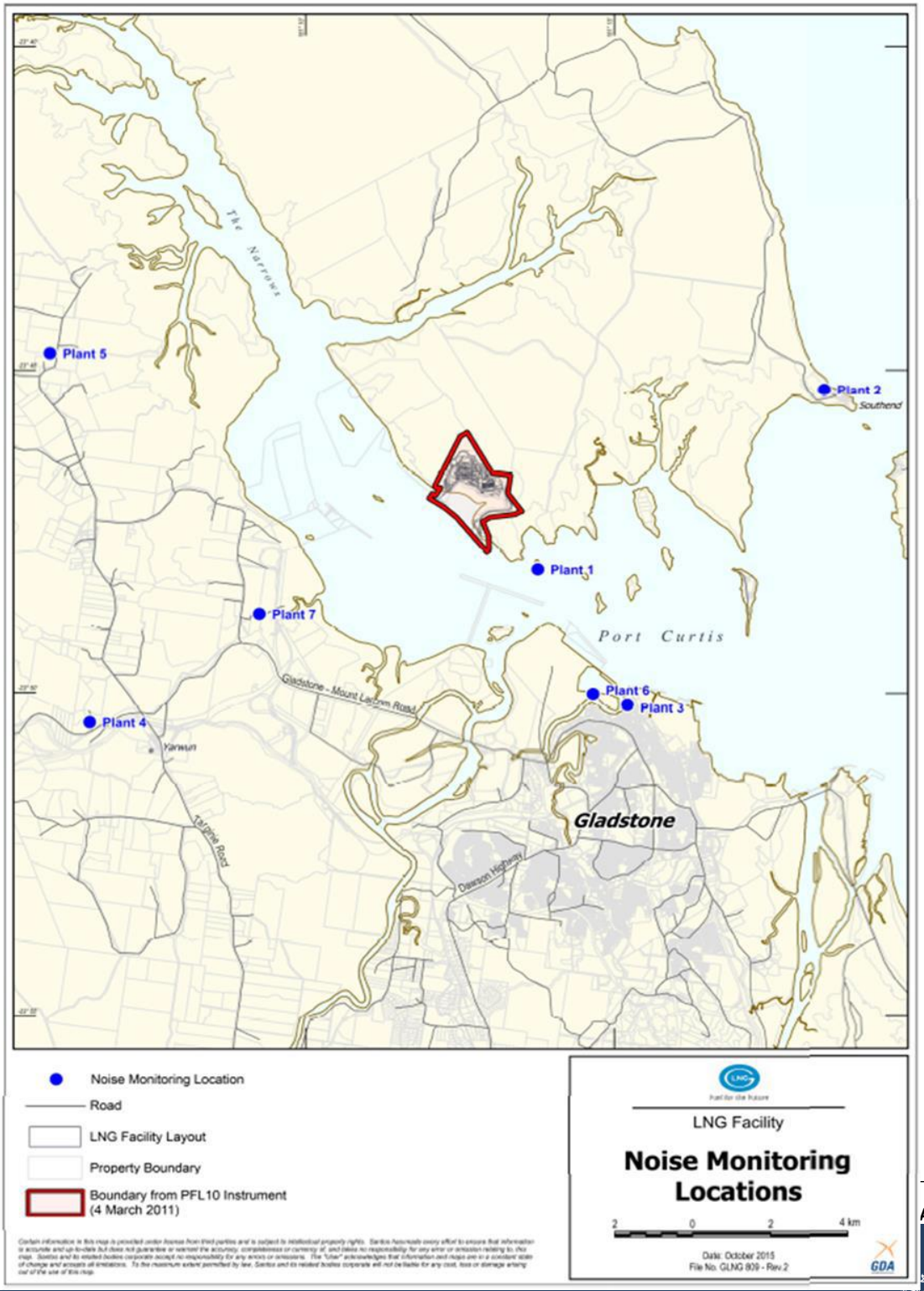

Figure 4 – GLNG Facility PLF and MOF Maintenance Activity Locations