NSW EPA

Your reference: 10/14864
Our reference: DOC13/52690-02; EF13/8279
Contact: Rebecca Scrivener, 4908 6830
Electronic correspondence to: hunter.region@epa.nsw.gov.au

Ms Lisa Mitchell
Manager – Infrastructure Projects
Dept of Planning and Infrastructure
GPO Box 39
SYDNEY NSW 2001

Dear Ms Mitchell

RE: Preferred Project Report – Port Waratah Coal Services Terminal 4 ('T4') Project

I refer to your letter of 9 September 2013 seeking comments and recommended conditions of approval for the Port Waratah Coal Services' (PWCS) Terminal 4 (T4) project.

The Environment Protection Authority (EPA) has reviewed the report titled 'Response to Submissions and Preferred Project Report (Vols.1 -5)' dated 27 August 2013 ('the Preferred Project Report') and notes the following key changes have been made to the original proposal considered by the EPA in May 2012.

- Reduction in throughput capacity from 120Mtpa to 70Mtpa;
- Reduction in the number of stockpile pads to be established is reduced from seven to four coal stockpile pads;
- Reduction in number of rail arrival and departure tracks from eight arrival and eight departure tracks to four arrival and four departure tracks;
- Reduction in number of dump-stations from four to two dump-stations
- Removal of the Hunter River south bank wharf area and associated infrastructure.

The key issues considered in the EPA's review relate to air quality, noise, surface and groundwater issues, contaminated land and waste. Detailed comments on each of these aspects of the proposal are provided in Attachment 1 of this letter.

From our review, the EPA has determined that, should development consent be granted, it would be able to issue an Environment Protection Licence ("EPL") under the *Protection of the Environment Operations Act 1997* ("POEO Act") subject to a number of conditions. Recommended Conditions of Approval are provided as Attachment 2 of this letter.

Should DP&I grant development consent for this proposal these conditions should be incorporated into the project approval.

The Recommended Conditions of Approval relate to the development as proposed in the Preferred Project Report and other documents provided to the EPA to date. In the event that the development is modified either by the proponent prior to the granting of consent or as a result of a condition proposed to be attached to the consent, it will be necessary to consult with the EPA about the changes before consent is issued.

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This will enable the EPA to determine whether a condition of approval needs to be modified in light of the changes.

Environment Protection Licence
It is noted that the proponent currently holds Environment Protection Licence #1552 ("the licence") under the POEO Act in respect of scheduled activities already undertaken at the Kooragang Coal Terminal which is adjacent to the proposed project site on Kooragang Island. The EPA understands it is the proponent's intention to seek a variation to the licence to incorporate the T4 project into the existing Kooragang Coal Terminal licence, should consent be granted.

Should development consent be granted, prior to the commencement of any scheduled development work and/or activity under the POEO Act in relation to the proposal, the proponent must apply for and receive a variation to the licence in respect of the proposed development.

If you require any further information regarding this matter please contact myself on (02) 4908 6830.

Yours sincerely

RScrivener 25/11/2013

REBECCA SCRIVENER
A/Head Regional Operations Unit - Hunter
Environment Protection Authority

Encl: Attachmt 1 – General Comments
Attachmt 2 – Recommended Conditions of Approval

ATTACHMENT 1

GENERAL COMMENTS ON EPA ISSUES

PROPOSED TERMINAL 4 COAL EXPORT TERMINAL, KOORAGANG ISLAND (10/14865)

GENERAL

The EPA has reviewed the Response to Submissions and Preferred Project Report (Vols.1-5) dated 27 August 2013 ('the Preferred Project Report') giving consideration to the operation of the existing Kooragang Coal Terminal. The EPA understands that, should approval be granted for the project, the proponent will seek to vary the current Environment Protection Licence for the Kooragang Coal Terminal (EPL #1552) to include the area occupied, and construction activities associated with, the Terminal 4 project.

The EPA notes the Preferred Project Report presents consideration of the impacts associated with the identified changes in scale and design of the T4 project since the original Environmental Assessment (EA) was exhibited in April/May 2012 as well as consideration of issues raised in submissions received during the exhibition period for the project in 2012.

AIR QUALITY IMPACT ASSESSMENT

The EPA has reviewed the Air Quality Impact Assessment provided in Appendix O of the Preferred Project Report and considers that it has been conducted generally in accordance with the *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW*. The methodology used is consistent with the Air Quality Impact Assessment for the original proposal which was subject to independent expert peer review.

The EPA notes that an additional sensitivity analysis has been conducted for the 2010 background data set and emissions from developments approved and proposed since the original EA was prepared. This has been incorporated into the updated modelling.

The cumulative assessment presented in the Preferred Project Report indicates no exceedances of EPA impact assessment criterion for NOx, SO2, annual average PM10 and TSP for all three scenarios modelled. Cumulative 24 hour average and annual average PM2.5 impacts are also below the project adopted criteria.

No additional exceedances of the EPA's impact assessment criteria are predicted to result for the project. However, the EPA notes that the maximum 24 hour PM10 increment impact predicted at a sensitive receptor has increased, when compared to the original proposal.

The Preferred Project Report does not provide a detailed explanation of why incremental PM10 impacts from the project are predicted to increase, despite total project particle emissions and material throughput decreasing under the Preferred Project Report operating scenarios.

The assessment results indicate that proactive real time best practice management is critical to minimise the risk of dust impacts from the proposed works. The EPA would expect the emission control measures identified in the Statement of Commitments of the Preferred Project Report to be implemented should consent be granted.

Recommended Conditions of Approval: The EPA has provided standard recommended conditions of approval with respect to air quality impacts.

NOISE IMPACT ASSESSMENT

The EPA has reviewed Appendix N of the Preferred Project Report and considers it has been carried out in accordance with the relevant noise guidelines.

The Preferred Project Report predicts that the T4 project (plus the existing Kooragang Coal Terminal (Stage 4 project)) will meet EPA criteria for operational noise at all locations, except for Fern Bay and Stockton where predicted levels exceed criteria by up to 4 dBA in the evening and night time.

Predicted levels at Fern Bay and Stockton exceed the relevant criteria as a result of the existing Kooragang Coal Terminal, not as a result of the T4 project.

The EPA recommends conditions 2.10, 3.4 and 3.5 of Project Approval 06_0189 are reiterated on any consent for the T4 project, if approved. These conditions reflect the need to ensure amenity criteria are achieved to effectively manage existing and future cumulative noise impacts at Kooragang Island and surrounding residential areas.

Recommended Conditions
The EPA has provided standard recommended conditions reflecting noise criteria provided in the Preferred Project Report. The proposed limits are equal to, or lower than, the limits in Project Approval 06_0189, except at Mayfield West where they are up to 2 dBA above limits prescribed in PA 06_0189. However, the proposed limits are below the Project Specific Noise Level for Mayfield West.

CONTAMINATION ASSESSMENT
The EPA has reviewed Appendix E, H and I of the Preferred Project Report in relation to contamination issues associated with the project site as well as the additional information requested in the EPA submission of 9 May 2012.

The contamination assessment presented in the Preferred Project Report is generally adequate and is generally consistent with the original EA. The Preferred Project Report identifies key impacts of the proposed development in relation to existing contamination at Kooragang Island. Remedial measures are identified to mitigate the identified impacts as detailed in a Remedial Action Plan (RAP).

Existing Contaminated Land
The EPA has taken into consideration existing contaminated sites within the vicinity of the project site that have been notified to, and/or declared by the EPA via the provisions of the *Contaminated Land Management Act* 1997 ("CLM Act").

The EPA's submission of 9 May 2012 identified four contaminated sites regulated by the EPA that would be impacted by the project. With the removal of works on the southern banks of the Hunter River, the revised development footprint will impact on the following two sites:

- ***BHP – Kooragang Island landfill asbestos waste cell*** - conveyors and coal stockpiles are proposed to be located on the landfill cell containing asbestos wastes which is subject to a section 35 notice (notice #357) under the *Environmentally Hazardous Chemicals Act 1985*. The notice states that remediation can only be undertaken with the approval in writing of the EPA; and

- ***Delta EMD Kooragang Island site*** – conveyors and coal stockpiles are proposed to be located on the Delta EMD site which was notified to the EPA under section 60 of the CLM Act but is yet to be assessed as to whether the contamination is significant enough to warrant regulation under the CLM Act.

The proponent must ensure the proposed development does not result in a change of the pre-existing contamination so as to result in 'significant contamination', as defined by the CLM Act. It should be noted that if the proponent were to change existing conditions or contamination so as to result in 'significant contamination', then the proponent may be the person responsible for the contamination under section 13(1) of the CLM Act.

The proponent must also ensure the proposed development is compatible with remedial works identified in any Voluntary management proposals in the declared land.

Revised Project Footprint
The Preferred Project Report provides details and results of additional groundwater flow and contaminant transport modelling carried out to consider any changes resulting from the revised project layout, changes to dredge spoil handling, the surface water management system and refinement of contamination remediation and management measures since the original EA. The Preferred Project Report identifies preferred remedial options to mitigate the offsite migration of contamination. The EPA generally concurs with this assessment on the basis that proposed mitigation measures are implemented and effectively monitored.

Dredge Spoil Management
The EPA acknowledges the proposed method to store dredged material has been altered since the original EA. Dredge spoil is now proposed to be stored on the former Delta EMD site which will have an impermeable liner installed prior to the placement of dredge spoil. This will inhibit the seepage of saline water into the groundwater table.

The EPA also notes the proponent is no longer proposing to install an impermeable liner in Deep Pond, rather it is proposed to install a low permeability barrier wall along the southern and western sites of Deep Pond to minimise the movement of saline waters through the rail embankment. A low permeability barrier wall would not prevent saline water from infiltrating the ground surface.

The EPA is concerned there is potential for the saline dredge water to seep into the groundwater table below Deep Pond and potentially exacerbate existing soil and groundwater contamination.

The EPA recommends that the handling and deposition of wet sediments and dredge waters only be undertaken in areas of the site which have an impermeable land surface barrier and appropriate drainage such that the risk of saline water entering the groundwater table is minimised as far as practicable.

Site Capping
The Preferred Project Report provides a conceptual Landfill Closure Plan for the project footprint. The EPA acknowledges the proposed cap has been developed with consideration to the objectives of EPA's Benchmark Technique 28 specified in the document, '*Environmental guidelines: Solid Waste Landfills*' (EPA, 1996). The EPA notes the proposed cap does not include a vegetation layer, drainage layer or gas drainage layer. This is appropriate given the previous use of the site was as an industrial landfill and the proposed use as a coal stockyard.

A capping layer with hydraulic performance equivalent to a 0.5m capping layer with permeability less than 1 x 10^{-8} m/s is the preferred remedial option over the T4 project area. This is considered appropriate for the site.

The specific timing of the capping is not identified in the Preferred Project Report and is indicated to be after the completion of earthworks and during the construction of the stockyard. The EPA recommends that final capping works to be implemented and completed prior to any dredge material emplacement, preloading and/or construction activity commencing at the site to ensure surface water infiltration to the groundwater system is minimised.

Consideration of cap integrity also needs to be addressed in relation to installation of any necessary piers, footings or piling works required during the construction phases of the project. The EPA recommends the installation of a 'sacrificial' capping layer over the final cap to prevent damage to the cap during construction works to ensure the design permeability is achieved and maintained for the life of the cap.

The cap should be engineered to ensure it has a life span of at least thirty years as a minimum.

Remedial Action Plan
The Preferred Project Report provides a concept stage Remedial Action Plan (RAP) as well as an accredited Site Auditor's Interim Opinion of the RAP as requested by the EPA in our submission dated 9

May 2012. The RAP identifies a number of preferred remedial options to be implemented at the site to mitigate the increased flux of contamination as a result of the project.

The preferred remedial options, based on currently available information are identified as:

(i) Construction of a barrier wall (soil-bentonite or similar) to mitigate contamination at Ponds 5 and 7 on Kooragang Island (p47);
(ii) Installation of a permeable reactive barrier along the northern side of Area K7 (being the BHP Kooragang Island landfill lead dust and asbestos waste cell) and along the northern and eastern boundary of the fines disposal facility;
(iii) Extraction of Light Non Aqueous Phase Liquids (LNAPL) using a suitable method such as multiphase extraction from Site B in the vicinity of Well B-10 (p61, Vol 1); and,
(iv) Installation of a low permeability cap of thickness 0.5 m and permeability 1 x 10^{-8} over the existing surface at the Delta EMD site for placement of dredge spoil.

It is indicated that the removal of LNAPL 'in the vicinity of well B-10' will be undertaken by multiphase extraction 'or similar' and Monitored Natural Attenuation of the dissolved phase plume will be undertaken with contingencies in the event the plumes approach sensitive receptors. As the specific remedial method and the goals, scope of work and contingencies for this remediation are not provided, the level of detail and certainty of this remedial option is not sufficient to enable the EPA to assess the suitability of this remedial option.

The Updated Statement of Commitments identifies that implementation of the preferred options identified in the Remedial Action Plan will be undertaken subject to detailed design, assessment and pricing of remedial options and targeted investigations and trials.

While this is generally in accordance with standard industry practice, it does not provide sufficient certainty that the currently preferred remedial options will be implemented. Therefore the EPA recommends the final Remedial Action Plan be submitted for approval prior to any construction work commencing and that any changes from the concept stage Remedial Action Plan be specifically identified.

It is recommended that the long term maintenance requirements for the permeable reactive barriers be identified and agreed by the landowner/s to ensure the landowners agree to implement the long term maintenance requirements.

The EPA notes the Interim Opinion states that the Remedial Action Plan is practical and adequate for the objective of minimising any unacceptable risk of contaminated groundwater arising from the site, subject to a number of provisions. The Interim Opinion identifies a number of additional studies, trials and monitoring programs to be carried out to finalise the details of the Remedial Action Plan. The EPA concurs with the recommendations of the Interim Opinion.

Materials Management Plan – Containment Cell

The Preferred Project Report confirms that suitable excavated materials are proposed to be located within a dedicated containment cell at the project site and provides a Containment Cell Design Report in Appendix I.

It is recommended that the proposed location and design of any containment cell/s be identified and approved prior to the construction of the containment cell to ensure excavated materials are appropriately identified, classified and managed.

Groundwater Monitoring Program

The Updated Statement of Commitments identifies that groundwater and surface water monitoring plans will be developed and implemented as part of the Construction Environmental Monitoring Plan ("CEMP") and Environmental Management System.

Given the extent of existing contamination and the potential for exacerbation and mobilisation of groundwater contamination at Kooragang Island during preloading activities, the EPA recommends that a

detailed groundwater monitoring plan to be submitted for approval prior to any construction work commencing.

Recommended Conditions of Approval
The EPA has provided recommended conditions of approval requiring the submission and approval of a final Landfill Closure Plan, Remedial Action Plan, Containment Cell Design Report and long term groundwater monitoring program prior to the commencement of any construction works, including placement of dredge spoil, commencing at the project site..

SURFACE WATER ASSESSMENT
The EPA has reviewed Appendix L of the Preferred Project Report which provides updated information and revised assessment of changes to the surface water management system with the updated project design. Changes to the surface water management system identified in Appendix L include:

- Contributing catchment areas to the Surface Water Management System have been revised in some areas as a result of design changes since the EA was published, for example removal of the south bank wharf area;
- Revised surface storage configurations; and
- Project water use assumptions have been revised as a result of the design changes, including the reduced terminal throughput capacity from 120 Mtpa to 70 Mtpa.

It is noted that the above design features are subject to revision at the detailed design stage. It is also noted the surface water management system has been designed as a 'no water discharge' site with the exception of extreme wet weather events (being a 1 in 100 year, 2 hour storm event).

Construction Phase - Dredge Dewatering System
In order to construct the dredge dewatering system, lining and changed configuration of affected ponds is proposed. The management of existing water in these ponds should be addressed in the construction water management plan and adequate characterisation of water quality conducted if discharge of this water is proposed to enable mitigation measures to be installed to prevent saline water seepage.

The Preferred Project Report states that the dredge return water channel to be constructed (and decommissioned prior to the operation stage) will be lined. The proposed Erosion and Sediment Control Plan will need to set out the construction methods for the discharge channel (that will discharge settled dredge return water and collected rainfall to the Hunter River South Arm) including the details of the proposed lining materials, its placement methods and its capacity to handle potentially large water flow velocities. Details of silt curtains (materials, depth and attachment methods) to be used for the drainage discharge point and berths construction activities should also be included.

The EPA notes contaminate levels in the dredged material were found to be uniformly low. There is potential for salinity of dredge return water to cause impacts on freshwater systems, barriers or capping layer degradation or soil impacts if not managed and monitored appropriately during construction. These matters should be addressed in the construction Environmental Management Plan to avoid impacts, monitor potential for problems and provide contingency options to mitigate impacts.

The original EA proposed water quality monitoring up and downstream of the discharge point from the site. The EPA recommends monitoring at the discharge point is also appropriate.

The EPA agrees with the proposed monitoring parameters to be applied to the dredge dewatering system which includes turbidity (calibrated back to the TSS limit), pH and EC with visual checks for oils and grease. The proposed daily monitoring during discharges and monthly otherwise is sufficient monitoring frequency.

Acid sulfate soils (ASS) can be managed via the proposed ASS management plan.

Operations Phase: Water Management System
The Preferred Project Report states that the proponent is currently carrying out a surface water monitoring program in receiving waters of the project site. It is proposed that trigger values will be determined based on the results of the monitoring program.

The original EA indicated that trigger values would be used for on-site management purposes during operations to determine if contingency measures are to be implemented, rather than compliance limits specified in an Environmental Protection Licence. The EPA would therefore expect any discharge from the site to meet the requirements of s120 of the *Protection of the Environment Operations Act* 1997.

The Updated Statement of Commitments in the Preferred Project Report identifies actions to be taken should trigger values be exceeded. The EPA's previous comments regarding the need to incorporate time for effective implementation is still applicable to the revised project. The proponent should identify contingences to be implemented where a discharge is imminent and the water quality measurements indicate that water is not acceptable for discharge yet the ponds need to discharge urgently.

Discharges to the Hunter River
The Preferred Project Report has provided a clearer description of the operation of settlement storages during operation. Discharges via the western settlement pond system occur on average 1 in 90 days as an overflow to Deep Pond South and then to the Hunter River South Arm near the existing rail bridge. The sediment settling capacity of two primary ponds and one secondary pond has been calculated, however, it appears that in a period prior to discharge from the site that all three ponds effectively becomes one pond which may lead to mixing, suspension/re-suspension and bypassing of settlement efficiency compared to settling efficiency of 3 ponds in series (see Plate 3-2, App. L).

Fine sediments and coal fines by-passing treatment may lead to greater sediment and attached contaminant losses than the goal for the system. In average rainfall to wet years when discharge volumes are significant combined with lower than predicted settling of the sediment/coal fines and attached contaminants may create an unacceptable water quality impact.

The difference between setting efficiency during overflows compared to settling efficiency when three ponds are working in series is a key issue. It is recommended that the proponent demonstrate that settling efficiency that was modelled takes into account the settling conditions that occur in the lead up to and during an overflow event, that is, once the level in Clearwater Pond overtops and flows back into the primary and secondary ponds. Water quality and settling in Clearwater pond during reuse periods (prior to any flowback into the primary and secondary ponds) may not be representative of the water quality of an overflow event.

The modelling to estimate the effectiveness of particle removal assumed an average particle size of 20µm. The Preferred Project Report responded to EPA's request for additional information on particle size assumptions in the model stating that at the existing Kooragang Coal Terminal most suspended sediment in runoff comprises coarse to silty material that is readily removed in existing sedimentation processes.

The Preferred Project Report also states that an average particle size of 20µm represents a conservative lower bound, considering that it is an average of a mass distribution. This does not confirm whether the average particle size will be an average of 20µm or whether this is the most appropriate measure to determine settling efficiency considering the nature of the material being settled. The EPA is concerned that 20µm average particle size is not reflective of sediment laden runoff generated at a site that includes coal fines with attached contaminants. Coal fine discharges may still be significant particularly if settlement efficiency is not as predicted and if contaminants are attached to fines. The EPA seeks clarification on the application of the 20µm particle size in the modeling presented in the Preferred Project Report.

The Preferred Project Report states that if controlled discharges during operations are proposed in the future then this would be under the conditions of an Environment Protection Licence. The EPA would expect monitoring conditions to be included on the licence to assess the performance of the water treatment systems, the quality of controlled discharges and the river conditions at time of discharge. The

EPA would expect a water quality impact assessment to be provided that addresses criteria presented in the ANZECC (2000)[1] guidelines (95% species protection) at the edge of the near field mixing zone as well as consideration of environmental values of the receiving waterway.

Section 3.3.7 of Appendix L identifies proposed monitoring frequencies for routine monitoring and overflow monitoring programs to be implemented. The EPA would expect the suite of parameters initially to include the metals identified in Table 11 of Appendix J of the original EA (being Al, Co, Cu, Fe, Mg, Mn, Ni, K, Na and Zn) as well as cadmium, chromium, lead and mercury. The EPA considers ammonia, cyanide and other organics associated with coal should also be included in the initial suite of parameters until it is established that they are not risk factors in overflows.

Recommended Conditions of Approval

The EPA has provided a number of recommended conditions of approval reflecting the surface water monitoring commitments made in the original EA and Preferred Project Report as well as assessment requirements for a controlled discharge, should that be proposed in the future.

Environment Protection Authority
25 November 2013

[1] ANZECC, 2000, *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*, Australian and New Zealand Environment Conservation Council.

ATTACHMENT 2

RECOMMENDED CONDITIONS OF APPROVAL

PROPOSED TERMINAL 4 COAL EXPORT TERMINAL, KOORAGANG ISLAND (10/14865)

ADMINISTRATIVE CONDITIONS

A1 Works to be undertaken in accordance with information supplied to the EPA

A1.1 Except as provided by these conditions of approval, the works and activities must be undertaken in accordance with the proposal contained in:

(a) *T4 Project – Environmental Assessment* (Vols 1-6), dated February 2012, prepared by EMM-EMGA Mitchell McLennan;
(b) *Response to Submissions and Preferred Project Report* (Vols.1 -5) dated 27 August 2013 prepared by EMM- EMGA Mitchell McLennan.

unless otherwise specified in these conditions of approval.

A1.2 The licensee must not exceed a throughput capacity of 70Mtpa coal in any 12 month period.

A2.1 The licensee must, in the opinion of the EPA, be a fit and proper person to hold a licence under the *Protection of the Environment Operations Act 1997*, having regard to the matters in Section 83 of that Act.

DISCHARGES TO AIR AND WATER AND APPLICATIONS TO LAND

P1 Location of monitoring/discharge points and areas

P1.1 The following points referred to in the table below are identified for the purposes of monitoring and/or setting of limits for the emission of pollutants to the air from the point.

Air

Point 1 and i_n

Identification no.	Type of Monitoring Point	Type of Discharge Point	Description of Location
Point 1 and i_n	Ambient air monitoring		Representative site(s) in Fern Bay, Stockton, Mayfield, Warabrook and Sandgate

Note: The EPA is proposing to establish a Newcastle Ambient Air Quality Monitoring Network in the near future. Some or all of these locations, and their monitoring, will not be required when this Network is established.

P1.2 The following points referred to in the table below are identified for the purposes of monitoring and/or the setting of limits for the discharges of pollutants to water from the point.

Water and land

Identification no.	Type of Monitoring Point	Type of Discharge Point	Description of Location
2	Dredge dewatering discharge quality monitoring	Dredge dewatering discharge to waters	Discharge point to South Arm of Hunter Arm from dredge dewatering system
3	Ambient water quality monitoring	N/A	XXXm upstream of Point 2
4	Ambient water	N/A	XXXm downstream of Point 2

	quality monitoring		
5	Wet weather discharge quality monitoring	Wet weather discharge to waters	Discharge point to South Arm of Hunter River from surface water management system
6 and i_n	Groundwater quality monitoring	N/A	To be determined based on information identified in condition E4

Notes: The location of the groundwater monitoring points must be selected by a suitably qualified person.

The location of all discharge and/or monitoring points must be provided to the EPA as eastings and northings with the application for an Environment Protection Licence (EPL) on an A1 size plan of the premises that has been prepared by a registered surveyor.

LIMIT CONDITIONS

L1 Pollution of Waters

L1.1 Except as may be expressly provided by a license under the *Protection of the Environment Operations Act 1997* in relation of the development, section 120 of the *Protection of the Environment Operations Act 1997* must be complied with in connection with the carrying out of the development.

L3 Concentration limits

L3.1 For each monitoring/discharge point or utilisation area specified in the table\s below (by a point number), the concentration of a pollutant discharged at that point, or applied to that area, must not exceed the concentration limits specified for that pollutant in the table.

L3.2 Where a pH quality limit is specified in the table, the specified percentage of samples must be within the specified ranges.

L3.3 To avoid any doubt, this condition does not authorise the pollution of waters by any pollutant other than those specified in the table\s.

L3.5 Water and/or Land Concentration Limits

Points 2, 3, 4 (Construction Phase)

Pollutant	Units of measure	100 percentile limit
pH	pH	6.5-8.5
Total suspended solids	Milligrams per litre	50
Oil and Grease	Visible	None visible

L5 Waste

L5.1 The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.

L5.2 This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.

L6 Noise

L6.1 Noise generated at the premises must not exceed the noise limits in the table below at any residence within each locality.

Locality	NOISE LIMITS dB(A)				
	Day	Evening	Night		
	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (15\ minute)}$	$L_{Aeq\ (9\ hour)}$	$L_{A1\ (1\ minute)}$
Fern Bay and Stockton	49	49	49	46	55
Mayfield West	43	43	41	38	47
Mayfield and Mayfield East	43	43	42	38	48
Carrington	41	41	39	35	45
Sandgate	37	37	36	35	45
Warabrook	37	37	35	35	45

L6.2 For the purpose of condition L6.1;

- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.
- Evening is defined as the period 6pm to 10pm.
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

L6.3 The noise limits set out in condition L6.1 apply under all meteorological conditions except for the following:

a) Wind speeds greater than 3 metres/second at 10 metres above ground level; or
b) Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
c) Stability category G temperature inversion conditions.

L6.4 For the purposes of condition L6.3:

a) Data recorded by the meteorological station identified as EPA Identification Point <?> must be used to determine meteorological conditions ; and
b) Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

L6.5 To determine compliance:

a) with the $L_{eq(15\ minute)}$ noise limits in condition L6.1, the noise measurement equipment must be located:

- approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
- within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
- within approximately 50 metres of the boundary of a National Park or a Nature Reserve.

b) with the $L_{A1(1\ minute)}$ noise limits in condition L6.1, the noise measurement equipment must be located within 1 metre of a dwelling façade.

c) with the noise limits in condition L6.1, the noise measurement equipment must be located:

- at the most affected point at a location where there is no dwelling at the location; or
- at the most affected point within an area at a location prescribed by conditions L6.5(a) or L6.5(b).

L6.6 A non-compliance of condition L6.1 will still occur where noise generated from the premises in excess of the appropriate limit is measured:

- at a location other than an area prescribed by conditions L6.5(a) and L6.5(b); and/or
- at a point other than the most affected point at a location.

L6.7 For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

L7 Potential offensive odour

L7.1 No condition of the approval of this development identifies a potentially offensive odour for the purposes of Section 129 of the *Protection of the Environment Operations Act 1997.*

L7.2 The licensee must not cause or permit the emission of offensive odour beyond the boundary of the premises.

Note: Section 129 of the *Protection of the Environment Operations Act 1997* provides that the applicant must not cause or permit the emission of any offensive odour from the premises but provides a defence if the emission is identified in the relevant environment protection licence as a potentially offensive odour and the odour was emitted in accordance with the conditions of a licence directed at minimising the odour.

Additions to Definition of Terms of the licence

- NSW Industrial Noise Policy - the document entitled "New South Wales Industrial Noise Policy published by the Environment Protection Authority in January 2000."

- Noise - sound pressure levels' for the purposes of conditions L6.1 to L6.7.

OPERATING CONDITIONS

O3 Dust

O3.1 The premises must be maintained in a condition which minimises or prevents the emission of dust from the premises.

O3.2 All operations and activities occurring at the premises must be carried out in a manner that will minimise the emission of dust from the premises.

O4 Stormwater/sediment control – Construction Phase

O4.1 Soil and water management controls must be employed to minimise soil erosion and the discharge of sediment and other pollutants to lands and/or waters during construction activities in accordance with the requirements outlined in *Managing Urban Stormwater: Soils and Construction* (Landcom 2004).

O5 Emergency Response

O5.1 The proponent must maintain, and implement as necessary, a current emergency response plan for the premises. The proponent must keep the emergency response plan on the premises at all times. The emergency response plan must document systems and procedures to deal with all types of incidents (eg: spills, explosions, fire) that may occur at the premises or that may be associated with activities that occur at the premises and which are likely to cause harm to the environment. If a current emergency response plan does not exist at the date on which this condition is attached to the Environment Protection Licence, the proponent must develop an emergency response plan within three months of that date.

O6 Waste

O6.1 The proponent must ensure that any liquid and/or non liquid waste generated and/or stored at the premises is assessed and classified in accordance with the EPA's Waste Classification Guidelines as in force from time to time.

O6.2 The proponent must ensure that waste identified for recycling is stored separately from other waste.

O7 Other operating conditions

O7.1 The shipping berths for the proposal must be designed in a manner that does not prevent or inhibit the retrofit of on-shore power technology.

MONITORING AND RECORDING CONDITIONS

M2 Requirement to monitor concentration of pollutants discharged

M2.1 For each monitoring/discharge point or utilisation area specified below (by a point number), the applicant must monitor (by sampling and obtaining results by analysis) the concentration of each pollutant specified in Column 1. The applicant must use the sampling method, units of measure, and sample at the frequency, specified opposite in the other columns.

M2.2 Air Monitoring Requirements

Point 2 and i_n

Parameter	Units of measure	Frequency	Averaging Period	Method
PM10	Micrograms per cubic metre	continuous	1-hour	AS 3580.9.8 -2008

Note 1: Monitoring of all parameters listed in Column 1 must commence prior to earth moving activities being undertaken at the site.

Note 2: The EPA is proposing to establish a Lower Hunter Air Quality Monitoring Network in the near future. Points 2 and i_n, and their monitoring, will not be required when this Network is established.

M2.3 Water and/or Land Monitoring Requirements

Point 2, 3, 4

Parameter	Units of measure	Frequency	Method
pH	pH	Daily during discharge	Grab sample
TSS	Milligrams per litre	Daily during discharge	Grab sample
Oil and Grease	Visibility	Daily during discharge	Grab sample
EC	microSiemens per centimetre	Daily during discharge	Grab sample

Point 3, 4, 5

Parameter	Units of measure	Frequency	Method
pH	pH	Daily during discharge	Grab sample
TSS	Milligrams per litre	Daily during discharge	Grab sample
Oil and Grease	Visibility	Daily during discharge	Grab sample
EC	microSiemens per centimetre	Daily during discharge	Grab sample
Aluminium	Milligrams per litre	Daily during discharge	Grab sample
Cobalt	Milligrams per litre	Daily during discharge	Grab sample
Copper	Milligrams per litre	Daily during discharge	Grab sample
Cadmium	Milligrams per litre	Daily during discharge	Grab sample
Chromium	Milligrams per litre	Daily during discharge	Grab sample
Iron	Milligrams per litre	Daily during discharge	Grab sample
Lead	Milligrams per litre	Daily during discharge	Grab sample
Mercury	Milligrams per litre	Daily during discharge	Grab sample
Manganese	Milligrams per litre	Daily during discharge	Grab sample
Magnesium	Milligrams per litre	Daily during discharge	Grab sample
Nickel	Milligrams per litre	Daily during discharge	Grab sample
Potassium	Milligrams per litre	Daily during discharge	Grab sample
Sodium	Milligrams per litre	Daily during discharge	Grab sample
Zinc	Milligrams per litre	Daily during discharge	Grab sample
Total phosphorus	Milligrams per litre	Daily during discharge	Grab sample
Total Nitrogen	Milligrams per litre	Daily during discharge	Grab sample

Point 6 an i_n (Groundwater monitoring program)

Parameter	Units of measure	Frequency	Method
To be determined based on outcomes of condition E4.			

M3 Testing methods – concentration limits

M3.1 Monitoring for the concentration of a pollutant emitted to the air required to be conducted by this licence must be done in accordance with:

a) any methodology which is required by or under the Act to be used for the testing of the concentration of the pollutant; or

b) if no such requirement is imposed by or under the Act, any methodology which a condition of this licence requires to be used for that testing; or

c) if no such requirement is imposed by or under the Act or by a condition of the licence, any methodology approved in writing by the EPA for the purposes of that testing prior to the testing taking place.

Note: The Protection of the Environment Operations (Clean Air) Regulation 2010 requires testing for certain purposes to be conducted in accordance with test methods contained in the publication "Approved Methods for the Sampling and Analysis of Air Pollutants in NSW".

M3.2 Subject to any express provision to the contrary in this licence, monitoring for the concentration of a pollutant discharged to waters or applied to a utilisation area must be done in accordance with the Approved Methods Publication unless another method has been approved by the EPA in writing before any tests are conducted.

Note: Clause 18 (1), (1A) and (2) of the Protection of the Environment Operations (General) Regulation 2009 requires that monitoring of actual loads of assessable pollutants listed in L2.1 must be carried out in accordance with the testing method set out in the relevant load calculation protocol for the fee-based activity classification.

M4 Weather monitoring

M4.1 The proponent must monitor each parameter specified in Column 1 in the table below at the premises. The licensee must use the sampling method, units of measure, and sample at the frequency specified in the opposite in the other columns.

Point 7

Parameter	Units of measure	Frequency	Averaging Period	Sampling Method
Rainfall	Millimetres/hour	continuous	1 hour	AM-4
Sigma theta	degrees	continuous	10 minute	AM-2 and AM-4
Siting				AM-1
Temperature at 2 metres	kelvin	continuous	10 minute	AM-4
Temperature at 10 metres	kelvin	continuous	10 minute	AM-4
Total solar radiation	watts per square metre	continuous	10 minute	AM-4
Wind Direction at 10 metres	degrees	continuous	10 minute	AM-2 and AM-4
Wind Speed at 10 metres	metres per second	continuous	10 minute	AM-2 and AM-4

Note: Monitoring of all parameters listed in M4.1 Column 1 must commence prior to earth moving activities being undertaken at the site.

M7 Requirement to Monitor Noise

M7.1 To assess compliance with Condition L6.1, attended noise monitoring must be undertaken in accordance with Conditions L6.5 and:

a) at each one of the locations listed in Condition L6.1;
b) occur yearly in a reporting period;
c) occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of:

- 1.5 hours during the day;
- 30 minutes during the evening; and
- 1 hour during the night.

d) occur for three consecutive operating days.

M8 Emergency Contact

M8.1 The proponent must nominate to the EPA a representative of the company that is available at all times and is capable of providing immediate assistance or response during emergencies or any other incidents at the premises. The name of the nominated representative and their contact details, including their telephone number, must be current at all times. The nomination and contact details must be provided to the EPA's Regional Manager- Hunter at PO Box 488G, Newcastle NSW 2300.

REPORTING CONDITIONS

R4 Noise Monitoring Report

R4.1 A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the yearly monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:

a) an assessment of compliance with noise limits presented in Condition L6.1; and

b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits contained in Condition L6.1.

SPECIAL CONDITIONS

E1 Submission of Landfill Closure Plan

E1.1 The proponent must submit and gain approval from the Director-General a Final Landfill Closure Plan for the T4 project site prior to the commencement of any construction works, including the placement of dredge spoil at the project site.

E2 Submission of Remedial Action Plan

E2.1 The proponent must submit and gain approval from the Director-General a Final Remedial Action Plan for the T4 project site prior to the commencement of any construction works, including the placement of dredge spoil at the project site. The Final Remedial Action Plan must be accompanied by an accredited Contaminated Site Auditor's Site Audit Statement and Site Audit Report.

E3 Submission of Containment Cell Design Report

E3.1 The proponent must submit and gain approval from the Director-General a Final Containment Cell Design Report for the T4 project site prior to the commencement of any construction works, including the placement of dredge spoil at the project site.

E4 Submission of Groundwater Monitoring Plan

E4.1 The proponent must submit and gain approval from the Director-General a long term Groundwater Monitoring Plan for the T4 project site prior to the commencement of any construction works, including the placement of dredge spoil at the project site. The Groundwater Monitoring Plan must provide the following information:

1. Locations (including eastings and northings) of groundwater monitoring bores;
2. Parameters to be monitored;
3. Monitoring frequency;
4. Identification of trigger values and associated actions should trigger values be exceeded;
5. Proposed reporting frequency of results, including reporting mechanisms if trigger values are exceeded.

E5 Submission of Water Quality Impact Assessment for Controlled Discharge

E5.1 Further assessment of the water quality of long term discharges from the site during operations for controlled discharges is to be submitted and approved by the Director-General prior to controlled discharges occurring. Discharge quality for a full suite of relevant indicators should be demonstrated to achieve either:

- the default ANZECC (2000) water quality guidelines (eg. 95% species protection) at the edge of a near field mixing zone of receiving waters; or
- trigger values based on appropriate reference sites as defined in ANZECC (2000) at the edge of a near field mixing zone of receiving waters.

Based on the assessment of further information requested above, where suitable discharge quality is not achieved, further mitigation options should be developed including:

- a review of sediment basin sizing to reduce overflow frequency
- a reconfiguration of the pond systems to create a series of ponds rather than a single large pond that forms in the period leading up to overflows.

Note: Predicted water quality at the edge of the near-field mixing zone should be calculated and refined over time through monitoring and assessment. This will provide a basis for developing and revising licence monitoring conditions and assess the need for licence limits for controlled discharge events.

Environment Protection Authority
25 November 2013