Permit[1]

Environmental Protection Act 1994

Environmental authority

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

Permit[1] number: EPPR00794413

Environmental authority takes effect 26 August 2016

The anniversary date of this environmental authority is 5 September each year. An annual return and the payment of the annual fee will be due each year on this day.

Environmental authority holder(s)

Name	Registered address
NewGen Braemar 2 Pty Ltd	Level 39 111 Eagle Street BRISBANE CITY QLD 4000

Environmentally relevant activity and location details

Environmentally relevant activity(ies)	Location(s)
14-(1) Electricity generation >10MW gas 60-1(a) Waste disposal <50000t yr (1)(a)	Grahams Road Kogan QLD 4406 - Lot 101 Plan SP221421

Additional information for applicants

Environmentally relevant activities

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

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

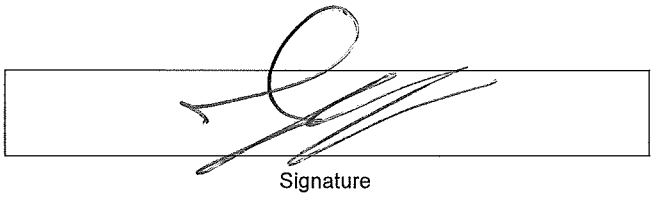
[1] Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation

Contaminated land

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

- a notifiable activity (as defined in Schedule 3) that is being, or has been, carried out on the land (notice must be given within 20 days)
- an event involving a hazardous contaminant on the land, or a change in the condition of the contaminated land, that is causing, or is reasonably likely to cause, serious or material environmental harm (notice must be given within 24 hours).

For further information, including the form for giving notice, refer to the Queensland Government website http://www.qld.gov.au/ (using the search term 'managing contaminated land').



Signature

26/8/2016

Date

Tariq Khan
Department of Environment and Heritage Protection
Delegate of the administering authority
Environmental Protection Act 1994

Enquiries:
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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)

Conditions of environmental authority

PART A – Conditions for ERA 14-1 – Electricity generation

PART B – Conditions for ERA 60-1(a) – Waste disposal

PART A – Conditions for ERA 14(1) – Electricity generation

The environmentally relevant activity(ies) conducted at the location as described above must be conducted in accordance with the following site specific conditions of approval.

Schedule A - Activity	
Condition number	**Condition**
A1	In carrying out the environmentally relevant activities, you must take all reasonable and practicable measures to prevent and / or minimise the likelihood of environmental harm being caused. Any environmentally relevant activity, that, if carried out incompetently, or negligently, may cause environmental harm, in a manner that could have been prevented, shall be carried out in a proper manner in accordance with the conditions of this approval. Note: This approval authorises the environmentally relevant activity. It does not authorise environmental harm unless a condition contained within this approval explicitly authorises that harm. Where there is no condition or the approval is silent on a matter, the lack of a condition or silence shall not be construed as authorising harm.
A2	The holder must: – install all measures, plant and equipment necessary to ensure compliance with the conditions of this approval; and – maintain such measures, plant and equipment in a proper and efficient manner; and – operate such measures, plant and equipment in a proper and efficient manner.

A3	From commencement of the activity, a Site Based Management Plan (SBMP) must be implemented. The SBMP must identify all sources of environmental harm, including but not limited to the actual and potential release of all contaminants, the potential impact of these sources and what actions will be taken to prevent the likelihood of environmental harm being caused. The SBMP must also provide for the review and 'continual improvement' in the overall environmental performance of all Environmentally Relevant Activities that are carried out. The site based management plan must address the following matters: - Environmental commitments – a commitment by senior management to achieve environmental goals - Identification of environmental issues and potential impacts - Control measures for routine operations to minimise likelihood of environmental harm - Contingency plans and emergency procedures for non-routine situations - Organisational structure and responsibility - Effective communication - Monitoring of the contaminant releases - Conducting environmental impact assessments - Staff training - Record keeping - Periodic review of environmental performance and continual improvement.
A4	The site based management plan must not be implemented or amended in a way that contravenes any conditions of this approval.
A5	This condition applies to the site based management plan required by condition A3. A suitably qualified third party auditor must certify in writing that the site based management plan has been prepared: a) by a suitably qualified person with at least 5 years experience in the relevant area; b) in a manner that is consistent with the requirements of condition A3; and c) by having regard to, and appropriately applying, the relevant guidelines (being those applicable on a national, state or regional basis) which the third party auditor considers should be applied in undertaking the site based management plan including relevant Environment Australia, ANZECC and EHP guidelines where published.
A6	A competent person(s) must conduct any monitoring required by this approval.
A7	Record, compile and keep all monitoring results required by this approval and present this information to the administering authority when requested.
A8	All records required by this approval must be kept for 5 years.

A9	A record must be maintained of at least the following events: (i) the time, date and duration of equipment malfunctions where the failure of the equipment resulted in the release of contaminants reasonably likely to cause environmental harm; (ii) any uncontrolled release of contaminants reasonably likely to cause environmental harm; and (iii) any emergency involving the release of contaminants reasonably likely to cause material or serious environmental harm requiring the use of fire-fighting equipment.
A10	Telephone the administering authority's Pollution Hotline or local office as soon as practicable after becoming aware of any release of contaminants not in accordance with the conditions of this approval.

Schedule B - Air

Condition number	**Condition**
B1	The release of dust and/or particulate matter resulting from the ERA must not cause an environmental nuisance at any nuisance sensitive or commercial place.
B2	The release of noxious or offensive odours and any other noxious or offensive airborne contaminants resulting from the activity must not cause a nuisance at any nuisance sensitive or commercial place.
B3	The release of contaminants to the atmosphere from a point source must only occur from those release points identified in Schedule B – Table 1 and must be directed vertically upwards without any impedance or hindrance.

Schedule B – Table 1 – Release of contaminants

Release point number	**Minimum release height (metres)**	**Minimum velocity (m/sec)**	**Contaminant release**	**Maximum release limit**
150MW unit U31 Turbine Stack	30	30.9 (normal operation)	NOx	25 ppmv (59 mg/m^3 @ 15% O_2)
150MW unit U32 Turbine Stack	30	30.9 (normal operation)	NOx	25 ppmv (59 mg/m^3 @ 15% O_2)
150MW unit U33 Turbine Stack	30	30.9 (normal operation)	NOx	25 ppmv (59 mg/m^3 @ 15% O_2)
Emergency Diesel Generator	3	-	-	-



<table>
<tr><td>B4</td><td>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.</td></tr>
<tr><td>B5</td><td>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 1 and monitored not less frequently than Schedule B – Table 2.

Schedule B – Table 2 – Required release point determinations
<table><tr><th>Determination required</th><th>Release point numbers</th><th>Frequency</th></tr><tr><td>Mass emission rate and concentration of oxides of nitrogen (NOx) in the flue gas at a 15 percent oxygen reference level</td><td>U31 Turbine Stack
U32 Turbine Stack
U33 Turbine Stack</td><td>During commissioning of the power plant and once every two years thereafter</td></tr></table></td></tr>
<tr><td>B6</td><td>The only type of fuel to be burnt in power generation under normal operating conditions is natural gas.</td></tr>
<tr><td>B7</td><td>The sulphur content of any fuel burnt in power generation is not to exceed 0.5 percent by weight.</td></tr>
<tr><td>B8</td><td>The holder of this approval must conduct and keep records of a monitoring program of contaminant releases to the atmosphere at the release points, frequency, and for the parameters specified in Schedule B – Table 2 and which complies with the following:
(a) Monitoring provisions for the release points listed in Schedule B – Table 2 must comply with the Australian Standard AS 4323.1 – 1995 “Stationary source emissions Method 1: Selection of sampling provisions”.
(b) The following tests must be performed for each required determination specified in Table 2:
(i) gas velocity and volume flow rate;
(ii) temperature;
(iii) water vapour concentration
(c) Where practicable samples must be representative of the contaminants discharged when emissions are expected to be normal.</td></tr>
</table>

B9	When requested by the Administering Authority, contaminant monitoring and recording must be undertaken to investigate any complaint of contamination, and the results notified within 14 days to the administering authority. If you can provide evidence through monitoring that the limits in Schedule B – Table 1 are not being exceeded then you shall not be in breach of condition B4 with regards to any release of contaminants listed in Schedule B – Table 1. When monitoring is requested the following must be complied with:
	- monitoring provisions for the release points in Schedule B – Table 1 must comply with the Australian Standards AS 4323.1 – 1995 'Stationary source emissions Method 1: Selection of sampling positions'.
	- The following tests must be performed for each required determination specified in Schedule B – Table 1:
	  - gas velocity and volume flow rate;
	  - temperature
	  - water vapour concentration (moisture content),
	- where practicable samples must be taken when emissions are expected to be at maximum rates
	- during the sampling period the following additional information must be gathered:
	  - production rate at the time of sampling;
	  - raw materials used;
	  - number of equipment and mixing vessels operating;
	  - operating or mixing temperature;
	  - product made; and
	  - reference to the actual test methods and accuracies.

Schedule C - Water	
Condition number	**Condition**
C1	Contaminants must not be released from the site to any waters or the bed and banks of any waters.
C2	There must be no release of stormwater runoff that has been in contact with any contaminants at the site to any waters, roadside gutter or stormwater drain.
C3	Erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.
C4	The size of any sedimentation dam must be sufficient to contain the run-off expected from a 24 hour storm with an average recurrence interval of 1 in 5 years.



C5	All ponds used for the storage or treatment of contaminants at the authorised place must be constructed, installed and maintained: – so as to minimise the likelihood of any release of effluent through the bed and banks of the pond to any waters (including ground water); – so that a freeboard of not less than 0.2 metres is maintained at all times, except in emergencies; and – so as to ensure the stability of the pond's construction.
C6	Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of contaminants or wastes.
Schedule D - Noise	
Condition number	**Condition**
D1	Noise from the ERA must not cause an environmental nuisance at any nuisance sensitive place or commercial place.
D2	All noise from activities must not exceed the levels specified in Schedule D – Table 1 Noise limits at any nuisance sensitive or commercial place.

Schedule D – Table 1 – Noise limits

Noise level db(A) measured as	Monday to Saturday			Sundays and public holidays		
	7am-6pm	6pm-10pm	10pm-7am	9am-6pm	6pm-10pm	10pm-9am
	Noise measured at a 'Noise sensitive place'					
$L_{A10, adj, 10 mins}$	33	30	30	30	30	30

D3	When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance, and the results notified within 14 days to the administering authority. Monitoring must include: – $L_{A10, adj, 10 mins}$ – $L_{A1, adj, 10 mins}$ – the level and frequency of occurrence of impulsive or tonal noise; – atmospheric conditions including speed and direction; – effects due to extraneous factors such as traffic noise; and – location, date and time of recording.
D4	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.
Schedule E - Waste	
Condition number	**Condition**
E1	All regulated waste removed from the site must be removed by a person who holds a current approval to transport such waste under the provisions of the *Environmental Protection Act 1994.*
Schedule F - Land	
Condition number	**Condition**
F1	The only contaminated materials to be permitted to be released to the Braemar 2 Power Station regulated dam for disposal by evaporation are: – waste from on-site water treatment plant (backwash, CIP chemicals and waste brine); – evaporative cooler blowdown and spill; and – stormwater and fire-fighting water with the potential to be contaminated with oil and grease via oil/water separator.
F2	Contaminants must not be released to land with the exception of releases in accordance with conditions F1.
F3	Spillage of all chemicals and fuels must be contained within an on-site containment system and controlled in a manner that prevents environmental harm. Note: All petroleum product storages must be designed, constructed and maintained in accordance with AS 1940 – Storage and Handling of Flammable and Combustible Liquids.



Schedule G - Community	
Condition number	**Condition**
G1	The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request: (a) Time, date, name and contact details of the complainant; (b) reasons for the complaint; (c) any investigations undertaken; (d) conclusions formed; and (e) any actions taken.
G2	In consultation with the administering authority, cooperate with and participate in any community environmental liaison committee established in respect of either the site specifically, or the industrial estate where the site is located.

PART B – Conditions for ERA 60-1(a) – Waste disposal

Agency interest: General	
Condition number	**Condition**
G1	In carrying out an ERA to which this approval relates, all reasonable and practicable measures must be taken to prevent and / or minimise the likelihood of environmental harm being caused.
G2	The operator of an ERA to which this approval relates must: (a) install all measures, plant and equipment necessary to ensure compliance with the conditions of this approval; and (b) maintain such measures, plant and equipment in a proper and efficient condition; and (c) operate such measures, plant and equipment in a proper and efficient manner.
G3	From commencement of an ERA to which this approval relates, a site based management plan (SBMP) must be implemented. The SBMP must identify all sources of environmental harm, including but not limited to the actual and potential release of all contaminants, the potential impact of these sources and what actions will be taken to prevent the likelihood of environmental harm being caused. The SBMP must also provide for the review and 'continual improvement' in the overall environmental performance of all ERAs that are carried out. The SBMP must address the following matters: (a) Environmental commitments – a commitment by senior management to achieve specified and relevant environmental goals (b) Identification of environmental issues and potential impacts (c) Control measures for routine operations to minimise likelihood for environmental harm (d) Contingency plans and emergency procedures for non-routine situations (e) Organisational structure and responsibility (f) Effective communication (g) Monitoring of contaminant releases (h) Conducting environmental impact assessments (i) Staff training (j) Record keeping (k) Periodic review of environmental performance and continual improvement
G4	Record, compile and keep all monitoring results required by this approval and present this information to the administering authority when requested.
G5	All records required by this approval must be kept for 5 years.
G6	Measures must be taken to prevent unauthorised access to the site to which this approval relates.

G7	An effective fire break must be provided and maintained.
G8	Telephone the administering authority's Pollution Hotline or local office as soon as practicable after becoming aware of any release of contaminants not in accordance with the conditions of this approval.
G9	A written notice detailing the following information must be provided to the administering authority within 14 days of any advice provided in accordance with condition G8: a) the name of the operator, including their approval / registration number; b) the name and telephone number of a designated contact person; c) quantity and substance released; d) vehicle and registration details; e) person/s involved (driver and any others) f) the location and time of the release; g) the suspected cause of the release; h) a description of the effects of the release; i) the results of any sampling performed in relation to the releases; j) actions taken to mitigate any environmental harm caused by the release; and k) proposed actions to prevent a recurrence of the release.
G10	A competent person(s) must conduct any monitoring required by this approval.
G11	All instruments, equipment and measuring devices used for measuring and monitoring in accordance with any condition of this approval must be calibrated, and appropriately operated and maintained.

Agency interest: Air	
Condition number	**Condition**
A1	The release of noxious and offensive odours or any other noxious or offensive airborne contaminants resulting from the activity must not cause a nuisance at any nuisance sensitive or commercial place.
A2	The release of dust and/or particulate matter resulting from the ERA must not cause an environmental nuisance at any nuisance sensitive or commercial place.

A3	Dust and particulate matter must not exceed the following levels when measured at any nuisance sensitive or commercial place: a) Dust deposition of 120 milligrams per square metre per day, 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 150 micrograms per cubic metre over a 24 hour averaging time, at a nuisance sensitive or commercial place downwind of the site, when monitored in accordance with: - 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 - 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.
A4	When requested by the administering authority, dust and particulate monitoring must be undertaken to investigate any complaint of environmental nuisance caused by dust and/or particulate matter, and the results notified within 14 days to the administering authority following completion of monitoring. Monitoring must be carried out at a place(s) relevant to the potentially affected dust sensitive place and at upwind control sites and must include: a) for a complaint alleging dust nuisance, dust deposition; and b) for a complaint alleging adverse health effects caused by dust, the concentration per cubic metre of particulate matter with an aerodynamic diameter of less than 10 micrometre (µm) (PM10) suspended in the atmosphere over a 24 hour period.

Agency interest: Land	
Condition number	**Condition**
L1	The site (including all disturbed areas such as slopes, borrow pits, stockpile and screening areas) must be rehabilitated in a manner such that: (a) suitable native species of vegetation are planted and established; (b) potential for erosion of the site is minimised; (c) the quality of stormwater, other water and seepage released from the site is such that releases of contaminants such as suspended solids, turbidity, total dissolved salts, pH, total iron, total aluminium, and total manganese are not likely to cause environmental harm; (d) the likelihood of environmental nuisance being caused by release of dust is minimised; (e) the water quality of any residual water body meets relevant criteria for subsequent uses and does not have potential to cause environmental harm; (f) the final landform is stable and not subject to slumping; and (g) any actual and potential acid sulfate soils in or on the site are either not disturbed, or are submerged or treated, so as to not be likely to cause environmental harm.
L2	The only contaminated materials to be permitted to be released to the Braemar 2 Power Station regulated dam for disposal by evaporation are: - waste from on-site water treatment plant (backwash, CIP chemicals and waste brine); - evaporative cooler blowdown and spill; and - stormwater and fire-fighting water with the potential to be contaminated with oil and grease via oil/water separator.
L3	Contaminants must not be released to land with the exception of releases in accordance with conditions L2.
L4	Spillage of all chemicals and fuels must be contained within an on-site containment system and controlled in a manner that prevents environmental harm. Note: All petroleum product storages must be designed, constructed and maintained in accordance with AS 1940 – Storage and Handling of Flammable and Combustible Liquids.
Agency interest: Noise	
Condition number	**Condition**
N1	Noise from the ERA must not cause an environmental nuisance at any nuisance sensitive or commercial place.

N2	When requested by the administering authority, noise monitoring must be undertaken to investigate any complaint of noise nuisance, and the results notified within 14 days to the administering authority. Monitoring must include: – $L_{A10, adj, 10 mins}$ – $L_{A1, adj, 10 mins}$ – the level and frequency of occurrence of impulsive or tonal noise; – atmospheric conditions including speed and direction; – effects due to extraneous factors such as traffic noise; and – location, date and time of recording.
Agency interest: Social	
Condition number	**Condition**
S1	The operator of the ERA must record the following details for all complaints received and provide this information to the administering authority on request: (f) Time, date, name and contact details of the complainant; (g) reasons for the complaint; (h) any investigations undertaken; (i) conclusions formed; and (j) any actions taken.
Agency interest: Dams	
Condition number	**Condition**
D1	**Assessment of consequence category** The **consequence category** of any structure must be **assessed** by a **suitably qualified and experienced person** in accordance with *the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* at the following times: (a) prior to the design and construction of the structure, if it is not an existing structure; or (b) prior to any change in its purpose or the nature of its stored contents.
D2	A **consequence assessment** report and **certification** must be prepared for each **structure assessed** and the report may include a consequence assessment for more than one structure.
D3	Certification must be provided by the suitably qualified and experienced person who undertook the assessment, in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).*

D4	**Design and construction* of a regulated structure** Conditions D5 to D9 inclusive do not apply to existing structures. * Construction of a dam includes modification of an existing dam – refer to the definitions.
D5	All **regulated structures** must be designed by, and **constructed*** under the supervision of, a suitably qualified and experienced person in accordance with the requirements of the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*. * Certification of design and construction may be undertaken by different persons.
D6	Construction of a regulated structure is prohibited unless: (a) the **holder** has submitted a **consequence category assessment** report and certification to the administering authority; and (b) certification for the **design, design plan** and the associated operating procedures has been **certified** by a suitably qualified and experienced person in compliance with the relevant condition of this **authority**.
D7	Certification must be provided by the suitably qualified and experienced person who oversees the preparation of the design plan in the form set out in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*, and must be recorded in the Register of Regulated Structures.
D8	**Regulated structures** must: (a) be designed and constructed in compliance with the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933); (b) be designed and constructed with due consideration given to ensuring that the design integrity would not be compromised on account of: (i) floodwaters from entering the **regulated dam** from any **watercourse** or drainage line; and (ii) wall failure due to erosion by floodwaters arising from any watercourse or drainage line.
D9	Certification by the suitably qualified and experienced person who supervises the construction must be submitted to the administering authority on the completion of construction of the regulated structure, and state that: (a) the 'as constructed' drawings and specifications meet the original intent of the design plan for that regulated structure (b) construction of the regulated structure is in accordance with the design plan.

D10	**Notification of affected persons** All affected persons must be provided with a copy of the emergency action plan in place for each regulated structure (a) for existing structures that are regulated structures, within 10 business days of this condition taking effect; (b) prior to the operation of the new regulated structure; and (c) if the emergency action plan is amended, within 5 business days of it being amended.
D11	**Operation of a regulated structure** Operation of a regulated structure, except for an existing structure, is prohibited unless the holder has submitted to the administering authority in respect of regulated structure, all of the following: (a) one paper copy and one electronic copy of the design plan and certification of the 'design plan' in accordance with condition D6; (b) a set of 'as constructed' drawings and specifications; (c) certification of the 'as constructed drawings and specifications' in accordance with condition D9; (d) where the regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, a copy of the certified system design plan; (e) the requirements of this authority relating to the construction of the regulated structure have been met; (f) the holder has entered the details required under this authority, into a Register of Regulated Structures; and (g) there is a current operational plan for the regulated structure.
D12	For existing structures that are regulated structures: (a) where the existing structure that is a regulated structure is to be managed as part of an integrated containment system for the purpose of sharing the DSA volume across the system, the holder must submit to the administering authority within 12 months of the commencement of this condition a copy of the certified system design plan including that structure; and (b) there must be a current operational plan for the existing structures.
D13	Each regulated structure must be maintained and operated, for the duration of its operational life until decommissioned and rehabilitated, in compliance with the current operational plan and, if applicable, the current design plan and associated certified 'as constructed' drawings.
D14	**Mandatory reporting level** Conditions D15 to D16 inclusive only apply to Regulated Structures which have not been certified as low consequence category for 'failure to contain – overtopping'.

D15	The **Mandatory Reporting Level** (the **MRL**) must be marked on a regulated dam in such a way that during routine inspections of that dam, it is clearly observable.
D16	The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware, notify the administering authority when the level of the contents of a regulated dam reaches the MRL.
D17	The holder must, immediately on becoming aware that the MRL has been reached, act to prevent the occurrence of any unauthorised discharge from the regulated dam.
D18	The holder must record any changes to the MRL in the Register of Regulated Structures.
D19	**Design storage allowance** The holder must assess the performance of each regulated dam or linked containment system over the preceding November to May period based on actual observations of the available storage in each regulated dam or linked containment system taken prior to 1 July of each year.
D20	By 1 November of each year, storage capacity must be available in each regulated dam (or network of linked containment systems with a shared DSA volume), to meet the **Design Storage Allowance** (**DSA**) volume for the **dam** (or network of linked containment systems).
D21	The holder must, as soon as practicable but within forty-eight (48) hours of becoming aware that the regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, notify the administering authority.
D22	The holder must, immediately on becoming aware that a regulated dam (or network of linked containment systems) will not have the available storage to meet the DSA volume on 1 November of any year, act to prevent the occurrence of any unauthorised discharge from the regulated dam or linked containment systems.
D23	**Annual inspection report** Each regulated structure must be inspected each calendar year by a suitably qualified and experienced person.
D24	At each annual inspection, the condition and adequacy of all components of the **regulated structure** must be assessed and a suitably qualified and experienced person must prepare an **annual inspection report** containing details of the assessment and include a recommendations section, with any recommended actions to ensure the integrity of the regulated structure or a positive statement that no recommendations are required.
D25	The suitably qualified and experienced person who prepared the annual inspection report must certify the report in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933).*



D26	The holder must within 20 business days of receipt of the annual inspection report, provide to the administering authority: (a) The recommendations section of the annual inspection report; and (b) If applicable, any actions being taken in response to those recommendations; and (c) If, following receipt of the recommendations and (if applicable) recommended actions, the administering authority requests a copy of the annual inspection report from the holder, provide this to the administering authority within 10 business days of receipt of the request.
D27	**Decommissioning and rehabilitation** Regulated structures must not be abandoned but be either: (a) decommissioned and rehabilitated to achieve compliance with condition (D28); or (b) be left in-situ for a use by the landholder provided that: (i) it no longer contains contaminants that will migrate into the environment; and (ii) it contains water of a quality that is demonstrated to be suitable for its intended use(s); and (c) the holder of the environmental authority and the landholder agree in writing that the; (i) dam will be used by the landholder following the cessation of the environmentally relevant activity(ies); and (ii) landholder is responsible for the dam, on and from an agreed date.
D28	Before surrendering this environmental authority the site must be rehabilitated to achieve a safe, stable, non-polluting landform.
D29	**Register of regulated structures** A **Register of Regulated Structures** must be established and maintained by the **holder** for each **regulated structure**.
D30	The holder must provisionally enter the required information in the Register of Regulated Structures when a design plan for a regulated dam is submitted to the administering authority.
D31	The holder must make a final entry of the required information in the Register of Regulated Structures once compliance with condition (D11) and (D12) has been achieved.
D32	The holder must ensure that the information contained in the Register of Regulated Structures is current and complete on any given day.
D33	All entries in the Register of Regulated Structures must be approved by the chief executive officer for the holder of this authority, or their delegate, as being accurate and correct.
D34	The holder must, at the same time as providing the annual return, supply to the administering authority a copy of the records contained in the Register of Regulated Structures, in the electronic format required by the administering authority.



Agency interest: Water	
Condition number	**Condition**
WA1	Erosion protection measures and sediment control measures must be implemented and maintained to minimise erosion and the release of sediment.
WA2	Contaminants must not be released from the site to any waters or the bed and banks of any waters.
WA3	Suitable banks and/or diversion drains must be installed and maintained to exclude stormwater runoff from entering any ponds or other structures used for the storage or treatment of contaminants or wastes.

Definitions

Words and phrases used throughout this approval are defined below.

Where a definition or term used in this approval is sought and the term is not defined within this approval the definitions provided in the *Environmental Protection Act 1994*, its regulations, and Environmental Protection Policies shall be used.

Definitions - General

"administering authority" means the Department of Environment and Heritage Protection

"annual return" means the return required by the annual notice (under s.308 of the *Environmental Protection Act 1994*)

"approval" means environmental authority

$L_{A10, adj, 10 mins}$" means the A-weighted sound pressure level (adjusted for tonal character and impulsiveness of the sound) exceeded for 10% of any 10 minute measurement period, using Fast response

$L_{A1, adj, 10 mins}$" means the A-weighted sound pressure level (adjusted for tonal character and impulsiveness of the sound) exceeded for 1% of any 10 minute measurement period, using Fast response

"land" in the land schedule of this document means land excluding waters and the atmosphere

"NOx" means total oxides of Nitrogen including Nitrogen Oxide (NO) and Nitrogen Dioxide (NO_2)

"nuisance sensitive place" includes –

- a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
- a motel, hotel or hostel; or
- a kindergarten, school, university or other educational institution; or
- a medical centre or hospital; or
- a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
- a public thoroughfare, park or gardens; or
- a place used as a workplace, an office or for business or commercial purposes, and includes a place within the curtilage of such a place reasonable used by persons at that place.

"regulated waste" is defined in the *Environmental Protection Regulation 2008*

"waters" includes river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water natural or artificial watercourse, bed and bank of any waters, dams, non-tidal and tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

Definitions – Structures which are dams or levees

Affected person is someone whose drinking water can potentially be impacted as a result of discharges from a dam or their life or property can be put at risk due to dwellings or workplaces being in the path of a dam break flood.

Annual exceedance probability or AEP the probability that at least one event in excess of a particular

magnitude will occur in any given year.

Annual inspection report means an assessment prepared by a suitably qualified and experienced person containing details of the assessment against the most recent consequence assessment report and design plan (or system design plan);

(a) against recommendations contained in previous annual inspections reports;

(b) against recognised dam safety deficiency indicators;

(c) for changes in circumstances potentially leading to a change in consequence category;

(d) for conformance with the conditions of this authority;

(e) for conformance with the 'as constructed' drawings;

(f) for the adequacy of the available storage in each regulated dam, based on an actual observation or observations taken after 31 May each year but prior to 1 November of that year, of accumulated sediment, state of the containment barrier and the level of liquids in the **dam** (or network of linked containment systems);

(g) for evidence of conformance with the current operational plan.

Assessed or **assessment** by a suitably qualified and experienced person in relation to a consequence assessment of a dam, means that a statutory declaration has been made by that person and, when taken together with any attached or appended documents referenced in that declaration, all of the following aspects are addressed and are sufficient to allow an independent audit of the assessment:

(a) exactly what has been assessed and the precise nature of that determination;

(b) the relevant legislative, regulatory and technical criteria on which the assessment has been based;

(c) the relevant data and facts on which the assessment has been based, the source of that material, and the efforts made to obtain all relevant data and facts; and

(d) the reasoning on which the assessment has been based using the relevant data and facts, and the relevant criteria.

Associated works in relation to a dam, means:

(a) operations of any kind and all things constructed, erected or installed for that dam; and

(b) any land used for those operations.

Authority means an environmental authority or a development approval.

Certification means assessment and approval must be undertaken by a suitably qualified and experienced person in relation to any assessment or documentation required by this Manual, including design plans, 'as constructed' drawings and specifications, construction, operation or an annual report regarding regulated structures, undertaken in accordance with the Board of Professional Engineers of Queensland Policy Certification by RPEQs (ID: 1.4 (2A)).

Certifying, **certify or certified** have a corresponding meaning as 'certification'.

Construction or constructed in relation to a dam includes building a new dam and modifying or lifting an existing dam, but does not include investigations and testing necessary for the purpose of preparing a design plan.

Consequence in relation to a structure as defined, means the potential for environmental harm resulting from the collapse or failure of the structure to perform its primary purpose of containing, diverting or controlling

flowable substances.

Consequence category means a category, either low, significant or high, into which a dam is assessed as a result of the application of tables and other criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

Dam means a land-based structure or a void that contains, diverts or controls flowable substances, and includes any substances that are thereby contained, diverted or controlled by that land-based structure or void and **associated works**.

Dam crest volume means the volume of material (liquids and/or solids) that could be within the walls of a dam at any time when the upper level of that material is at the crest level of that dam. That is, the instantaneous maximum volume within the walls, without regard to flows entering or leaving (for example, via spillway).

Design plan is a document setting out how all identified consequence scenarios are addressed in the planned design and operation of a regulated structure.

Design storage allowance or DSA means an available volume, estimated in accordance with the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority, must be provided in a dam as at 1 November each year in order to prevent a discharge from that dam to an **annual exceedance probability** (AEP) specified in that Manual.

Designer for the purposes of a regulated dam, means the certifier of the design plan for the regulated dam.

Development approval means a development approval under the *Integrated Planning Act 1997* or the *Sustainable Planning Act 2009* in relation to a matter that involves an environmentally relevant activity under the *Environmental Protection Act 1994*.

Emergency action plan means documentation forming part of the operational plan held by the holder or a nominated responsible officer, that identifies emergency conditions that sets out procedures and actions that will be followed and taken by the dam owner and operating personnel in the event of an emergency. The actions are to minimise the risk and consequences of failure, and ensure timely warning to affected persons and the implementation of protection measures. The plan must require dam owners to annually review and update contact information where required.

Existing structure means a structure that prior to August 2016 meets any or both of the following, a structure:

(a) with a design that is in accordance with the Manual for Assessing Consequence Categories and Hydraulic Performance of Structures and that is considerably in progress;

(b) that is under considerable construction or that is constructed.

Extreme Storm Storage – means a storm storage allowance determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority.

Flare pit means containment area where any hydrocarbon that is discovered in an over-pressured reservoir during a drilling operation is diverted to, and combusted. The flare pit is only used during the drilling and work over process on a petroleum well.

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.

Holder means:

(a) where this document is an environmental authority, any person who is the holder of, or is acting under,

that environmental authority; or

(b) where this document is a development approval, any person who is the registered operator for that development approval.

Hydraulic performance means the capacity of a regulated dam to contain or safely pass flowable substances based on the design criteria specified for the relevant consequence category in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

Levee means an embankment that only provides for the containment and diversion of stormwater or flood flows from a contributing catchment, or containment and diversion of flowable materials resulting from releases from other works, during the progress of those stormwater or flood flows or those releases; and does not store any significant volume of **water** or **flowable substances** at any other times.

Low consequence dam means any dam that is not a high or significant consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)*.

Mandatory reporting level or MRL means a warning and reporting level determined in accordance with the criteria in the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority.

Manual means the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority, as amended from time to time.

Modification or modifying (see definition of 'construction')

Operational plan includes:

(a) normal operating procedures and rules (including clear documentation and definition of process inputs in the DSA);

(b) contingency and emergency action plans including operating procedures designed to avoid and/or minimise environmental impacts including threats to human life resulting from any overtopping or loss of structural integrity of the regulated structure.

Register of Regulated Structures includes**:**

(a) Date of entry in the register;

(b) Name of the structure, its purpose and intended/actual contents;

(c) The consequence category of the dam as assessed using the Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933);

(d) Dates, names, and reference for the design plan plus dates, names, and reference numbers of all document(s) lodged as part of a design plan for the dam;

(e) Name and qualifications of the suitably qualified and experienced person who certified the design plan and 'as constructed' drawings;

(f) For the regulated dam, other than in relation to any levees –

i. The dimensions (metres) and surface area (hectares) of the dam measured at the footprint of the dam;

ii. Coordinates (latitude and longitude in GDA94) within five metres at any point from the outside of the dam including its storage area



iii. Dam crest volume (megalitres);

iv. Spillway crest level (metres AHD).

v. Maximum operating level (metres AHD);

vi. Storage rating table of stored volume versus level (metres AHD);

vii. Design storage allowance (megalitres) and associated level of the dam (metres AHD);

viii. Mandatory reporting level (metres AHD);

(g) The design plan title and reference relevant to the dam;

(h) The date construction was certified as compliant with the design plan;

(i) The name and details of the suitably qualified and experienced person who certified that the constructed dam was compliant with the design plan;

(j) Details of the composition and construction of any liner;

(k) The system for the detection of any leakage through the floor and sides of the dam;

(l) Dates when the regulated dam underwent an annual inspection for structural and operational adequacy, and to ascertain the available storage volume for 1 November of any year;

(m) Dates when recommendations and actions arising from the annual inspection were provided to the administering authority;

(n) Dam water quality as obtained from any monitoring required under this authority as at 1 November of each year.

Regulated structure means any structure in the significant or high consequence category as assessed using the *Manual for assessing consequence categories and hydraulic performance of structures (ESR/2016/1933)* published by the administering authority. A regulated structure does not include:

- a fabricated or manufactured tank or container, designed and constructed to an Australian Standard that deals with strength and structural integrity of that tank or container;
- a sump or earthen pit used to store residual drilling material and drilling fluid only for the duration of drilling and well completion activities;
- a flare pit.

Residual drilling material means waste drilling materials including muds and cuttings or cement returns from well holes and which have been left behind after the drilling fluids are pumped out.

Spillway means a weir, channel, conduit, tunnel, gate or other structure designed to permit discharges form the dam, normally under flood conditions or in anticipation of flood conditions.

Structure means dam or levee.

Suitably qualified and experienced person in relation to regulated structures means a person who is a Registered Professional Engineer of Queensland (RPEQ) under the provisions of the *Professional Engineers Act 2002*, and has demonstrated competency and relevant experience:

- for regulated dams, an RPEQ who is a civil engineer with the required qualifications in dam safety and dam design
- for regulated levees, an RPEQ who is a civil engineer with the required qualifications in the design of flood protection embankments.

Note: It is permissible that a suitably qualified and experienced person obtain subsidiary certification from an RPEQ who has demonstrated competence and relevant experience in either geomechanics, hydraulic design or engineering hydrology.

System design plan means a plan that manages an integrated containment system that shares the required DSA and/or ESS volume across the integrated containment system.

Void means any constructed, open excavation in the ground.

Watercourse has the meaning in Schedule 4 of the *Environmental Protection Act 1994* and means:

(1) a river, creek or stream in which water flows permanently or intermittently—

(a) in a natural channel, whether artificially improved or not; or

(b) in an artificial channel that has changed the course of the watercourse.

(2) Watercourse includes the bed and banks and any other element of a river, creek or stream confining or containing water.

Waters includes all or any part of a river, stream, lake, lagoon, pond, swamp, wetland, unconfined surface water, unconfined water in natural or artificial watercourses, bed and banks of a watercourse, dams, non-tidal or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater.

Water year means the 12-month period from 1 July to 30 June.

Wet season means the time of year, covering one or more months, when most of the average annual rainfall in a region occurs. For the purposes of DSA determination this time of year is deemed to extend from 1 November in one year to 31 May in the following year inclusive.

END OF PERMIT

Queensland Government

Department of
Environment and Heritage Protection

To: NewGen Braemar 2 Pty Ltd
Arrow Energy
Level 39, 111 Eagle Street
BRISBANE QLD 4001

Email: Michael.Ryan@arrowenergy.com.au

Your reference: Amendment
Our reference: 222940

Application details

I refer to the amendment application that was received by the administering authority on 25-JUL-2016.

Land description: Grahams Road Kogan QLD 4406 Lot 101 Plan SP221421.

Decision

Your application has been approved and your environmental authority (reference EPPR00794413) is attached.

Details of the amendment application:

- Remove log book requirement from footnote to Part A Schedule B – Table 1
- Reduce monitoring frequency in Part A Schedule B – Table 2 to two yearly and renaming of turbine stacks
- Replacement of dam conditions W1 to W24 with model conditions for structures which are dams or levees

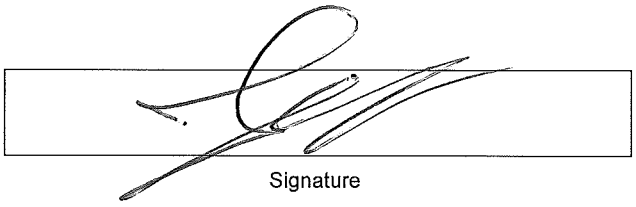
Details of amendment by agreement – s.215(1)(b)

- Rewording of Part B condition L2; condition copied to Part A as condition F1
- Removal of Part A conditions B9, B10 and B11
- Inconsistencies with noise monitoring and complaint handling resolved between Parts A and B resolved

Should you have any further enquiries, please contact PaLM on telephone 1300 130 372.

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Website **www.ehp.qld.gov.au**
ABN 46 640 294 485

Yours sincerely



26/8/2016

Signature

Date

Tariq Khan
Department of Environment and Heritage Protection
Delegate of the administering authority
Environmental Protection Act 1994

Enclosed

Permit - environmental authority (reference EPPR00794413)