Model operating conditions

ERA 16—Extractive and screening activities

Version history

Version	Date	Description of changes
1	26 November 2013	Original document
1.01	24 November 2015	Updated corporate style
2.00	16 February 2016	Revised to incorporate port model conditions & to include additional model operating conditions relating to characterisation of sediments prior to disposal, sediment plume-associated monitoring and dredge management plan.

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Contents

Summary

This document provides advice to potential environmental authority holders on the model operating conditions that will be applied to their environmental authority for environmentally relevant activity (ERA) 16 operations if a site specific application is made for the following thresholds:

1. ERA 16(1)—**dredging** activities
2. ERA 16(2)—extractive activities, other than **dredging**
3. ERA 16(3)—screening.

Key terms and phrases used in this document are defined in the definitions section and **bolded** throughout this document.

1 Introduction

The *Environmental Protection Act 1994* (EP Act) provides for the granting of environmental authorities for extractive and screening activities (i.e. ERA 16 extractive and screening activities).

These model operating conditions provide a framework of conditions that will apply to particular ERA 16 activities across the State of Queensland.

In giving approval under the EP Act for ERA 16 extractive and screening activities, the **administering authority** must address the regulatory requirements set out in the Environmental Protection Regulation 2008 and the standard criteria contained in the EP Act. The **administering authority** will give consideration to these regulatory requirements in the context of specific information about the environmental impacts of a particular project provided through application documentation for an environmental authority.

Conditions in your environmental authority will generally state what is and what is not permitted as part of the **activity**. They will relate to the operation of the **activity** and also cover rehabilitation requirements. Where **you** also require a development permit for your **activity** under the *Sustainable Planning Act 2009,* the conditions in your environmental authority will not deal with land-use issues, as these will be assessed and conditioned in your development approval.

An environmental authority approves the carrying out of an **activity** and does not approve any environmental harm unless a condition stated by the authority specifically states that an action or event can occur.

The **administering authority** may amend the conditions in this guideline to ensure they are current and appropriate (although conditions in your approval will only change in the circumstances set out in the EP Act).

2 How to use this guideline

2.1 New project applications

These model operating conditions provide a framework of conditions that will be applicable to all new environmental authorities for ERA 16(1), ERA 16(2) or ERA 16(3) where a site specific application is made.

As the model operating conditions are a framework only, additional conditions can be applied at the discretion of the **administering authority** to address risks that are specific to a particular operation or a particular site (e.g. where specific **environmental values** may be impacted). Also, if a particular model operating condition does not apply to an operation, then it will not form part of the conditions placed on the environmental authority. For example, a dredging activity may only be occurring in-stream and not have any land-based operations. Therefore, the conditions relating to stormwater may not apply and the **administering authority** will not need to place the particular stormwater-related conditions into the environmental authority.

The applicant can also request the addition of conditions or removal of model conditions to tailor the environmental authority to their particular operation. These requests are to be made through the site-specific application for an environmental authority supported by a justification for the change requested.

In some circumstances, payment of financial assurance may also be required. If financial assurance is required, it will be stated as an additional condition on the environmental authority.

These model operating conditions will not apply to ERA 16(1) or ERA 16(2) thresholds if the operation can meet the eligibility criteria published for these ERA thresholds. Eligibility criteria and their associated standard conditions can be viewed at www.business.qld.gov.au using the search term 'activities suitable for standard applications'. If the eligibility criteria apply to the **activity**, then a standard or variation application for an environmental authority can be made instead—then the standard conditions (and any variations to the standard conditions) for ERA 16 would be applied to the environmental authority rather than these model operating conditions.

2.2 Amendments

Where an amendment application involves altering activities covered by the model operating conditions, negotiation with **you** should take place before the original conditions are amended to reflect the model operating conditions. An amendment application is not an opportunity for the **administering authority** to impose these model operating conditions on an existing project, except to the extent that **you** seek to adopt the model operating conditions.

2.3 Transfer of environmental authority holder

The model operating conditions should not be imposed upon a transfer, unless at the request of the transferee.

3 Obligations under the EP Act

At all times **you** must meet your obligations under the EP Act. The following information is provided to help **you** understand some of the key environmental obligations under the EP Act which may relate to the operation of your **activity**. This is not an exhaustive list of all of the environmental obligations. Environmental obligations that **you** must comply with include:

1. general environmental duty—s. 319
2. duty to notify environmental harm—ss. 320-320G.

3.1 General environmental duty

A person must not carry out any **activity** that causes, or is likely to cause, environmental harm unless the person takes all reasonable and practicable **measures** to prevent or minimise the harm. This is a person's general environmental duty.

You have the responsibility to work out what **you** need to do to make sure that **you** manage your environmental risk and achieve the outcomes set out in your environmental authority.

Failure to comply with the general environmental duty is not, itself, an offence. However, causing an environmental nuisance or causing serious or material environmental harm is an offence unless **you** can prove:

- that the nuisance or harm was not unlawful, and
- **you** have complied with the general environmental duty.

3.2 Duty to notify of environmental harm

The duty to notify requires a person to give notice where serious or material environmental harm is caused or there is a risk of such harm and that harm is not authorised by the **administering authority**.

For more information on the duty to notify requirements, including who must be notified, how and when to notify, refer to the guideline The duty to notify of environmental harm (EM467).

4 Obligations under the SPD Act

Department of Environmental Heritage and Protection staff must be aware that the **administering authority** has certain obligations under the *Sustainable Ports Development Act 2015* (SPD Act). These restrictions apply to environmental authority applications for **capital dredging** undertaken within the Great Barrier Reef World Heritage Area.

Capital dredging for the purpose of establishing, constructing or improving a **port facility** cannot be authorised within a **restricted area** unless:

1) it falls within a **priority port's** master planned area, or
2) it is for the Port of Cairns inner harbour and the permit does not allow:
   a) the dredging of >50,000 m^3 of **dredge material**, and
   b) the dredging of >150,000 m^3 of **dredge material** within 4 years.

Capital dredging for the purpose of establishing, constructing or improving a **port facility** in a **priority port's** master planned area[1] must not be authorised within a **restricted area** without all necessary approvals.

Authorisation for **prescribed dredge material** to be disposed of within a **restricted area** must not be given unless the **dredge material** is beneficially reused[2].

[1] Refer to s. 6 of the *Sustainable Ports Development Act 2015.*

[2] Examples include land reclamation, beach nourishment or environmental restoration purposes – refer to s. 36 (2) of *Sustainable Ports Development Act 2015*

5 Offences under the legislation

This section sets out some of the offences that **you** should be aware of as **you** are carrying out your **activity**. If **you** commit one of these offences, **you** could be fined, prosecuted, or required by the **administering authority** to take some action. This is not an exhaustive list of all of the environmental offences under the legislation.

If **you** do commit an offence while carrying out your **activity**, the **administering authority** will take enforcement action in accordance with its enforcement guidelines.

5.1 Contravention of a condition of an environmental authority

It is a legal requirement for **you** to comply with the conditions in your environmental authority. **You** must also ensure that anyone operating under the environmental authority also complies with the conditions. This might include contractors visiting the site temporarily or transport operators loading and unloading materials on site, and all staff employed at the site. Multiple people may be prosecuted if an offence is committed.

If **you** think that **you** have breached a condition of your environmental authority, it is your responsibility to fix the problem and bring yourself back into compliance with the condition. **You** should not wait for the **administering authority** to tell **you** what do to. **You** may be required to contact the **administering authority** by the conditions in your environmental authority and the duty to notify.

Penalties for a breach of a condition of an environmental authority vary from Penalty Infringement Notices (PIN) for one-off offences that are easily rectified, through to the issuing of statutory notices—such as an Environmental Evaluation, Transitional Environmental Program, Temporary Emissions License or an Environmental Protection Order. In serious cases the **administering authority** may initiate court proceedings to have a court order issued or may prosecute those responsible for the breach.

5.2 Causing material or serious environmental harm

Material environmental harm has the meaning as defined in s. 16 of the EP Act. In summary, material environmental harm is environmental harm that costs more than $5,000 to clean up, or that causes (or has the potential to cause) more than $5,000 worth of damage to property.

Serious environmental harm has the meaning as defined in s. 17 of the EP Act. In summary, it is harm that is irreversible; has a high impact or widespread effects to the environment; is caused to an area of high conservation significance; or causes clean-up costs or property damage worth more than $50,000. Material and serious environmental harm excludes environmental nuisance.

5.3 Causing environmental nuisance

Environmental harm includes environmental nuisance. Environmental nuisance is unreasonable interference with an environmental value caused by aerosols, fumes, light, noise, odour, particles or smoke. It may also include an unhealthy, **offensive** or unsightly condition because of contamination. For activities that need an environmental authority, the most common causes of environmental nuisance are dust, noise and odour.

5.4 Depositing a prescribed contaminant in waters

Prescribed contaminants includes a wide variety of contaminants from inert substances such as earth, clay, gravel and sediment to substances such as chemicals, contaminants with a high or low pH, construction and building waste, gas, oil and sewage. For a full list of **prescribed water contaminants** refer to Schedule 9 of the EP Act.

It is your responsibility to ensure that **prescribed water contaminants** are not left in a place where they could enter a waterway, roadside gutter or stormwater drain, and to make sure that they do not actually get into one of those places. This includes making sure that stormwater falling on or running across your site does not leave the site contaminated. Where stormwater contamination occurs **you** must ensure that it is treated to remove contaminants. **You** should also consider where and how **you** store material used in your processes onsite to reduce the chance of water contamination.

6 Model operating conditions

Model operating conditions for dredging or extractive ERA 16 activities	
GENERAL	
G1	Any **activity** operating under this environmental authority must not be conducted contrary to any of the following limitations: 1. <INSERT extent, nature or limitations of the **activity** approved> 2. <REPEAT for all relevant activities approved>.
G2	All reasonable and practicable **measures** must be taken to minimise the likelihood of environmental harm being caused.
G3	Any breach of a condition of this environmental authority must be reported to the **administering authority** as soon as practicable, or at most, within 24 hours of **you** becoming aware of the breach. Records must be kept including full details of the breach and any subsequent actions undertaken.
G4	Other than as permitted by this environmental authority, the **release of a contaminant into the environment** must not occur.
G5	Environmental monitoring results must be kept until surrender of this environmental authority. All other information and records that are required by the conditions of this environmental authority must be kept for a minimum of five (5) years. All information and records required by the conditions of this environmental authority must be provided to the **administering authority,** or **nominated delegate** upon request, within the required timeframe and in the specified format.
G6	An **appropriately qualified person(s)** must monitor, record and interpret all parameters that are required to be monitored by this environmental authority and in the manner specified by this environmental authority.
G7	All analyses required under this environmental authority must be carried out by a laboratory that has **NATA** certification, or an equivalent certification, for such analyses. <The only exception to this condition is for *in situ* monitoring of> <INSERT relevant parameters>.
G8	When required by the **administering authority**, monitoring must be undertaken in the manner prescribed by the **administering authority**, to investigate a complaint of environmental nuisance arising from the **activity**. The monitoring results must be provided to the **administering authority**, or **nominated delegate**, within the required timeframe and in the specified format upon request.
G9	The **activity** must be undertaken in accordance with written procedures that: 1. identify potential risks to the environment from the **activity** during routine operations, closure and an emergency 2. establish and maintain control **measures** that minimise the potential for environmental harm 3. ensure plant, equipment and **measures** are maintained in a proper and effective condition 4. ensure plant, equipment and **measures** are operated in a proper and effective manner 5. ensure that staff are trained and aware of their obligations under the *Environmental Protection Act 1994* 6. ensure that reviews of environmental performance are undertaken at least annually.
AIR	
A1	Odours or airborne contaminants which are **noxious** or **offensive** or otherwise unreasonably disruptive to public amenity or safety must not cause nuisance to any **sensitive place** or **commercial place**.

LAND	
L1	Treatment and management of acid sulfate soils must comply with the guidance provided in the current edition of the *Queensland Acid Sulfate Soil Technical Manual.*
L2	**Land** that has been disturbed for activities conducted under this environmental authority must be rehabilitated in a manner such that: 1. suitable native species of vegetation for the location are established and sustained for earthen surfaces; 2. potential for erosion is minimised; 3. the quality of water released from the site, including seepage, does not cause environmental harm; 4. potential for environmental nuisance caused by dust is minimised; 5. the water quality of any residual water body does not have potential to cause environmental harm; 6. the final landform is stable and protects public safety.
L3	Rehabilitation of disturbed areas required under condition L2, must take place progressively as works are staged and <INSERT either or both: **new dredging activities** or new extraction areas> are commenced.
WASTE	
WS1	All waste generated in carrying out the **activity** must be reused, recycled or removed to a facility <INSERT where disposal is authorised in other conditions of the EA> <or designated onsite location(s)> that can lawfully accept the waste.

6.1 Additional model operating conditions—blasting

These conditions will apply, in addition to the conditions set out in section 0, only if **blasting** is proposed.

NOISE

N1

Blasting activities must not exceed the limits for peak particle velocity and air blast overpressure in *Table 1—Blasting noise limits* when measured at any **sensitive place** or **commercial place** in accordance with the associated monitoring requirements.

Table 1—Blasting noise limits

Blasting criteria	Blasting limits
Airblast overpressure	115 dB (Linear) Peak for 9 out of 10 consecutive blasts initiated and not greater than 120 dB (Linear) Peak at any time.
Ground **vibration** peak particle velocity	5 mm/s peak particle velocity for 9 out of 10 consecutive blasts and not greater than 10 mm/s peak particle velocity at any time.

Associated monitoring requirements

1. Monitoring must be performed in accordance with the most recent edition of the **administering authority's** *Noise and Vibration from Blasting guideline* and *Noise Measurement Manual* and any relevant *Australian Standard*.

<INSERT the following as relevant>

2. Monitoring locations and release points must be situated and maintained in accordance with plan <INSERT plan title, version and date> attached.
3. All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.

<INSERT any other associated monitoring requirements>

N2

Blasting must be carried out in accordance with the current edition of the **administering authority's** *Noise and vibration from blasting guideline* and with *Australian Standard 2187*.

N3	Unless prior approval is obtained from the **administering authority**: 1. **blasting** is only permitted during the hours of 9 am to 3 pm Monday to Friday, and from 9 am to 1 pm on Saturdays. 2. **blasting** is not permitted at any time on Sundays or public holidays.
N4	When required by the **administering authority,** a blast monitoring program must be developed and implemented to monitor compliance with *Table 1—Blasting noise limits* at any **sensitive place** or **commercial place**.

6.2 Additional model operating conditions—dredging, general

These conditions will apply in addition to the conditions set out in section 6, and 6.3 to 6.4 (as applicable) when **dredging** is proposed.

DG1	Written notification of the commencement date must be provided to the **administering authority** at least five (5) business days prior to establishing a **new dredging activity**.
DG2	Noise generated by the **activity** must not cause environmental nuisance to any **sensitive place** or **commercial place**.
DG3	<INSERT this condition only where there are land-based dewatering releases to surface waters associated with dredging> The only contaminants to be released to surface **waters** are <describe permitted release e.g. settled treated stormwater runoff from areas of the site not likely to be contaminated with waste materials> to **waters** described as <Describe waters and location> in accordance with *Table 2—Surface water release limits* and the associated monitoring requirements. **Table 2—Surface water release limits**

Release Point(s) Description (GDA94 decimal degrees) *		**Quality characteristic** (units)	**Limit**	**Limit Type**	**Minimum Monitoring Frequency**
Latitude	**Longitude**				
<INSERT>	<INSERT>	<INSERT relevant quality characteristics for activity affected waterway and environmental values. Parameters may include pH, dissolved oxygen, suspended solids, turbidity, and conductivity.>	<INSERT>	<INSERT> e.g. Maximum Minimum Range	<INSERT>

** Decimal degrees to be provided to a minimum of 4 decimal places.*

Associated monitoring requirements

<INSERT the following as relevant>

1. Monitoring location and release points must be situated and maintained in accordance with plan <INSERT plan title, version and date> attached.
2. Monitoring must be in accordance with the methods prescribed in the current edition of the Department of Environment and Heritage Protection *Monitoring and Sampling Manual.*
3. Water and sediment samples must be representative of the general condition of the water body or sediments.
4. All determinations must employ analytical practical quantification limits of sufficient sensitivity to enable comparisons to be made against water quality objectives/triggers/limits relevant to the particular water or sediment quality characteristic.
5. Monitoring must be undertaken during a release and at the frequency stated.
6. All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.

<INSERT any other associated monitoring requirements>

6.3 Additional model operating conditions—dredging, inland

These conditions will apply if inland **dredging** is proposed.

DI1	With the exception of floating equipment, all machinery and ancillary equipment for the **activity** must be stored on the landward side of the high banks of any surface **waters**.

6.4 Additional model operating conditions—dredging, coastal

These conditions will apply if coastal dredging is proposed.

CD1	The characterisation of sediments and suitability for <INSERT either or both: unconfined disposal to **waters** | **land**-based disposal> of **dredge spoil** must be submitted to the **administering authority** in accordance with methodology provided in the latest edition of the <INSERT one or more of the following: • *National Assessment Guidelines for Dredging* <NOTE: applicable for disposal to **waters**> • *National Environment Protection (Assessment of Site Contamination) Amendment Measure* <NOTE: applicable for disposal to **land**> • *Queensland Acid Sulfate Soil Technical Manual* <NOTE: applicable for disposal to **waters** or **land**> …and any other relevant guideline specified by the **administering authority**, at 20 business days prior to the commencement of the dredging **activity**. Note: It is the responsibility of the operator to determine whether previous characterisation of sediments are suitable for assessing risks to **environmental values** associated with the **dredging** campaign to which this environmental authority relates.
CD2	<INSERT where **dredge spoil** will be disposed to **land**> Authorised **dredge spoil** disposal to **land** <NOTE: i.e. beach nourishment, **land** reclamation, or **tidal land** for environmental enhancement> must only take place within the following locations and for the following purposes: • <INSERT locations and purposes>
CD3	Any containment area specified in condition CD2 must be certified by **appropriately qualified person(s)** (e.g. registered professional engineer of Queensland) and maintained to that condition.
CD4	The dredging **activity** must not commence unless the lawful disposal of the **dredge spoil** has been authorised under an authority, licence or other permit issued by the Commonwealth or Queensland governments. Evidence of all necessary approvals must be provided to the **administering authority** upon request.
CD5	<INSERT if maintenance **dredge spoil** is proposed to be placed in **waters**, or capital **dredge spoil** (including **prescribed dredge material**) is proposed to be placed in **waters** outside the Great Barrier Reef Marine Park> **Dredge spoil** must not be placed at sea except at a designated place authorised under an authority, licence or other permit issued by the Commonwealth or Queensland governments.

CD6	<INSERT unless the **zone of influence** of dredge-generated or **land**-based containment area dewatering operation sediment plumes do not pose a significant risk to one or more **sensitive receptors**.> Where the **zone of influence** of a sediment plume generated by the **activity** encroaches upon a **sensitive receptor**, **slightly disturbed** or **high ecological value waters**, **sediment plume-associated monitoring** (SPAM) is to be undertaken as follows. The default[3] **SPAM** requirement is: <INSERT one of the following options based on the scale of the operation as per the below:> 1. Small-scale dredging operations (<50,000 m^3) a. **continuous visual monitoring**[4], and b. **spot-checking** (weekly and **event-based** concern site monitoring with **control site**-based checking) 2. Smaller medium-scale dredging operations (50,000 m^3-250,000 m^3) a. **continuous visual monitoring**[2], and b. **spot-checking** (weekly and **event-based** concern site monitoring with **control site-**based checking) 3. Larger medium-scale dredging operations (250,000 m^3-500,000 m^3) • **continuous logging** at **concern sites** and **control sites**, **control site**-based checking. 4. Large-scale dreding operations (>500,000 m^3) • continuous **logging** at **concern sites** and **control sites,** with a baseline collection phase (**baseline-based assessment** with **control site**-based checking).
CD7	<INSERT if Condition CD6 applies> Prior to the commencement of the dredging **activity**, a **Dredge Management Plan** (DMP)[5] for the **activity** must be developed and implemented, and the **DMP** must contain the following: 1. Clearly stated aims and objectives. 2. Description of dredging operation including: a. type of equipment to be used in **dredging**; b. volume of **dredge material** to be removed, and duration and timing of the **dredging** campaign; c. methods to be utilised for transporting **dredge spoil**; and d. **dredge spoil** disposal methods. 3. Maps or plans showing: a. legend, north arrow and scale; b. boundaries of **dredging** operation; c. estimated or modelled **zone of influence** of sediment plumes; d. location of designated disposal sites; e. location of **sensitive receptors**; and f. all monitoring locations. 4. A detailed description of **sediment plume-associated monitoring** program including: a. sampling regime and methods; and b. monitoring sites. 5. A detailed description of the assessment methodology to provide data in relation to **trigger values** that will define **alert levels**. 6. Clearly set out data handling and evaluation procedures that demonstrate how exceedance of **alert levels** will be determined. 7. Management actions to be initiated if **alert levels** are exceeded. 8. <INSERT this requirement only if relevant> Details of any **technical advisory group**[6] members and their respective role.

[3] The default **sediment plume-associated monitoring** program may be amended at the discretion of the **administering authority** to a more-intensive or less-intensive monitoring approach depending on the amount and quality of supporting information available at the time the dredging application is made, the management intent of waters under the Environmental Protection (Water) Policy 2009, and the level of perceived risk and protection status of each potentially-affected **environmental value**.

[4] The **continuous visual monitoring** methodology includes a subjective monitoring component, but must also be supplemented with daily, non-subjective (i.e. objective, empirical) data collection that must occur at the most appropriate times to report the full extent of the sediment plumes being generated (e.g. mid-ebb and flood tides whilst actively dredging) as detailed in the **Dredge Management Plan**.

[5] Note: The **Dredge Management Plan** is subject to review and amendment as required by changing regulation, monitoring results, or **Technical Advisory Group** recommendations.

[6] This requirement is necessary for larger medium-scale and large-scale dredging programs only.

CD8	<INSERT if Condition CD6 applies> The **Dredge Management Plan** must not be implemented or amended in a way that contravenes or is inconsistent with any condition of this authority.

6.5 Additional model operating conditions—extraction, other than dredging

These conditions are to be used on ERA 16(2) threshold activities only.

<table>
<tr><td>E1</td><td>Except for the operational areas identified within condition G1, a minimum buffer distance of 50 m must be maintained between extraction areas and the high banks of waters.</td></tr>
<tr><td>E2</td><td>Noise from the activity must not exceed the levels identified in Table 1—Noise limits when measured in accordance with the associated monitoring requirements.

Table 3—Noise limits
<table>
<tr><td rowspan="2"></td><td>7am–6pm</td><td>6pm–10pm</td><td>10pm–7am</td><td>7am–6pm</td><td>6pm–10pm</td><td>10pm–7am</td></tr>
<tr><td colspan="6">Noise measured at the <INSERT></td></tr>
<tr><td><INSERT noise descriptor></td><td><INSERT></td><td><INSERT></td><td><INSERT></td><td><INSERT></td><td><INSERT></td><td><INSERT></td></tr>
</table>
Associated monitoring requirements
1. All monitoring devices must be calibrated and maintained according to the manufacturer’s instruction manual.
2. Any monitoring must be in accordance with the most recent version of the administering authority’s Noise Measurement Manual.
3. Any monitoring of noise emissions from the activity must be undertaken when the activity is in operation.
4. <INSERT any other associated monitoring requirements e.g: Monitoring location must be in accordance with plan <INSERT plan title, version and date> attached.></td></tr>
<tr><td>E3</td><td>When required by the administering authority, noise monitoring must be undertaken in accordance with the associated monitoring requirements of Table 1—Noise Limits, and the results notified within 14 days to the administering authority. Monitoring must include:
1. $L_{Aeq, adj, T}$
2. Background noise (Background) as $L_{A\ 90, adj, T}$
3. $MaxL_{pA,T}$
4. the level and frequency of occurrence of any impulsive or tonal noise
5. atmospheric conditions including wind speed and direction
6. effects due to extraneous factors such as traffic noise
7. recording of location, date and time of measurements.</td></tr>
<tr><td>E4</td><td><DELETE this condition if both blasting or substantial low frequency noise will form part of the ERA 16 activity>

Blasting or the generation of substantial low frequency noise is not permitted.</td></tr>
<tr><td>E5</td><td><DELETE this condition if substantial low frequency noise will form part of the ERA 16 activity>

Generation of substantial low frequency noise is not permitted.</td></tr>
</table>

E6

The only contaminants to be released to surface **waters** are <describe permitted release e.g. settled treated stormwater runoff from areas of the site not likely to be contaminated with waste materials> to **waters** described as <describe waterway and location> in accordance with *Table 2—Surface water release limits* and the associated monitoring requirements.

Table 4—Surface water release limits

Release Point(s) Description (GDA94 decimal degrees) *		**Quality characteristic** (units)	**Limit**	**Limit Type**	**Minimum Monitoring Frequency**
Latitude	**Longitude**				
<INSERT>	<INSERT>	<INSERT relevant quality characteristics for activity affected waterway and environmental values. Parameters may include pH, dissolved oxygen, suspended solids, turbidity, and conductivity.>	<INSERT>	<INSERT> e.g. Maximum Minimum Range	<INSERT>

** Decimal degrees to be provided to a minimum of 4 decimal places.*

Associated monitoring requirements

<INSERT the following as relevant>

1. Monitoring location and release points must be situated and maintained in accordance with plan <INSERT plan title, version and date> attached.
2. Monitoring must be in accordance with the methods prescribed in the current edition of the Department of Environment and Heritage Protection *Monitoring and Sampling Manual*.
3. Water and sediment samples must be representative of the general condition of the water body or sediments.
4. All determinations must employ analytical practical quantification limits of sufficientl sensitivity to enable comparisons to be made against water quality objectives/triggers/limits relevant to the particular water or sediment quality characteristic.
5. Monitoring must be undertaken during a releaseand at the frequency stated.
6. All monitoring devices must be calibrated and maintained according to the manufacturer's instruction manual.
7. <INSERT any other associated monitoring requirements>

E7

The release to waters permitted under E6 must not contain any other properties at a concentration capable of causing environmental harm.

E8

The release to waters permitted under E6 must not produce any slick or other visible evidence of oil or grease, scum, litter or other visually objectionable matter.

E9

Stormwater runoff from disturbed areas of the site, generated by (up to and including) a **24 hour storm event with an average recurrence interval of 1 in 5 years** must be retained on site or managed to remove contaminants prior to release.

7 Definitions[7]

Note that where a term is not defined, the definition in the *Environmental Protection Act 1994*, its regulations or environmental protection policies must be used. If a word remains undefined, it has its ordinary meaning.

<NOTE: The shortlist of defined terms under section 7.1 below will generally apply to all environmental authorities.

Other shortlists of defined terms may be relevant depending on the purpose of the environmental authority – add the defined terms presented under:

- Section 7.2 for **blasting** wherever appropriate (i.e. where conditions from Section 6.1 were used).
- Section 7.3 for ERA 16(1)—**dredging** activities (i.e. where conditions from Section 6.2, 6.3, or 6.4 were used), and
- Section 7.4 for ERA 16(2)—extractive activities, other than **dredging** (i.e.where conditions from Section 6.5 were used)

There are no exclusive defined terms for ERA 16(3)—screening.

Please do not include definitions from non-relevant shortlists or deleted terms.>

7.1 Definitions, general

<Definitions of terms used in **sections 1**, **2**, **3**, **4**, **5**, **0**>

Activity means the environmentally relevant activities, whether resource activities or prescribed activities, to which the environmental authority relates.

Administering authority means the Department of Environment and Heritage Protection or its successor or predecessors.

Appropriately qualified person(s) means a person or persons who has professional qualifications, training, skills or experience relevant to the nominated subject matter and can give authoritative assessment, advice and analysis to performance relative to the subject matter using the relevant protocols, standards, methods or literature.

Commercial place means 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 reasonably used by persons at that place.

Environmental value –

- a quality or physical characteristic of the environment that is conducive to ecological health or public amenity or safety; or
- another quality of the environment identified and declared to be an environmental value under an environmental protection policy or regulation.

Land means any land, whether above or below the ordinary high-water mark at spring tides (i.e. includes **tidal land**).

Measures has the broadest interpretation and includes:

- **Procedural measures** such as standard operating procedures for dredging operations, environmental risk assessment, management actions, departmental direction and competency expectations under relevant guidelines
- **Physical measures** such as plant, equipment, physical objects (such as bunding, containment systems etc.), ecosystem monitoring and bathymetric surveys.

NATA means National Association of Testing Authorities.

New dredging activity means a dredging **activity** that is currently not underway, the next stage of a **dredging** campaign that is currently underway, or a discretely separate area in a larger dredge campaign that is currently underway.

Nominated delegate means another government agency that provides services to the **administering authority**.

Noxious means harmful or injurious to health or physical well-being.

7 Note to **administering authority** officers: These definitions have been developed for consistent use across the State. However it is recognised that in rare circumstances, a definition might need to be amended to fit a particular type of operation. For example, dredging might be occurring within the boundary of a marine park which may require specific amendments to the definition of a sensitive place on a case by case basis. Delete this footnote once the definition has been added into the environmental authority.

Offensive means causing offence or displeasure; is unreasonably disagreeable to the senses; disgusting, nauseous or repulsive.

Port facility means a facility or land used in the operation or strategic management of a port authority's port. *Port facility* does not include a small-scale port facility to be used for a tourism or recreation purpose. Examples of a small-scale port facility—boat ramp, boat harbour, marina.

Prescribed dredge material means material generated from capital dredging in a priority port's master planned area carried out for the purpose of establishing, constructing or improving a port facility in the master planned area.

Prescribed water contaminants means contaminants listed within Schedule 9 of the Environmental Protection Regulation 2008.

Priority ports
Each of the following ports is a priority port as per the *Sustainable Ports Development Act 2015*—

(a) Port of Abbot Point;
(b) Port of Gladstone;
(c) the ports of Hay Point and Mackay;
(d) Port of Townsville.

Release of a contaminant into the environment means to:

- deposit, discharge, emit or disturb the contaminant
- cause or allow the contaminant to be deposited, discharged, emitted or disturbed
- fail to prevent the contaminant from being deposited, discharged emitted or disturbed
- allow the contaminant to escape
- fail to prevent the contaminant from escaping.

Restricted area means an area that is within the Great Barrier Reef World Heritage Area but outside the Commonwealth marine park.

Note—See the Commonwealth *Marine Park Act* for prohibitions relating to the Commonwealth marine park and Great Barrier Reef Region under that Act.

Sensitive place includes the following and includes a place within the curtilage of such a place reasonably used by persons at that place:

1. a dwelling, residential allotment, mobile home or caravan park, residential marina or other residential premises; or
2. a motel, hotel or hostel; or
3. a kindergarten, school, university or other educational institution; or
4. a medical centre or hospital; or
5. a protected area under the *Nature Conservation Act 1992*, the *Marine Parks Act 2004* or a World Heritage Area; or
6. a public park or garden; or
7. for noise, a place defined as a sensitive receptor for the purposes of the Environmental Protection (Noise) Policy 2008.

Tidal land means land that is submerged at any time by tidal water.

You means the holder of the environmental authority.

7.2 Definitions, blasting

<Definitions of terms used exclusively in **section 6.1**>

Airblast overpressure is the energy transmitted from the blast site within the atmosphere in the form of pressure waves. As these waves pass a given position, the pressure of the air rises very rapidly then falls more slowly then returns to the ambient value after a number of oscillations. The pressure wave consists of both audible (noise) and inaudible (concussion) energy. The maximum excess pressure in this wave is known as the peak air overpressure, generally measured in decibels using the linear frequency-weighting.

Blasting is the use of explosives to fracture:

- rock, coal and other minerals for later recovery; or
- structural components or other items to facilitate removal from a site or for reuse.

Vibration is the oscillating or periodic motion of a particle, group of particles, or solid object about its equilibrium position.

7.3 ERA 16(1)—dredging activities

<Definitions of terms used exclusively in **section 6.2**>

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 or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

<Definitions of terms used exclusively in **section 6.3**>

Dredging means to clear out **dredge material**.

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 or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

<Definitions of terms used exclusively in **section 6.4**>

Alert level represent tiers in a hierarchy of increasing environmental risk and are defined by *trigger values*. Three alert levels (low, moderate, and high) are typically used in a management action framework to indicate adverse conditions and guide management responses that aim to prevent and minimise environmental harm.

Baseline-based assessment means the **dredge management plan** involves a monitoring result assessment methodology that uses assessment criteria developed from a pre-disturbance baseline data collection phase.

Capital dredging—

(a) means **dredging** carried out for the purpose of—
  (i) creating or enlarging a channel, basin, port, berth or other similar thing; or
  (ii) removing material that is unsuitable as a foundation for a **port facility**; or
  (iii) creating a trench for a pipe, cable or tube; or
  (iv) an activity incidental to an **activity** mentioned in subparagraph (i) to (iii); but

(b) does not include **dredging** carried out for the purpose of—
  (i) maintaining a channel, basin, port, berth or other similar thing for its intended use; or
  (ii) protecting human life or property.

Concern site means a site where a **sensitive receptor** occurs within the **zone of influence** of a sediment plume.

Continuous logging means to record instrument-derived data in a memory storage device (a data logger). The frequency of data logging may be, for instance, every 15 minutes, but where a logger device is used *in situ*, the frequency may be dependent on the memory storage capacity of the logger and the time between logger retrieval events. Alternatively, continuous logging may be performed via telemetry, with the data being broadcast to an *ex situ* computer or data logger.

Continuous visual monitoring means visual appraisal of the sediment plume extent and intensity as performed by the dredge crew throughout the day on an *ad hoc* basis (i.e. whenever it is safe and non-disruptive to do so). The continuous visual monitoring requirement is intended to facilitate an early response feature in the **dredge management plan**, so that the dredge operator remains cognisant of the extent and intensity of the sediment plume being generated and reacts according to the **dredge management plan** accordingly. This requirement must be supplemented with empirical data (e.g. photography, when water quality instruments are not in use) taken at key indicative points in the tidal cycle (where applicable) to demonstrate the extent and intensity of the sediment plume.

Control site refers to a monitoring site located beyond the anticipated **zone of influence** of sediment plumes and has **site pairing** with one or more **test sites** or **sentinel sites**. In monitoring programs, **control sites** serve the same role as do **reference sites** but only for a defined subset of parameters.

Dredge management plan (DMP) is an environmental management plan for the dredging **activity**. It defines and describes the:

- scope, timing and duration of the **dredging** operation
- **sediment plume-associated monitoring programs**
- assessment of data, **trigger values** and **alert levels**, and
- management actions that may be required in response to adverse monitoring results.

The DMP includes an aim to prevent and minimise environmental harm to **sensitive receptors** as a result of the dredging **activity**.

Dredge material is the sea, river or lake bed material (e.g. stone, gravel, sand, rock, clay, mud, silt and soil) as it remains *in situ*, prior to **dredging** disturbance, within the **dredge footprint**.

Dredge footprint is the area being dredged including batters.

Dredge spoil is **dredge material** that has been disturbed (i.e. extracted, transported, placed or disposed).

Dredging means to clear out **dredge material**.

Event-based actions refers to management responses (e.g. an increased level of monitoring) initiated in following 'an event', with the event being defined in the **dredge management plan** (e.g. 'an event' can occur when monitoring results indicate an exceedance of an adopted trigger value, or a non-compliance with the environmental authority condition).

High Ecological Value (HEV) is the 'management intent' for the 'ecosystem condition' as defined in Schedule 1 of the Environmental Protection Policy (Water) 2009 for scheduled waters, or the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2000 (ANZECC & ARMCANZ 2000) for non-scheduled waters. HEV ecosystems are intact and typically exhibit relativey insignificant levels of anthropogenic impacts.

Port facility means a facility or land used in the operation or strategic management of a port authority's port. *Port facility* does not include a small-scale port facility to be used for a tourism or recreation purpose. Examples of a small-scale port facility—boat ramp, boat harbour, marina.

Reference-based assessment refers to an assessment methodology whereby environmental variable data collected from a **test site** or **sentinel site** are compared to those collected a **reference site** or **control site***.*

Reference site refers to a monitoring site located not only beyond the anticipated **zone of influence** of a sediment plume, but also beyond other sources of environmental impacts, and has **site pairing** with one or more **test sites** or **sentinel sites***.* In monitoring programs, reference sites serve the same role as do control sites but can generally be suitable for a broader set of parameters.

Sediment plume-associated monitoring (SPAM) means environmental monitoring associated with risk management of **sediment plume-associated impacts.**

Sediment plume-associated impacts are impacts associated with sediment plumes including turbidity and suspended solids concentrations, light attenuation or sedimentation rates elevated above either **control site** or **reference site** readings or baseline conditions for an equivalent time of year. Where **dredge material** possesses acid sulfate soil-related properties, sediment plume-associated impacts may also include pH, dissolved oxygen and metal and metalloid-related toxicity impacts.

Sensitive receptor includes biological sensitive receptors together with other **environmental values** sensitive to the effects of dredge-generated **sediment plume-associated impacts***.*

Sentinel site is a **test site** that is situated between the disturbance source and the **sensitive receptor** and serves to provide earlier warning of developing adverse conditions than does a **test site**

Site pairing refers to monitoring sites that have a functional control-impact relationship, for example, Control site A is referenced to assess monitoring data collected from Concern Sites AA and AB, thus, Concern Sites AA and AB share site pairing with Control Site A.

Slightly disturbed is the 'management intent' for the 'ecosystem condition' as defined in Schedule 1 of the Environmental Protection Policy (Water) 2009. Slightly disturbed ecosystems should generally be regarded as **high ecological value** ecosystems in all respects except for some relatively minor disturbances (usually water-quality related e.g. nutrient concentrations exceeding the water quality objective).

Spot-checking refers to a non-continuous monitoring approach performed at a fixed distance and direction from a mobile impact source (in the context of this guidance, dredging vessels) or at other key points of interest. Spot-checking may be routine or **event-based**, and may also include monitoring at fixed monitoring sites, such as **reference sites** or **control sites** and **test sites** or **sentinel sites***,* although the same sites need not necessarily be monitored on every sampling event.

Technical Advisory Group means an assembly of **appropriately-qualified persons** representing experts in various scientific fields, formed to be capable of assessing **sediment plume-associated monitoring** data and presenting advice relevant to conducting the **dredging** campaign and protecting **sensitive receptors** as directed under this authority and the **dredge management plan**.

Test site is a **concern site** that functions as a test point for compliance, is a monitoring site situated within the area where a **sensitive receptor** occurs and where environmental monitoring-related assessment criteria (e.g. trigger values) apply.

Trigger values are physicochemical, parameter-specific measurement values used to indicate a condition where an environmental value or sensitive receptor may be at low, moderate or high risk, or some other risk-related indicator.

Zone of Influence of a sediment plume is, in its broadest application, defined by the **dredge footprint** and the area beyond the **dredge footprint** where at least some level of sediment plume-associated impacts are expected to occur. The overall *zone of influence* may be broken down into more risk-relevant sub-categories, such as the *Zone of Unavoidable Loss* (the **dredge footprint** and immediately adjacent areas), the *Zone of Moderate Impact*, or the *Zone of Marginal Impact*, with each zone being defined according to its purpose or role in environmental management.

7.4 ERA 16(2)—extractive activities, other than dredging

<Definitions of terms used exclusively in **section 6.5**>

24 hour storm event with an average recurrence interval of 1 in 5 years means the maximum rainfall depth from a 24 hour duration precipitation event with an average recurrence interval of once in 5 years. *For example, an Intensity-Frequency-Duration table for a 24 hour duration event with an average recurrence interval of 1 in 5 years, identifies a rainfall intensity of 7.09mm/hour. The rainfall depth for this event is therefore 24 hour x 7.09mm/hour = 170.16mm.*

Background means noise, measured in the absence of the noise under investigation, as $\mathbf{L_{A\ 90,\ adj,\ T}}$ being the A-weighted sound pressure level exceeded for 90 per cent of the time period of not less than 15 minutes, using Fast response.

$\mathbf{L_{Aeq,\ adj,\ T}}$ means the adjusted A weighted equivalent continuous sound pressure level measures on fast response, adjusted for tonality and impulsiveness, during the time period T, where T is measured for a period no less than 15 minutes when the **activity** is causing a steady state noise, and no shorter than one hour when the approved **activity** is causing an intermittent noise.

$\mathbf{Max_{LpA,T}}$ means the maximum A-weighted sound pressure level measured over a time period T of not less than 15 minutes, using Fast response.

Substantial low frequency noise means a noise emission that has an unbalanced frequency spectrum shown in a one-third octave band measurement, with a predominant component within the frequency range 10 to 200 Hz. It includes any noise emission likely to cause an overall sound pressure level at a sensitive place exceeding 55 dB(Z).

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 or tidal waters (including the sea), stormwater channel, stormwater drain, roadside gutter, stormwater run-off, and groundwater and any part thereof.

7.5 ERA 16(3)—screening

No exclusive defined terms