Government of Western Australia
Department of Water and Environmental Regulation

Amended Licence

Licence number	L9225/2019/1
Licence holder	Chevron Australia Pty Ltd
ACN	086 197 757
Registered business address	Level 24, QV1 250 St Georges Terrace PERTH WA 6000
DWER file number	DER2019/000441
Duration	31/07/2020 to 30/07/2040
Date of amendment	4 November 2022
Premises details	Wheatstone LNG Project (Stage 1 and 2) Ashburton North Strategic Industrial Area Legal description - Part Lot 238 on Deposited Plan 195206 and Part Lots 567 and 569 on Deposited Plan 71345 Certificates of Title Volume LR3118 Folio 396, Volume 2779 Folio 361 and Volume LR3161 Folio 383 As defined by the coordinates in Schedule 2

Prescribed premises category description (Schedule 1, *Environmental Protection Regulations 1987*)	**Assessed design capacity**
Category 10: Oil or gas production from wells - premises, whether on land or offshore, on which crude oil, natural gas or condensate is extracted from below the surface of the land or the seabed, as the case requires, and is treated or separated to produce stabilised crude oil, purified natural gas or liquefied hydrocarbon gases.	LNG: 12 million tonnes per annual period Condensate: 1.1 million tonnes per annual period
Category 34: Oil or gas refining - premises on which crude oil, condensate or gas is refined or processed.	
Category 52: Electric power generation - premises (other than premises within category 53 or an emergency or standby power generating plant) on which electrical power is generated using a fuel.	151.2 MW (including 14MW emergency diesel generators)
Category 54 Sewage facility premises – a) On which sewage is treated (excluding septic tanks); or b) From which treated sewage is discharged onto land or into waters	816 m^3 per day
Category 61: Liquid waste facility: premises on which liquid waste produced on other premises (other than sewage waste) is stored, reprocessed, treated or irrigated	1,736,315 tonnes per annual period

This licence is granted to the licence holder, subject to the attached conditions, on 4 November 2022, by:

Caron Goodbourn Digitally signed by Caron Goodbourn
Date: 2022.11.04 10:51:35 +08'00'

MANAGER, PROCESS INDUSTRIES
an officer delegated under section 20 of the *Environmental Protection Act 1986* (WA)

Licence history

Date	Reference number	Summary of changes
29/01/2020	L9199/2019/1	Licence issued for operation of Wheatstone LNG Project (Stage 1)
31/07/2020	L9199/2019/1	Licence surrendered for operation of Wheatstone LNG Project (Stage 1)
31/07/2020	L9225/2019/1	Licence issued for operation of Wheatstone LNG Project (Stage 1 and 2)
4/11/2022	L9225/2019/1	Licence amended to include the permanent marine outfall

Interpretation

In this licence:

(a) the words ‘including’, ‘includes’ and ‘include’ in conditions mean “including but not limited to”, and similar, as appropriate;

(b) where any word or phrase is given a defined meaning, any other part of speech or other grammatical form of that word or phrase has a corresponding meaning;

(c) where tables are used in a condition, each row in a table constitutes a separate condition;

(d) any reference to an Australian or other standard, guideline, or code of practice in this licence:

  (i) if dated, refers to that particular version; and

  (ii) if not dated, refers to the latest version and therefore may be subject to change over time;

(e) unless specified otherwise, any reference to a section of an Act refers to that section of the EP Act; and

(f) unless specified otherwise, all definitions are in accordance with the EP Act.

NOTE: This licence requires specific conditions to be met but does not provide any implied authorisation for other emissions, discharges, or activities not specified in this licence.

Licence conditions

The licence holder must ensure that the following conditions are complied with:

Infrastructure and equipment

1. The licence holder must ensure that the site infrastructure and equipment listed in Table 1 and located at the corresponding infrastructure location is maintained and operated in accordance with the corresponding operational requirement set out in Table 1.

Table 1: Infrastructure and equipment operational requirements

Site infrastructure and equipment	Operational requirement	Infrastructure location
LNG train 1 and LNG train 2	During normal operating conditions feed gas must be directed through the MRU prior to entering the liquefaction end of the LNG trains.	Site layout map LNG train 1 - 1A LNG train 2 - 1B
LNG train 1 refrigeration compressor GT A to GT F LNG train 2 refrigeration compressor GTA to GT F	During normal operating conditions each GT must be operated with: • DLE combustor system; • TIAH (when the GTG is being operated at >70% load); • WHRU; • a load balancing program; and • continuous fuel composition monitoring.	Map of discharge points to air and monitoring locations LNG train 1 - A1 to A6 LNG train 2 - A7 to A12
GTG 1 to GTG 4	During normal operating conditions each GTG must be operated with: • DLE combustor system; • TIAH (when the GTG is being operated at >70% load); and • continuous fuel composition monitoring.	Site layout map 21A to 21D
HOSH	Must only be operated for start-up of LNG train1 or 2 or for maintenance. Must be operated with a low NOx burner.	Map of discharge points to air and monitoring locations A26
High pressure flare system	Flaring must not occur during normal operating conditions except for the following: • pilot and purge requirements; and • venting from process equipment of fugitive emissions, small purges from sampling connections, hydrocarbon analyser flows and pump/turbine seal gas losses.	Site layout map 12
Low pressure flare system	Flaring must not occur during normal operating conditions except for the following: • pilot and purge requirements; • venting from process equipment of fugitive emissions, small purges from sampling connections, hydrocarbon analyser flows and pump/turbine seal gas losses; and • when AGTO 1 or AGTO 2 is unavailable.	Site layout map 11

Site infrastructure and equipment	Operational requirement	Infrastructure location
Marine flare system	Flaring must not occur during normal operating conditions except for the following: • pilot and purge requirements; • during ship loading or de-inerting; and • when BOG compressors are unavailable.	Site layout map 13
LNG train 1 AGRU LNG train 2 AGRU	Acid gases recovered by the AGRUs must be directed to AGTOs for combustion. If the AGTOs are not operating acid gases must be directed to the flare for combustion.	Site layout map LNG train 1 - 2A LNG train 2 - 2B
LNG train 1 AGTO LNG train 2 AGTO	The AGTOs must be operated with continuous monitoring of: • combustion chamber temperature; • oxygen in the flue gas; and • fuel gas composition. The AGTOs must be operated to achieve a firing temperature of >760ºC during normal operating conditions.	Map of discharge points to air and monitoring locations LNG train 1 - A27 LNG train 2 - A28
Emergency Diesel Generator 1 to Generator 6	Only to be operated when GTGs are unavailable.	Site layout map 22A to 22F
LNG storage tanks	Storage tanks must have: • continuous temperature based leak detection linked to an alarm; • a monitored high and a high-high level alarm; and • an interlock which shuts down incoming flow when the high-high level alarm is triggered. During normal operating conditions BOG from the storage tanks must be recovered by BOG compressors and returned to LNG train 1 or train 2. If the BOG compressors are unavailable, BOG must be directed to the marine flare for combustion.	Site layout map 8A and 8B
Condensate storage tanks located within a geosynthetic clay lined bunded containment area with a with a hydraulic conductivity of $1x10^{-7}$ cm/s	The bunded containment area shall be capable of storing 110% of the tank volume. Storage bunding must be emptied prior to an impending cyclone unless unsafe to do so. Storage tanks must have: • a monitored high and a high-high level alarm; and • an interlock which shuts down incoming flow when the high-high level alarm is triggered.	Site layout map 9A and 9B
Propane and ethylene storage drums	Storage drums must: • be maintained with sufficient capacity to store the refrigerant inventory of one LNG train during normal operating conditions; • have a continuous leak detection system linked to an alarm; • have a monitored high and a high-high level alarm; and • have an interlock which shuts down incoming flow when the high-high level alarm is triggered.	Site layout map 15 and 16

Site infrastructure and equipment	Operational requirement	Infrastructure location
Operations diesel storage tank	Tanks are located within a concrete bunded containment area which is maintained such that it is capable of storing 110% of the tank volume of the largest storage tank, or 25% of the total storage volume if multiple tanks occur within the bund. Tank bunding must be emptied prior to an impending cyclone unless unsafe to do so. Tanks must have: • nitrogen blanketing; and • a monitored high level alarm.	Site layout map 25
Emergency diesel generators storage tank		Site layout map 23
Methanol / TEG tank		Site layout map 20
Waste oil storage tank		Site layout map 26
Wastewater tank		Site layout map 27
Amine storage tank (concentrated aMDEA solution)		Site layout map 17
Amine surge tank (diluted aMDEA solution)		Site layout map 18A and 18B
Hot oil storage tank		Site layout map 19
Diesel line	A dry break coupling must be in use when unloading diesel from the materials offloading facility to the diesel line.	Site layout map 24
Wastewater lift stations	Must be operated and maintained for the collection of process wastewater. Must have a monitored high level alarm.	Site layout map 29A to 29Q
Primary Water Treatment System Comprises a diversion tank, influent splitter box, two treatment trains and two oily sludge holding tanks located within a concrete bunded containment area draining to a collection sump. Each treatment train comprises: -a corrugated plate interceptor; -a dissolved air flotation system; and -a dissolved air flotation effluent filter	Contaminated stormwater and process wastewater from wastewater lift stations, process unit sumps and first flush sumps must be treated through the Primary Water Treatment System prior to discharge from the premises or otherwise collected for offsite disposal. Composite sampling of treated wastewater must be undertaken. Sludges and waste oil collected from the Primary Water Treatment System must be directed to the waste oil storage tank, oily sludge holding tank or collected for offsite disposal.	Site layout map 28

Site infrastructure and equipment	Operational requirement	Infrastructure location
Stormwater infrastructure: – Drainage – First flush sumps – Sedimentation ponds	The first 25 mm of stormwater runoff from process areas must be directed to a first flush sump. The drainage network must direct uncontaminated water to the sedimentation ponds. Stormwater from car parks must be directed through an oil and sediment trap. First flush sumps must have a monitored high level alarm and an oil skimmer. If stormwater within the first slush sumps does not meet the water quality criteria in condition 5 when monitored, it must be diverted to the Primary Water Treatment System for treatment, or collected for offsite disposal. First flush sumps must be inspected prior to an impending cyclone and contained water removed to ensure the sumps have >90% capacity, unless unsafe to do so.	Site layout map First flush sumps - 30A to 30K Sedimentation ponds - 31A to 31F
Combined effluent sump	Must be maintained with a 300mm vertical freeboard.	Site layout map: Combined effluent sump - 33
Permanent marine outfall pipeline and diffuser	Must be maintained with at least 20 variable area duckbilled ports. Diffuser ports must be angled to promote dilution of a negatively buoyant plume. Must discharge at a location between 11 m below the ocean surface and 2 m above the seabed. Pipeline must be visually inspected on a minimum monthly basis to check integrity and a record of the inspections must be kept.	Site layout map: Permanent marine outfall diffuser - 34

Emissions and discharges

2. The licence holder must ensure that the emissions listed in Table 2 are discharged only from the corresponding discharge point and only at the corresponding discharge point location.

Table 2: Authorised discharge points

Emission	Discharge point	Discharge point height (m AGL)	Discharge point location Schedule 1: Map of discharge points to air and monitoring locations
NOx SOx CO VOCs (including BTEX) PM	LNG train 1 GT A to GT F	50	A1, A2, A3, A4, A5 and A6
	LNG train 2 GT A to GT F	50	A7, A8, A9, A10, A11 and A12
	GTG 1 to GTG 4	35	A13, A14, A15 and A16
	High pressure flare system	94	A17
	Low pressure flare system	45	A18
	Marine flare system	43	A19
	Emergency Diesel Generator 1-6	8	A20, A21, A22, A23, A24, A25
	Hot oil start-up heater (HOSH)	51	A26
NOx SOx CO VOCs (including BTEX) H_2S PM	LNG train 1 AGTO	35	A27
	LNG train 2 AGTO	35	A28
Stormwater which has been settled through a sedimentation pond	Sedimentation pond A to pond F	NA	Map of discharge points to land and monitoring locations Pond A to Pond F
Treated wastewater from the combined effluent sump	Permanent marine outfall diffuser	NA	Schedule Map of discharge points to water and monitoring locations Permanent marine outfall diffuser

3. The licence holder must ensure that emissions from the discharge points listed in Table 3 for the corresponding parameter do not exceed the corresponding limit (units specified) when monitored in accordance with condition 11.

Table 3: Discharge to air limits

Discharge point	Parameter	Limit	Averaging period
High pressure flare system	Dark smoke	No dark smoke emissions of a shade of Ringelmann 3 or greater	Continuous 30 minute period
Low pressure flare system			
Marine flare system			

4. The licence holder is exempt from compliance with condition 3 if in the case of an event in Table 4 the corresponding management actions are undertaken.

Table 4: Management actions

Discharge point	Event	Management actions
High pressure flare system	Exceedance of the limit prescribed in Table 3 during start up, shut down or upset conditions	All reasonable and practical measures are undertaken prior to, during and after the event, to minimise dark smoke emissions Within 7 days of the event the licence holder must notify the CEO in writing of the following: • the date, time and duration of the limit exceedance; • the raw monitoring data for the duration of the limit exceedance in tabulated form; • description of the event which caused the exceedance; and the measures taken to stabilise dark smoke emissions.
Low pressure flare system		
Marine flare system		

5. The licence holder must ensure that emissions from the discharge point listed in Table 5 for the corresponding parameter do not exceed the corresponding limit (units specified) when monitored in accordance with condition 17.

Table 5: Discharge to land limits

Discharge point	Parameter	Limit
Pond A to Pond F	Total recoverable hydrocarbons	15 mg/L
	pH	6 – 9
	Turbidity	370 NTU

6. The licence holder must undertake a six-monthly Optical Gas Monitoring survey of the premises to identify all gas leaks that are visible by the Optical Gas Imaging camera.

Monitoring

General

7. The licence holder must record the results of all monitoring activity required by conditions 11, 14, 16, 17, 18, 20, 22(a), 23, 24 and 28.

8. The licence holder must ensure that:

(a) monitoring is undertaken in each monthly period such that there are at least 15 days in between the days on which samples are taken in successive months;

(b) monitoring is undertaken in each quarterly period such that there are at least 45 days in between the days on which samples are taken in successive quarters; and

(c) monitoring is undertaken in each six-monthly period such that there are at least 5 months in between the days on which samples are taken in successive periods of six months.

9. The licence holder must ensure that all monitoring equipment used to comply with conditions 14 and 16 is operated and calibrated in accordance with the required methodology and is maintained so as to provide valid data for greater than 90% of the measurement intervals in every calendar month, and greater than 95% of the measurement intervals over any 12 consecutive calendar months.

10. The licence holder must ensure that all monitoring equipment used to comply with conditions 11, 14, 16, 17, 18, 20, 22(a), 23, 24 and 28 is calibrated in accordance with the manufacturer's specifications.

Monitoring of discharges to air

11. The licence holder must monitor emissions:

(a) from each discharge point;

(b) at the corresponding monitoring location;

(c) for the corresponding parameter;

(d) at the corresponding frequency;

(e) for the corresponding Averaging Period;

(f) in the corresponding unit; and

(g) using the corresponding method,

as set out in Table 6.

Table 6: Monitoring of discharges to air

Discharge point	Monitoring location Schedule 1: Map of discharge points to air and monitoring locations	Parameter	Frequency	Averaging period	Unit[1, 2]	Method[4, 5]
GTG1 to GTG4	A13, A14, A15, A16	Volumetric flow rate	Quarterly if operating	Minimum 30 minutes	m^3/s	USEPA Method 2
		NO_x			mg/m^3	USEPA Method 7D or 7E
		CO			mg/m^3	USEPA Method 10
		SO_2			mg/m^3	USEPA Method 6C
		Fuel consumption	Continuous	Monthly	m^3	None specified
LNG train 1 GT A to GT F LNG train 2 GT A to GT F	A1 to A6 and A7 to A12	Volumetric flow rate	Quarterly if operating	Minimum 30 minutes	m^3/s	USEPA Method 2
		NO_x			mg/m^3	USEPA Method 7D or 7E
		CO				USEPA Method 10
		SO_2				USEPA Method 6C
		Fuel consumption	Continuous	Monthly	m^3	None specified
LNG train 1 AGTO and LNG train 2 AGTO	A27 and A28	Volumetric flow rate	Quarterly	Minimum 30 minutes	m^3/s	USEPA Method 2
		NO_x			mg/m^3	USEPA Method 7D or 7E
		CO				USEPA Method 10
		SO_2				USEPA Method 6C
		Total VOCs				USEPA Method 18
		Fuel consumption	Continuous	Monthly	m^3	None specified
Emergency Diesel Generator 1-6	A20 to A25	Fuel consumption	Continuous	Monthly	m^3	None specified
HOSH	A26	Fuel consumption	Continuous	Monthly	m^3	None specified
Low Pressure, High Pressure	A17 to A19	Volume of gas flared	Continuous	Monthly	m^3	None specified

Discharge point	Monitoring location Schedule 1: Map of discharge points to air and monitoring locations	Parameter	Frequency	Averaging period	Unit[1, 2]	Method[4, 5]
and Marine Flare Systems		Dark Smoke Emissions	During flaring events where a shade greater than Ringelmann 1 emitted for a period of 30 minutes or more	Test specific	Ringelmann shade	Ringelmann Method

Note 1: All units are referenced to STP dry.
Note 2: Concentration units for all gases are referenced to 15% O_2 except for the AGTOs.
Note 3: Concentration units for all AGTO gases are referenced to 3% O_2.
Note 4: Monitoring shall be undertaken to reflect Normal Operating Conditions.
Note 5: Where any USEPA method refers to USEPA Method 1 for the sampling plane, this must be read as a referral to AS 4323.1.

12. The licence holder must ensure that sampling required by condition 11 is undertaken at sampling locations in accordance with the current version of AS 4323.1.

13. The licence holder ensure that all non-continuous sampling and analysis undertaken required by condition 11 is undertaken by a holder of NATA accreditation for the relevant methods of sampling and analysis.

Ambient air monitoring

14. The licence holder must monitor the air for concentrations of the parameters listed in Table 7:

(a) at the corresponding monitoring location;

(b) in the corresponding unit;

(c) at no less that the corresponding frequency;

(d) for the corresponding averaging period; and

(e) using the corresponding method,

as set out in Table 7.

Table 7 Monitoring of ambient air concentrations

Monitoring location	Parameter	Unit	Frequency	Averaging period	Method		Reportable event criteria
					Sampling	Analysis	
Onslow Townsite AQMS Schedule 1: Map of discharge points to air and monitoring locations	O_3	ppb	Continuous	1-hour	AS 3580.6.1	UV absorption analyser	≥ 100
				4-hour			≥ 80
	NO, NO_2, NOx			1-hour	AS 3580.5.1	Chemiluminescence analyser	≥ 120
	SO_2			1- hour	AS 3580.4.1	UV fluorescence analyser	≥ 200
	CO	ppm		8-hour	AS 3580.7.1	CO analyser	≥ 9
	NMVOC	$\mu g/m^3$	One 7-day sample every calendar month	7-days	Passive Diffuse Sampler	NATA accredited for the parameter specified	-

15. The licence holder must submit to the CEO a written report within 14 calendar days of any exceedance of any reportable event criteria specified in Table 7, containing the information specified in Schedule 3: Reportable events (ambient air monitoring).

Meteorological monitoring

16. The licence holder must undertake meteorological monitoring in accordance with:

(a) at the corresponding monitoring location;

(b) in the corresponding unit;

(c) at no less that the corresponding frequency;

(d) for the corresponding averaging period; and

(e) using the corresponding method,

as set out in Table 8.

Table 8 Monitoring of meteorological conditions

Monitoring location	Parameter	Units	Height	Frequency	Averaging period	Sampling Method
Onslow Townsite AQMS Schedule 1: Map of discharge points to air and monitoring locations	Wind speed	m/s	10 m	Continuous	1 hour average	AS 3580.14
	Wind direction	degrees				
	Wind direction standard deviation					

Monitoring of discharges to land

17. The licence holder must monitor emissions:

(a) from each discharge point;

(b) at the corresponding monitoring location;

(c) for the corresponding parameter;

(d) at the corresponding frequency;

(e) for the corresponding averaging period;

(f) in the corresponding unit; and

(g) using the corresponding method,

as set out in Table 9.

Table 9: Monitoring of discharges to land

Discharge point	Monitoring location	Parameter	Frequency	Unit	Method	
					Sampling	Analysis
Pond A to Pond F	30A to 30L Schedule 1: Maps Map of discharge points to land and monitoring locations	pH	Prior to discharge of water from each monitoring location to one of the discharge points Pond A to Pond F	-	Spot sample in accordance with AS/NZS 5667.1 and AS/NZS 5667.10	In-field
		Turbidity		NTU		
		Total Recoverable Hydrocarbons		mg/L		NATA accredited for the parameters specified

Ambient groundwater monitoring

18. The licence holder must monitor the groundwater for concentrations of the parameters listed in Table 10:

(a) at the corresponding monitoring location;

(b) for the corresponding parameter;

(c) at the corresponding frequency;

(d) for the corresponding averaging period;

(e) in the corresponding unit; and

(f) using the corresponding method,

as set out in Table 10.

Table 10: Monitoring of ambient groundwater concentrations

Monitoring location[1]	Parameter	Unit	Frequency	Method	
				Sampling	Analysis
Schedule 1: Map of discharge points to land and monitoring locations LNG 1; LNG 3; LNG 7; WHSD01S to WHSD03S; and WHSD05S to WHSD09S	SWL	m BGL	Six-monthly	NA	In-field non NATA accredited analysis permitted
	pH	-		Spot sample in accordance with AS/NZS 5667.1 and AS/NZS 5667.11	
	Temperature	ºC			
	Electrical conductivity @ 25°C	µS/cm			
	Dissolved oxygen	mg/L			
	Redox potential	mV			
	Total Recoverable Hydrocarbons	mg/L			NATA accredited for the parameters specified
	Benzene, Toluene, Ethyl benzene and Xylene				
	Metals and metalloids: aluminum, arsenic, cadmium, chromium (total Cr, Cr III and CrIV), cobalt, copper, iron, mercury, nickel, selenium, zinc				

Note 1: If-water samples are unable to be collected from any of the monitoring bores WHSD01S-WHSD03S and WHSD05S-WHSD09S the corresponding intermediate nested bore shall be sampled in its place.

Monitoring of discharges to water

19. The licence holder must ensure that emissions from the discharge point listed in Table 11 for the corresponding parameter do not exceed the corresponding limits (units specified) when monitored in accordance with condition 20.

20. The licence holder must monitor emissions:

(a) from each discharge point;

(b) at the corresponding monitoring location;

(c) for the corresponding parameters;

(d) at the corresponding frequency;

(e) in the corresponding unit; and

(f) using the corresponding method,

as set out in Table 11.

Table 11: Monitoring of discharges to water, emission limits and reportable event criteria

Discharge point	Monitoring location	Parameter	Frequency	Unit	Method		Limit (µg/L unless specified)	Reportable event criteria (µg/L unless specified)[1]	Applicable period for limit and reportable event criteria
					Sampling	Analysis[1]			
Permanent marine outfall diffuser	Schedule 1: Maps Map of discharge points to land and monitoring locations Combined effluent sump Flow meter and sampling point.	Flow rate	Continuous during discharge	**m^3/hr**	Flow meter		674 m^3/hr	NA	Hourly average
		Aluminum	Monthly	µg/L	Spot sample in accordance with AS/NZS 5667.1 and AS/NZS 5667.10	By a facility with NATA accreditation for the parameters specified	1190	>893	Spot sample
		Ammonia					166,610	>124,958	
		Cadmium					36	>27	
		Chromium (III)					5041	>3781	
		Chromium (VI)					98	>74	
		Copper					95	>71	
		Lead					923	>692	
		Mercury					1.4	>1	
		Nickel					2,454	>1840	
		Silver					252	>189	
		Vanadium					22,247	>16,685	
		Zinc					2,174	>1,630	
		TRH					980	>735	
		Piperazine					700	>525	
		MDEA					315	>236	
		TDS					NA	>70,000	
		TN[2]		mg/L			60 kg/day	>45 kg/day	12 month rolling mean with a minimum of 12 samples
		NOx[2]					24.5 kg/day	>18.4 kg/day	
		TP[2]					8.5 kg/day	>6.4 kg/day	
		FRP[2]					6.5 kg/day	>4.9 kg/day	
		Faecal Coliforms[2, 3]		CFU/100 ml			14 CFU/100mL	NA	12 month rolling median with a minimum of 12 samples.
							21 CFU/100mL		12 month rolling 90th percentile with a minimum of 12 samples
		Enterococci[2, 3]		Org/100 ml			200 Org/100mL		12 month rolling 95th percentile with a minimum of 12 samples
		Chlorine		µg/L		In situ	2,100	>1575	Spot sample
		DO		%			NA	< 60%	
		Turbidity		NTU				> 40.91	
		Temperature	Continuously	˚C				NA	NA
		pH		-			< 5 and >9		Daily average

Note 1: Limit of reporting for analysis must be below the respective reportable event criteria specified for each parameter.

Note 2: The requirements of condition 23 do not apply to the indicated parameters which are not considered toxicants.

Note 3: Measured using the membrane filtration method

21. The licence holder must within 14 calendar days of the receipt of results of monitoring conducted pursuant to condition 20 which exceed the reportable event criteria specified in Table 11 for the same parameter twice or more in any 90-calendar day period;

(a) conduct an investigation into the likely cause of the exceedances; and

(b) prepare and submit to the CEO a written notification of the exceedance(s) which includes:

(i) the details of the exceedances including the relevant parameter(s), sampling dates and monitoring results;

(ii) the results of the investigation undertaken pursuant to condition 21(a); and

(iii) any management actions including timeframes, proposed to ensure the reportable event criteria are not exceeded further.

22. The licence holder must undertake the following actions in the event of non-compliance with condition 19 (limit exceedance);

(a) collect a sample from the relevant monitoring location within 48 hours of becoming aware of the non-compliance, and have that sample analysed by a NATA accredited laboratory for the parameter(s) relevant to the non-compliance;

(b) conduct an investigation into the likely cause of the non-compliance; and

(c) prepare and submit to the CEO a written notification of the non-compliance within 14 calendar days of becoming aware of the event which includes:

(i) the details of the non-compliance including the relevant limit(s) which has been exceeded, sampling date(s) and monitoring result(s);

(ii) the results of the monitoring undertaken pursuant to condition 22(a);

(iii) the results of the investigation undertaken pursuant to condition 22(b); and

(iv) any management actions including timeframes, proposed to ensure limit(s) are not exceeded further.

23. In the event the results of the monitoring conducted pursuant to condition 22(a) also exceed the relevant limit specified in Table 11, the licence holder must undertake whole of effluent toxicity (WET) testing pursuant to condition 24 within 30-calendar days of receiving those results;

24. The licence holder must undertake WET testing in accordance with the requirements specified in Table 12;

Table 12: Whole of effluent toxicity testing

WET testing requirements				
WET test	**Species**	**Dilution series**	**Dilution water**	**Frequency**
72 hour microalgae growth inhibition test (Chronic)	*Nitzschia closterium*	1.3% 3.1% 6.3% 12.5% 50% 100% Using worst case scenario effluent from the combined effluent sump	Sea water from a reference site as outlined in Table 13	Within one month of the amended licence being issued then subsequently at least once every three years And As required by condition 23 due to emission limit exceedance
48 hour larval development (Chronic)	*Saccostrea echinata* (milky oyster)			
72 hour larval development (Chronic)	*Heliocidaris tuberculata* (sea urchin)			
48 hour toxicity (Acute)	*Parvocalanus crassirostris* (copepod)			
7 day larval fish imbalance and biomass (Dry weight)	*Pagrus auratus* (pink snapper) or *Seriola lalandi* (yellowtail kingfish) If the above two species are unavailable *Lates calcarifer* (barramundi)			

25. The licence holder must ensure WET testing undertaken in pursuant to condition 24 is undertaken by a holder of NATA accreditation for ecotoxicology testing.

26. Within 90-calendar days of undertaking WET testing pursuant to condition 24 the licence holder must submit to the CEO a WET testing report, prepared by a suitably qualified scientist, that as a minimum includes:

(a) a description of the composition of the effluent used for the WET testing and why it is considered worst case;

(b) results of NATA accredited analysis of the effluent;

(c) a description of the methods and results of the WET testing undertaken;

(d) consideration of relevant results of discharge to water monitoring undertaken in accordance with condition 20;

(e) an assessment of the number of dilutions required to achieve the levels of ecological protection at the LEPA/MEPA and HEPA/HEPA boundaries outlined in Schedule 4 using BurrliOZ software to assess species sensitivity distribution; and

(f) comparison of, the number of dilutions required to achieve the levels of ecological protection at the LEPA/MEPA and HEPA/HEPA boundaries outlined in Schedule 4, with the dilutions predicted to be achieved at these boundaries.

27. Where a WET testing report prepared pursuant to condition 26 indicates there is a risk of not meeting the environmental quality objectives or levels of ecological protection outlined in Schedule 4, the licence holder must also submit to the CEO with the WET testing report a plan of management actions including timeframes, proposed, to ensure the relevant environmental quality objectives or levels of ecological protection are met.

Ambient marine monitoring

28. The licence holder must monitor the ambient marine environment for concentrations of the parameters listed in Table 13:

(a) at the corresponding monitoring location;

(b) in the corresponding unit;

(c) at no less that the corresponding frequency; and

(d) using the corresponding method,

as set out in Table 13.

Table 13: Monitoring of marine waters

Monitoring location	Parameter	Frequency	Unit	Method		EQC		EQC	
				Sampling	Analysis[2,3,4]	LEPA/MEPA Boundary		MEPA/HEPA Boundary	
Marine environment within the permanent marine outfall diffuser plume (determined using a drogue) at the: • LEPA/MEPA boundary (three sample locations, each separated by 20 m from its neighbour) • MEPA/HEPA boundary (three sample locations each separated by 100 m from its neighbour) at depths no more than 0.5m below the sea surface and no more than 0.5m above the sea floor for each sampling location and Three reference sites[1] at depths no more than 0.5m below the sea surface and no more than 0.5m above the sea floor for each sampling location	Aluminium	Quarterly	µg/L	Spot sample in accordance with AS/NZS 5667.1 and AS/NZS 5667.9	NATA accredited for the parameters specified	69 and Median <95th percentile reference site measurements for that season		2.1 and Median < <80th percentile reference site measurements for that season	
	Ammonia					1200		500	
	Chlorine					NA		3	
	Cadmium					14		0.7	
	Chromium (III)					49		7.7	
	Chromium (VI)					20		0.14	
	Copper					3		0.3	
	Lead					6.6		2.2	
	Mercury					0.7		0.1	
	Nickel					200		7	
	Silver					1.8		0.8	
	Vanadium					160		50	
	Zinc					23		7	
	TRH					NA		7	
	TN					260	Median <95th percentile reference site measurements	225	Median < 80th percentile reference site measurements
	NOx					16.6		12	
	TP					17.5		7.5	
	FRP					4		3.3	
	Chlorophyll-a					1.4		1.4	

Monitoring location	Parameter	Frequency	Unit	Method		EQC LEPA/MEPA Boundary	EQC MEPA/HEPA Boundary
				Sampling	Analysis[2,3,4]		
	Piperazine		mg/L			NA	1.0
	MDEA					NA	0.45
	TDS					39,500	39,400
	Temperature		˚C		In situ	Median <95th percentile reference site measurements for that season	Median <80th percentile reference site measurements for that season
	pH		NA			5th percentile < Median < 95th percentile of reference site measurements	20th percentile <Median < 80th percentile of reference site measurements
	DO measured no more than 0.5 m from the seabed		%			> 60%	> 60%
						Median > 80%	Median > 90%
	Turbidity		NTU			10	

Note 1: Reference sites to be determined as per ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* and EPA (2017) *Environmental Quality Criteria Reference Document for Cockburn Sound – A Supporting Document to the State Environmental (Cockburn Sound) Policy 2015*).

Note 2: Limit of reporting for analysis must be below the EQC specified for each parameter or where this is not able to be achieved by any Australian laboratory, analysis must be undertaken using the lowest available limit of reporting at the time of sampling.

Note 3: Where the lowest available limit of reporting exceeds the EQC, monitoring results which are less than the limit of reporting are not considered to exceed the relevant EQC.

Note 4: Analysis for all metals must be of samples filtered through a 0.45 µm filter and analysed for dissolved metal concentration.

29. The licence holder must within 14 calendar days of the receipt of monitoring results which exceed or do not meet any EQC in Table 13;

(a) conduct an investigation into the likely cause of the exceedance(s); and

(b) prepare and submit to the CEO a written notification of the exceedance(s) which includes:

(i) the details of the exceedance/s including the relevant parameter(s), sampling date/s and ambient marine monitoring results;

(ii) the most recent monitoring results for discharges to water conducted in accordance with condition 20;

(iii) the results of the investigation undertaken pursuant to condition 29(a); and

(iv) any management actions including timeframes, proposed to ensure the EQC are not exceeded further.

Records and reporting

30. The licence holder must maintain accurate and auditable books including the following records, information, reports, and data required by this licence:

(a) the calculation of fees payable in respect of this licence;

(b) any maintenance of infrastructure that is performed in the course of complying with condition 1 of this licence;

(c) monitoring programmes undertaken in accordance with conditions 6, 11, 14, 16, 17, 18, 20, 22(a), 23, 24 and 28 of this licence;

(d) non-compliances reported in accordance with condition 22(c) or 32 of this licence;

(e) reportable events reported in accordance with condition 15, 21(b), 22(c) and 29(b)of this licence;

(f) management actions undertaken in accordance with condition 4 of this licence; and;

(g) complaints received under condition 33 of this licence.

31. The books specified under condition 30 must:

(a) be legible;

(b) if amended, be amended in such a way that the original version(s) and any subsequent amendments remain legible and are capable of retrieval;

(c) be retained by the licence holder for the duration of the licence; and

(d) be available to be produced to an inspector or the CEO as required.

32. The licence holder must, within 7 days of becoming aware of any non-compliance with conditions 1, 3, and 5 of this licence, notify the CEO in writing of that non-compliance and include in that notification the following information:

(a) which condition was not complied with;

(b) the time and date when the non-compliance occurred;

(c) if any environmental impact occurred as a result of the non-compliance and if so what that impact is and where the impact occurred;

(d) the details and result of any investigation undertaken into the cause of the non-compliance;

(e) what action has been taken and the date on which it was taken to prevent the non-compliance occurring again; and

(f) what action will be taken and the date by which it will be taken to prevent the non-compliance occurring again.

33. The licence holder must record the following information in relation to complaints received by the licence holder (whether received directly from a complainant or forwarded to them by the Department or another party) about any alleged emissions from the premises:

(a) the name and contact details of the complainant, (if provided);

(b) the time and date of the complaint;

(c) the complete details of the complaint and any other concerns or other issues raised; and

(d) the complete details and dates of any action taken by the licence holder to investigate or respond to any complaint.

34. The licence holder must:

(a) undertake an audit of their compliance with the conditions of this licence during the preceding annual period; and

(b) prepare and submit to the CEO by no later than 90 days after the end of that annual period an Annual Audit Compliance Report in the approved form.

35. The licence holder must submit to the CEO by no later than 90 days after the end of each annual period, an Annual Environmental Report for the previous annual period for the conditions listed in Table 14, and which provides information in accordance with the corresponding requirement set out in Table 14.

Table 14 Annual Environmental Report requirements

Condition	Requirement
3, 4 and 11 Monitoring of discharges to air and emission limits	Tabulated monitoring data results and time-series graphs in Microsoft Excel format for each monitoring location showing concentrations of all parameters over a minimum three year period (where sufficient data allows). An interpretation of the monitoring data including comparison to historical trends and emission limits (where applicable). A tabulated summary of: • emission limit exceedances; • investigations and actions undertaken in response to the exceedances; • events which were exempt to the emission limit; and • management actions undertaken. Copies of original monitoring, laboratory and analysis reports submitted by third parties.
6 Specified actions	A report of the findings of Optical Gas Monitoring surveys undertaken in the Annual period which includes: • the details of any leaks identified, including the leak rate; and • actions taken to rectify identified leaks.
14 and 15 Ambient air monitoring and Reportable Events	Tabulated monitoring data results and time-series graphs in Microsoft Excel format for each monitoring location showing concentrations of all parameters over a minimum three year period (where sufficient data allows). An interpretation of the monitoring data including comparison to historical trends and

Condition	Requirement
16 Meteorological monitoring	Reportable Event triggers (where applicable). A tabulated summary of Reportable Events for ambient air quality and investigations and actions taken in response to the events.
5 and 17 Monitoring of discharges to land and emission limits	Tabulated monitoring data results in Microsoft Excel format for each monitoring location showing concentrations of all parameters over a minimum three year period (where sufficient data allows). An interpretation of the monitoring data including comparison to emission limits. A tabulated summary of: • emission limit exceedances; • investigations and actions undertaken in response to the exceedances; and • Copies of original monitoring, laboratory and analysis reports submitted by third parties
18 Ambient groundwater monitoring	Tabulated monitoring data results and time-series graphs in Microsoft Excel format for each monitoring location showing concentrations of all parameters over a minimum three year period (where sufficient data allows). An interpretation of the monitoring data including comparison to historical trends. Copies of original monitoring, laboratory and analysis reports submitted by third parties
19 and 28 Monitoring of discharges to water and ambient marine monitoring	Tabulated monitoring data results in Microsoft Excel format for each monitoring location showing concentrations of all parameters over a minimum three year period (where sufficient data allows) in comparison to relevant EQC, limit and reportable event criteria. An interpretation of the monitoring data including comparison to limits, reportable event criteria and EQC. A tabulated summary of: • emission limit, reportable event and EQC exceedances; • investigations and actions undertaken in response to the exceedances; and • Copies of original monitoring, laboratory and analysis reports submitted by third parties.
33 Complaints	Summary of complaints received and any action taken to investigate or respond to any complaint

Definitions

In this licence, the terms in Table 15 have the meanings defined.

Table 15: Definitions

Term	Definition
CAN	Australian Company Number
AGRU	Acid Gas Removal Unit
AGTO	Acid Gas Thermal Oxidiser
aMDEA	means activated methyldiethanolamine
Annual Audit Compliance Report (AACR)	means a report submitted in a format approved by the CEO (relevant guidelines and templates may be available on the Department's website).
Annual period	a 12 month period commencing from 1 July until 30 June of the immediately following year.
ANZECC	Australian and New Zealand Environment and Conservation Council
AS 4323.1	means the Australian Standard AS4323.1 *Stationary Source Emissions Method 1: Selection of sampling positions*
AS/NZS 5667.1	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance of the Design of sampling programs, sampling techniques and the preservation and handling of samples*
AS/NZS 5667.9	means the Australian Standard AS/NZS 5667.9 *Water quality—Sampling Part 9: Guidance on sampling from marine waters*
AS/NZS 5667.10	means the Australian Standard AS/NZS 5667.1 *Water Quality – Sampling – Guidance on the sampling of waste waters*
AS/NZS 5667.11	means the Australian Standard AS/NZS 5667.11 *Water Quality – Sampling – Guidance on sampling of groundwaters*
averaging period	means the time over which a limit is measured or a monitoring result is obtained
BOG	means boil off gas
books	has the same meaning given to that term under the EP Act.
BTEX	means benzene, toluene, ethylbenzene and xylene
CEO	means Chief Executive Officer of the Department. "submit to / notify the CEO" (or similar), means either: Director General Department administering the *Environmental Protection Act 1986* Locked Bag 10 Joondalup DC WA 6919 or: info@dwer.wa.gov.au
condition	means a condition to which this licence is subject under s.62 of the EP Act.

Term	Definition
Continuous	means operates with an availability greater than 90 per cent on a calendar monthly basis and greater than 95% over any 12 consecutive calendar months
Department	means the department established under section 35 of the *Public Sector Management Act 1994* (WA) and designated as responsible for the administration of the EP Act, which includes Part V Division 3.
DLE	means dry low emissions
discharge	has the same meaning given to that term under the EP Act.
Emission	has the same meaning given to that term under the EP Act.
EP Act	*Environmental Protection Act 1986* (WA)
EP Regulations	*Environmental Protection Regulations 1987* (WA)
EQC	means Environmental Quality Criteria
FRP	means filterable reactive phosphorous
GT	Gas Turbine (driving the LNG train refrigeration compressors)
GTG	Gas Turbine Generator
HEPA	means high ecological protection area
HOSH	Hot Oil Start-up Heater
Level of ecological protection	The area of low (LEPA), moderate (MEPA) and high (HEPA) ecological protection as defined in Schedule 2 of Ministerial Statement No. 873
LEPA	means Low ecological protection area
licence	refers to this document, which evidences the grant of a licence by the CEO under section 57 of the EP Act, subject to the specified conditions contained within.
Licence holder	refers to the occupier of the premises, being the person specified on the front of the licence as the person to whom this licence has been granted.
Limit exceedance	means an exceedance of any limit specified in Table 3 , Table 5 or Table 11 of this Licence.
LNG	Liquified Natural Gas
m AGL	means metres above ground level
m BGL	means metres below ground level
MDEA	Methyldiethanolamine
MEPA	means moderate ecological protection area
MRU	means mercury removal unit
MW	Megawatts
NATA	means the National Association of Testing Authorities, Australia
NATA accredited	means in relation to the analysis of a sample that the laboratory is NATA accredited for the specified analysis at the time of the analysis
normal operating	means any operation of a particular process (including abatement

Term	Definition
conditions	equipment) excluding start-up, commissioning, shut-down, upset conditions, plant trips, equipment break down, maintenance activities and maintenance or calibration of emission monitoring devices.
Nox	means oxides of nitrogen, calculated as the sum of nitric oxide and nitrogen dioxide and expressed as nitrogen dioxide
NTU	means Nephelometric Turbidity Units
PM	means particulate matter
ppm	parts per million
premises	refers to the premises to which this licence applies, as specified at the front of this licence and as shown on the premises map in Schedule 1 to this licence.
Prescribed premises	has the same meaning given to that term under the EP Act.
quarter	means each three monthly period being: 1 January to 31 March, 1 April to 30 June, 1 July to 30 September and 1 October to 31 December, each year
reportable event	means an exceedance to criteria specified requiring certain actions to be undertaken by the licence holder including but not limited to reporting to the CEO.
Ringelmann method	means the use of the Ringlemann miniature smoke charts provided by the United Kingdom Solid Fuel Technology Institute
shut-down	means the period when plant or equipment is brought from normal operating conditions to inactivity
spot sample	means a discrete sample representative at the time and place at which the sample is taken
stack test	means a discrete set of samples taken over a representative period at normal operating conditions
start-up	means the period when plant or equipment is brought from inactivity to normal operating conditions
suitably qualified scientist	means a person who: a) holds a Bachelor of Science, Marine Science or Marine Biology; and b) has a minimum of three years of experience working in the area of ecotoxicology.
SWL	means standing water level
STP dry	means standard temperature and pressure (0º Celsius and 101.325 kilopascals respectively), dry
TEG	means triethylene-glycol
TIAH	means turbine inlet air humidification
upset conditions	means any sudden, unavoidable and/or unintended turndown or failure of equipment or process to operate in a normal or usual manner
USEPA	means United States (of America) Environmental Protection Agency
USEPA Method 2	means USEPA Method 2 *Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)*

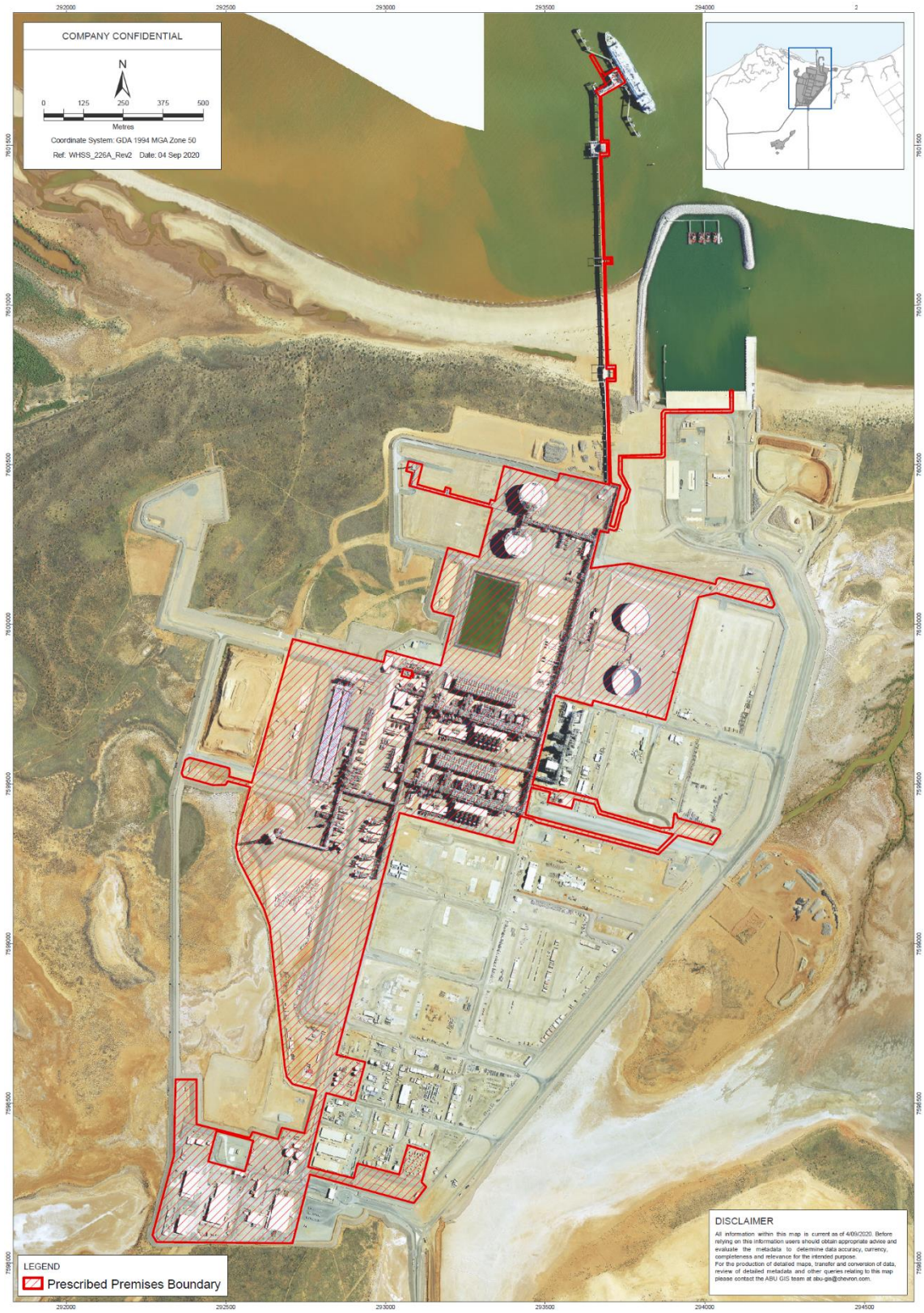
Term	Definition
USEPA Method 6C	means USEPA Method 6C *Determination of Sulfur Dioxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)*
USEPA Method 7D	means USEPA Method 7D *Determination of Nitrogen Oxide Emissions from Stationary Sources (Alkaline-Permanganate/Ion Chromatographic Method)*
USEPA Method 7E	means USEPA Method 7E *Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)*
USEPA Method 10	means USEPA Method 10 *Determination of Carbon Monoxide Emissions from Stationary Sources (Instrumental Analyzer Procedure)*
USEPA Method 18	means USEPA Method 18 *Measurement of Gaseous Organic Compound Emissions by Gas Chromatography*
VOC	means volatile organic compound
waste	has the same meaning given to that term under the EP Act.
WET	means whole of effluent toxicity - the use of toxicity tests to determine the acute and/or chronic toxicity of effluents

END OF CONDITIONS

Schedule 1: Maps

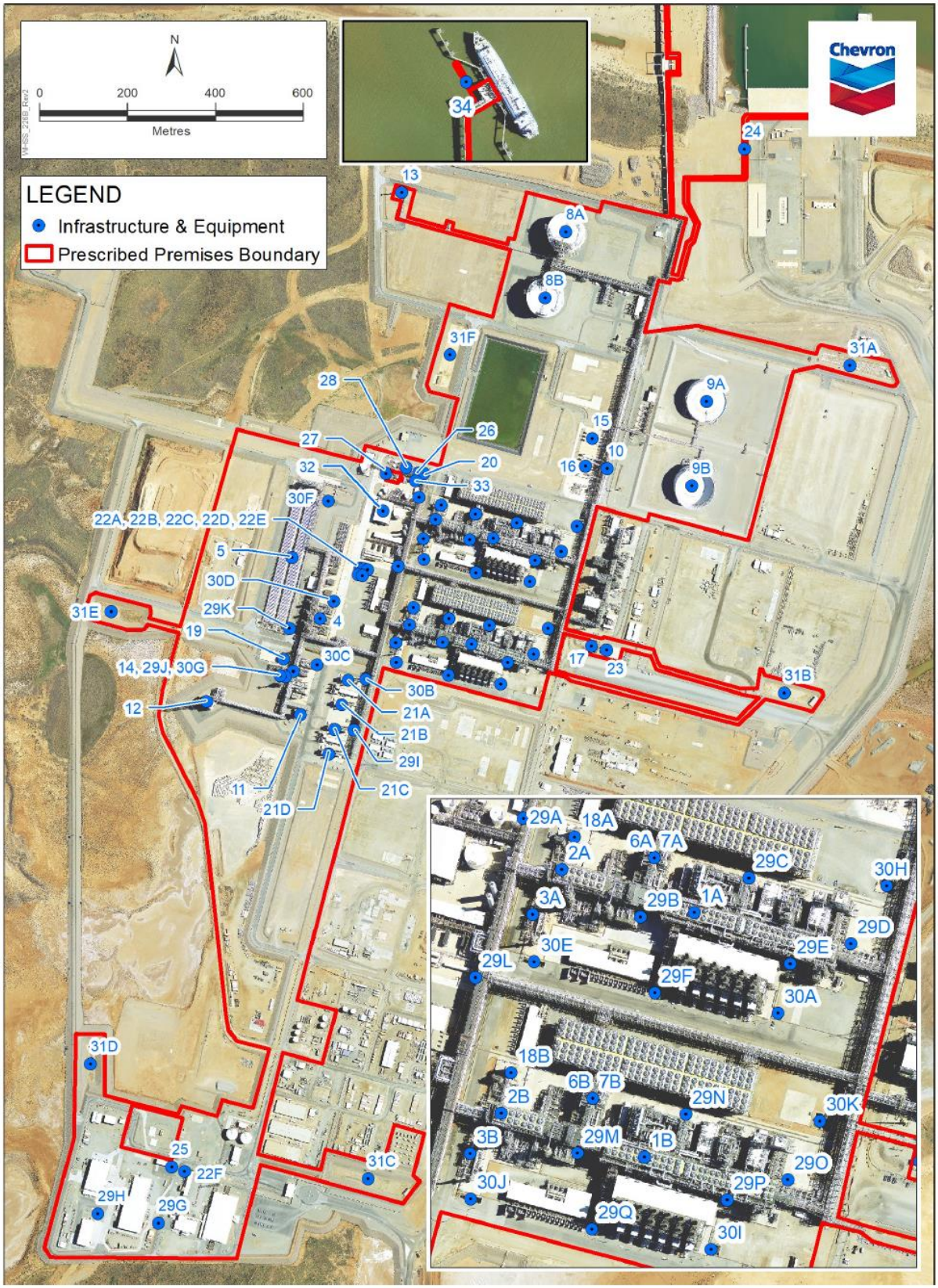
Premises map

The boundary of the prescribed premises is shown in red in the map below.



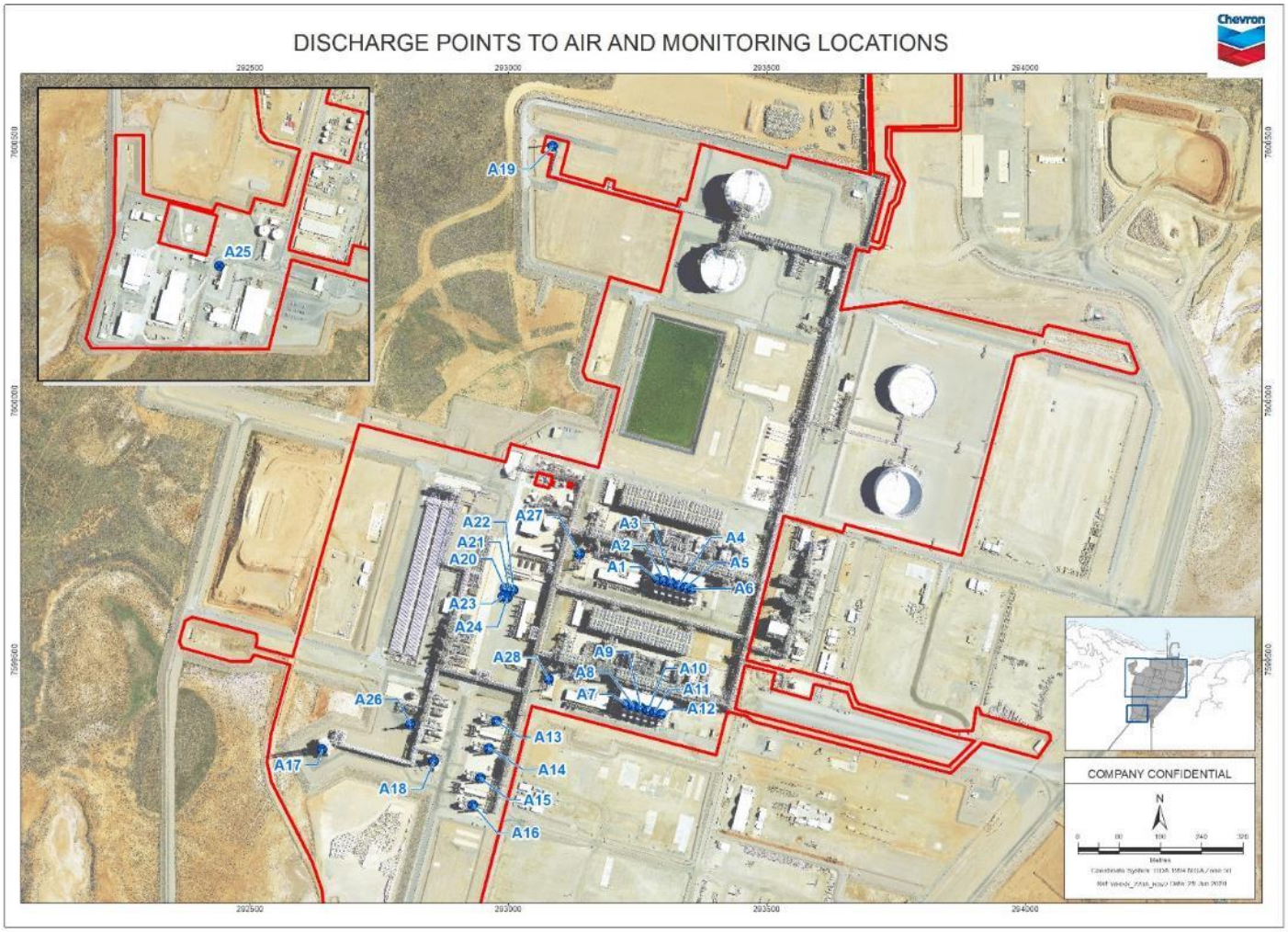
Site layout map

The Premises infrastructure and equipment locations are illustrated in the map below.



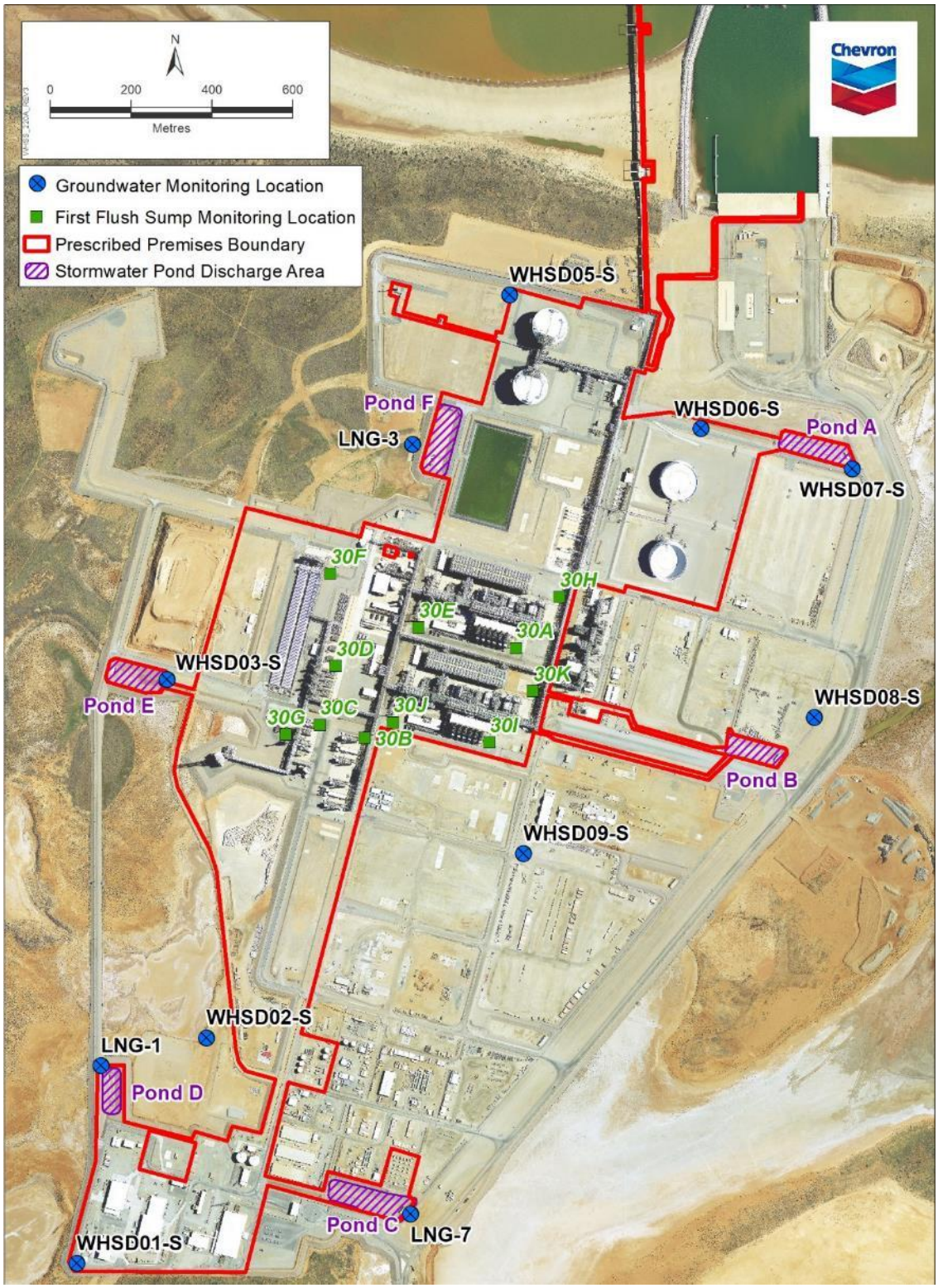
Map of discharge points to air and monitoring locations

The Premises discharge points to air and monitoring locations are illustrated in the map below.

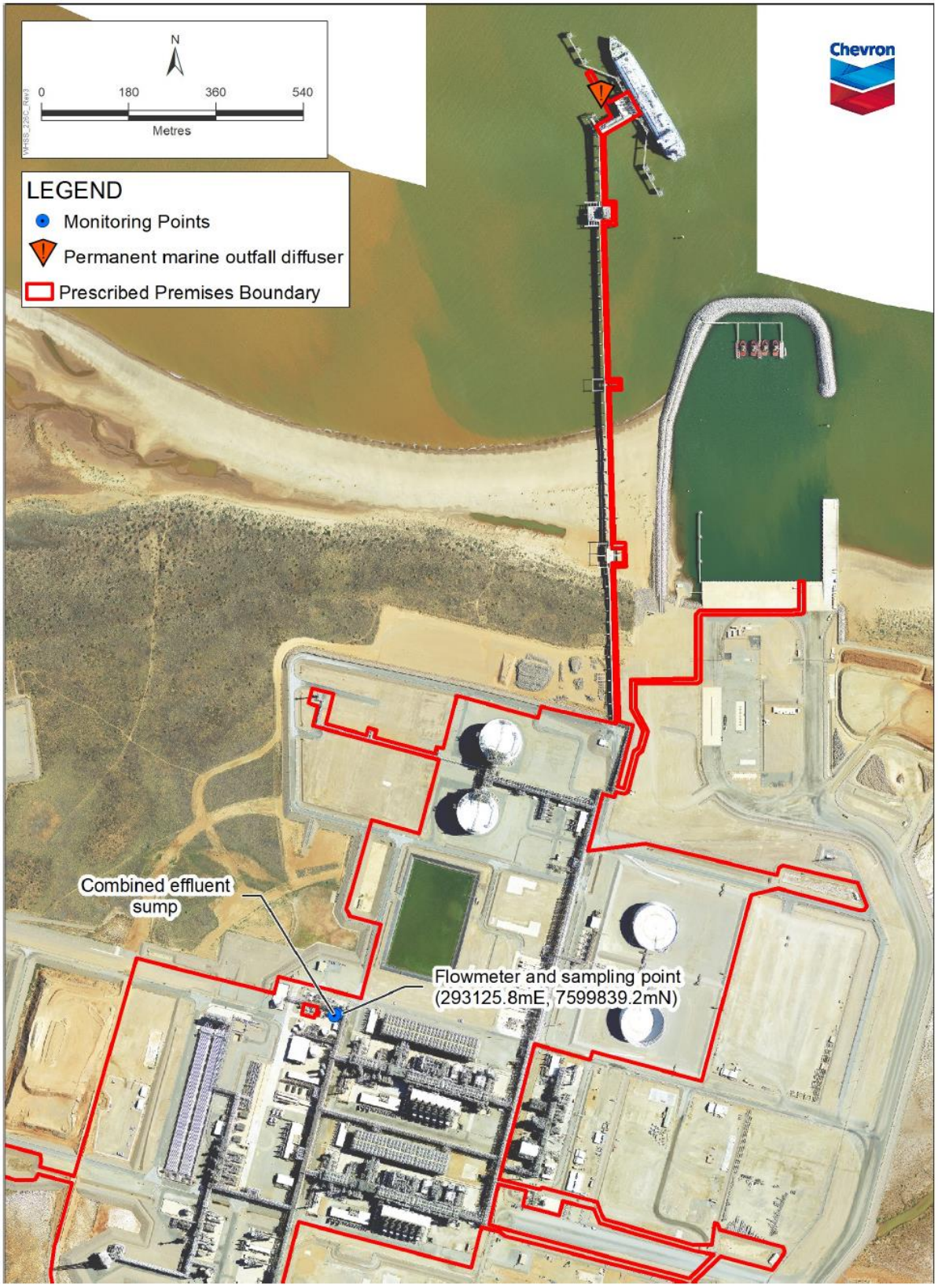


Map of discharge points to land and monitoring locations

The Premises discharge points to land and monitoring locations are illustrated in the map below.



Map of discharge points to water and on-shore monitoring locations



Schedule 2: Premises boundary

The premises boundary is defined by the coordinates in Table 16.

Table 16: premises boundary coordinates (GDA94, MGA Zone 50)

Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing
293699.7	7601516.3	294088.9	7600732.4	294204.8	7600052.4	293460.8	7599390.1	292575.8	7598392.1	292581.4	7599505.0	293538.7	7600449.9	293681.0	7601516.3
293700.6	7601467.1	294089.0	7600667.6	294036.1	7600098.1	293422.7	7599399.4	292584.8	7598411.0	292710.0	7599954.2	293546.0	7600473.7	293050.4	7599838.2
293678.0	7601466.6	294083.0	7600663.5	293980.2	7600085.8	293401.3	7599315.4	292664.0	7598387.8	292993.9	7599881.6	293700.3	7600437.8	293077.2	7599831.3
293687.3	7601149.7	293877.3	7600662.7	293877.3	7599700.9	293044.7	7599410.0	292676.2	7598424.3	293003.4	7599917.0	293692.4	7600769.6	293079.6	7599838.9
293710.1	7601150.1	293875.3	7600656.0	293651.2	7599761.5	292847.0	7598653.0	292746.6	7598406.9	293173.7	7599871.3	293716.2	7600769.9	293085.4	7599837.5
293711.1	7601127.2	293874.9	7600526.5	293646.8	7599745.1	292937.2	7598629.1	292783.9	7598540.3	293214.1	7600024.4	293715.7	7600800.9	293087.0	7599843.4
293688.4	7601126.8	293868.4	7600521.9	293532.4	7599777.2	292904.4	7598508.2	292709.6	7598560.1	293150.5	7600041.3	293692.4	7600800.1	293082.1	7599844.9
293697.4	7600810.9	293740.6	7600521.9	293459.9	7599498.4	292814.8	7598532.1	292691.6	7598583.4	293143.5	7600056.2	293683.1	7601132.4	293084.3	7599853.8
293720.2	7600811.4	293740.8	7600472.1	293543.8	7599476.9	292757.7	7598300.9	292685.3	7598616.2	293196.1	7600239.6	293705.3	7601132.1	293056.2	7599861.0
293721.3	7600762.3	293766.5	7600422.0	293547.7	7599480.8	292901.4	7598265.2	292637.7	7599055.4	293293.6	7600211.3	293705.1	7601143.8	293507.9	7599443.6
293696.4	7600761.8	293755.7	7600383.2	293662.3	7599451.2	292912.5	7598312.0	292619.7	7599109.4	293334.8	7600363.5	293682.1	7601143.0	293515.7	7599474.6
293707.0	7600442.7	293745.3	7600372.5	293670.9	7599425.4	293043.4	7598277.5	292540.3	7599263.9	293074.6	7600434.3	293671.5	7601475.6	293457.2	7599488.9
293735.8	7600434.7	293725.5	7600298.6	293677.1	7599415.0	293070.2	7598368.4	292531.8	7599302.0	293084.6	7600475.2	293693.7	7601476.2	293438.1	7599404.4
293703.2	7600309.2	293717.2	7600293.8	293861.2	7599362.8	293138.2	7598348.1	292540.3	7599359.1	293064.9	7600480.5	293693.7	7601508.9	293479.8	7599392.5
293717.0	7600305.3	293700.1	7600297.5	293898.3	7599362.6	293113.2	7598252.9	292577.2	7599490.2	293073.3	7600511.7	293674.6	7601508.4	293852.2	7599293.2
293737.4	7600381.1	293697.4	7600287.0	293904.9	7599407.8	293127.9	7598238.7	292506.4	7599509.2	293116.5	7600500.1	293670.1	7601654.3	293902.3	7599342.8
293746.9	7600388.3	293672.5	7600293.6	293910.9	7599406.1	293089.0	7598188.3	292499.1	7599497.1	293100.2	7600437.9	293668.5	7601654.3	293866.8	7599349.6

Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing	Easting	Northing
293756.6	7600423.9	293642.1	7600175.7	293915.5	7599393.9	292764.0	7598277.0	292460.7	7599496.9	293184.5	7600414.7	293658.5	7601671.8	293667.0	7599406.8
293730.8	7600470.5	293761.6	7600191.0	294044.8	7599358.1	292709.0	7598062.4	292367.5	7599522.8	293189.0	7600429.7	293691.5	7601690.8	293655.1	7599436.7
293731.3	7600529.0	294033.2	7600126.1	294048.5	7599352.2	292284.1	7598065.6	292362.2	7599535.0	293205.4	7600424.8	293639.9	7601780.2	293590.9	7599452.8
293865.3	7600531.9	294037.2	7600140.9	294048.5	7599345.6	292270.9	7598087.8	292373.6	7599575.0	293201.5	7600410.3	293648.6	7601785.2	293583.3	7599423.4
293865.4	7600662.9	294044.8	7600146.2	294024.0	7599310.5	292338.5	7598337.4	292387.1	7599582.1	293326.3	7600376.4	293686.1	7601720.2	292586.0	7598383.0
293872.5	7600671.9	294200.2	7600109.3	293916.9	7599338.9	292342.7	7598575.3	292511.1	7599549.8	293329.8	7600390.7	293725.5	7601743.0	292471.1	7598413.8
294079.1	7600673.4	294218.6	7600062.3	293855.5	7599280.7	292408.8	7598574.6	292512.9	7599536.3	293343.6	7600386.9	293751.6	7601697.6	292445.5	7598318.0
294078.9	7600732.4	294212.9	7600053.2	293473.0	7599380.6	292409.2	7598434.4	292510.0	7599524.1	293371.6	7600495.9	293676.5	7601654.2	292560.3	7598287.2

Schedule 3: Reportable events (ambient air monitoring)

Reportable event reports (ambient air monitoring)

The reports must contain in relation to a reportable event (condition 15):

1. the reportable event date(s);
2. the sampling or measurement date;
3. the raw monitoring data relating to the reportable event in tabulated form;
4. time series graphical plots for the day on which the reportable event occurred;
5. where there is an exceedance to reportable event criteria, details of investigation and mitigation measures must be provided and include the following:
    - confirmation that data received is correct (no instrument fault);
    - determination of the source of the exceedance to establish whether exceedance is attributed to the licence holder's activities through:
        - review of meteorological data including wind speed and direction; and
        - review of bushfires or other emergencies in the local area.
    - where a reportable event may be attributed to the licence holder's activities through the investigation steps above, a review of:
        - the operational status of all GTGs, GTs, AGTO, flare systems and associated emission control technology;
        - start-up, shut-down, upset conditions or maintenance activities occurring which may have contributed to the exceedance of the reportable event criteria; and
        - any incidents reported on the premises which may have contributed to the exceedance of the reportable event criteria.
    - where a reportable event is determined to be attributed to the licence holder's activities, corrective and mitigation measures undertaken including but not limited to:
        - actions taken by site personnel to address any start-up, shut-down or upset conditions occurring;
        - maintenance of applicable pollution control equipment; and
        - audit of any process controls.

Schedule 4: Environmental Quality Objectives and Levels of Ecological Protection

As taken from Ministerial Statement 873 (Wheatstone Development – gas processing, export facilities and infrastructure)

Area	Environmental Quality Objectives	Level of Ecological Protection for Maintenance of Ecosystem Integrity
Zone of initial dilution – maximum 70 m radius around diffuser or discharge.	• Maintenance of ecosystem integrity. • Maintenance of seafood for human consumption. • Maintenance of aquaculture. • Maintenance of primary contact recreation. • Maintenance of secondary contact recreation. • Maintenance of aesthetic values. • Maintenance of cultural and spiritual values. • Maintenance of industrial water supply.	**Low** - To allow for large changes in the quality of water, sediment and biota (e.g. Large changes in contaminant concentrations causing large changes beyond natural variation in the natural variation in the natural diversity of species and biological communities, rates of ecosystem processes and abundance/biomass of marine life, but which do not result in bioaccumulation/biomagnification in nearby high ecological protection areas). For this protection level only the 80% species protection guideline trigger values* for potentially bio-accumulating toxicants in water apply. There should be no bioaccumulation in adjacent high ecological protection areas.
Marine waters within 250 m from ship turning basin and berthing areas and the area enclosed by the Marine Offloading Facility breakwaters.	• Maintenance of ecosystem integrity. • Maintenance of seafood for human consumption. • Maintenance of aquaculture. • Maintenance of primary contact recreation. • Maintenance of secondary contact recreation. • Maintenance of aesthetic values. • Maintenance of cultural and spiritual values. • Maintenance of industrial water supply.	**Moderate** - To allow moderate changes in the quality of water, sediment and biota (eg moderate changes in contaminant concentrations that cause small changes, beyond natural variation, in ecosystem processes and abundance/biomass of marine life, but no detectable changes from the natural diversity of species and biological communities). For this protection level the 90% species protection guideline trigger values* for toxicants in water apply and for discharges that contain a mixture of toxicants, the sum of the concentrations of the primary toxicants (up to 5 toxicants) should not exceed the sum of the relevant trigger values. For other physical and chemical parameters the trigger values are based on the 95th percentile of natural background measurements. Trigger values should be derived in accordance with the recommended approaches in ANZECC & ARMCANZ (2000). For sediments the ISQG-low* apply. For dissolved oxygen the outfalls should preferably be managed so that they do not cause the median dissolved oxygen concentration in waters ≤0.5 metres from the seafloor, calculated over a period of up to 6 weeks, to fall below 80% saturation at any site, but they should never cause dissolved oxygen concentrations to fall below 60% saturation.

Area	Environmental Quality Objectives	Level of Ecological Protection for Maintenance of Ecosystem Integrity
Marine waters beyond the areas of Moderate and Low Ecological Protection.	• Maintenance of ecosystem integrity. • Maintenance of seafood for human consumption. • Maintenance of aquaculture. • Maintenance of primary contact recreation. • Maintenance of secondary contact recreation. • Maintenance of aesthetic values. • Maintenance of cultural and spiritual values. • Maintenance of industrial water supply.	**High** – To allow small changes in the quality of water, sediment and biota (e.g. small changes in contaminant concentrations with no resultant detectable changes beyond natural variation in the diversity of species and biological communities, ecosystem processes and abundance/biomass of marine life). For this protection level the 99% species protection guideline trigger values* for toxicants in water apply (except for cobalt for which the 95% species protection guideline should apply) and for discharges that contain a mixture of toxicants, the sum of the concentrations of the primary toxicants (up to 5 toxicants) should not exceed the sum of the relevant trigger values. For other physical and chemical parameters the trigger values are based on the 80th percentile of natural background measurements. Trigger values should be derived in accordance with the recommended approaches in ANZECC & ARMCANZ (2000). For sediments the ISQG-low* apply. For dissolved oxygen the outfalls should preferably be managed so that they do not cause the median dissolved oxygen concentration in waters ≤0.5 metres from the seafloor, calculated over a period of up to 6 weeks, to fall below 90% saturation at any site, but they should never cause dissolved oxygen concentrations to fall below 60% saturation.
Marine waters adjacent to the Ashburton River mouth identified for maximum ecological protection in map 5 of DoE Marine Report 1 (2006).	• Maintenance of ecosystem integrity. • Maintenance of seafood for human consumption. • Maintenance of aquaculture. • Maintenance of primary contact recreation. • Maintenance of secondary contact recreation. • Maintenance of aesthetic values. • Maintenance of cultural and spiritual values. • Maintenance of industrial water supply.	**Maximum** – No detectable changes beyond natural variation in ecosystem processes, the quality of water, sediment and biota, the diversity of species and biological communities or in the abundance/biomass of marine life.

* From National Water Quality Management Strategy Report 4, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (2000) or its updates.