DETERMINATION OF A DEVELOPMENT APPLICATION
FOR STATE SIGNIFICANT, DESIGNATED AND INTEGRATED DEVELOPMENT
UNDER SECTION 80 OF THE
ENVIRONMENTAL PLANNING AND ASSESSMENT ACT, 1979

I, the Minister for Infrastructure and Planning, pursuant to section 80 of the *Environmental Planning and Assessment Act 1979* ("the Act"), and clause 10(2) of *State Environmental Planning Policy No. 55 – Remediation of Land* determine the development application ("the Application") referred to in Schedule 1 by granting development consent subject to the conditions set out in Schedule 2.

The reason for the imposition of conditions is to:

a) minimise any adverse environmental impacts associated with the development;
b) provide a framework for the controlled demonstration of the capability of the remediation technology, prior to full operation;
c) provide an independent, qualified verification of commissioning and performance of the development;
d) facilitate a coordinated and cooperative approach to cumulative impacts and remediation and redevelopment proposals on the Rhodes Peninsula; and
e) implement the recommendations of the Commission of Inquiry into all environmental aspects of the development.

THIS INSTRUMENT INCLUDES CHANGES MADE BY MOD-10-1-2005-i (MARKED IN RED)
THIS INSTRUMENT INCLUDES CHANGES MADE BY MOD-115-9-2006-i (MARKED IN BLUE)

Craig Knowles MP
Minister for Infrastructure and Planning
Minister for Natural Resources

Sydney, 2004 File No. S01/00867

SCHEDULE 1

Application made by: Thiess Services Pty Ltd ("the Applicant");

To: The Minister administering the *Environmental Planning and Assessment Act 1979* (at the time of lodgement of the development application, the Minister for Planning);

In respect of: Lot 10, DP 1007931 and part of the bed of Homebush Bay (part residual lands comprised in Certificate of Title Vol. 5018, Fol. 1);

For the following:

- excavate, stockpile and classify contaminated material from the Lednez (former Union Carbide) site, and sediments from an area of Homebush Bay adjacent to the Lednez site, Meriton site to the north and Orica site to the south;
- treat contaminated material on site with thermal desorption plant;
- use material classified as suitable for reuse without treatment and material that has been

treated to reinstate the former Lednez site to levels suitable for future residential development;
- reinstate Homebush Bay excavations with suitable material from the Lednez site;
- demolish and reconstruct the sea wall along the Lednez site foreshore; and
- demolish all existing structures on the Lednez site.

Development Application: Integrated DA No. 437-12-2002-i, lodged with the then Department of Planning on 9 December 2002, accompanied by *Environmental Impact Statement – Remediation of Lednez Site, Rhodes and Homebush Bay* (seven volumes) prepared by Parsons Brinckerhoff Australia Pty Limited and dated December 2002;

State Significant Development Under Section 76A(7) of the Act, the development is classified as State Significant development by virtue of clause 11 of *State Environmental Planning Policy No. 55 – Remediation of Land*. The development is a category 1 remediation work, being designated development, and is to be undertaken on a remediation site, being land the subject of a declaration under Division 3, Part 3 of the *Contaminated Land Management Act 1997* (Homebush Bay component of the site).

Commission of Inquiry The development was subject to a Commission of Inquiry under section 119 of the *Environmental Planning and Assessment Act 1979*. The primary session of the Inquiry was held from 11 to 13 June 2003. An interim session of the Inquiry was held on 30 July 2003. The reply session of the Inquiry was held on 26 August 2003. The Commission's recommendations following the Inquiry are detailed in *Report to the Honourable Craig Knowles MP, Minister for Infrastructure and Planning, Minister for Natural Resources – Proposed Remediation of the Lednez Site and Part of the Bed if Homebush Bay, Rhodes, City of Canada Bay*, dated December 2003.

Appeal Rights There is no right of appeal to the Land and Environment Court under section 97 or section 98 of the *Environmental Planning and Assessment Act 1979*, as the development is a State Significant Development into which a Commission of Inquiry was held.

Commencement of Consent Pursuant to section 83(1)(b) of the *Environmental Planning and Assessment Act 1979*, this consent operates from the date that is endorsed on the notice of determination given to the Applicant, because a Commission of Inquiry has been held into the development.

Lapse of Consent Pursuant to section 95 of the *Environmental Planning and Assessment Act 1979*, this development consent

is liable to lapse five years after the date from which it operates unless the use of any land, building or work the subject of the consent is actually commenced before the date on which the consent would otherwise lapse.

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SCHEDULE 2

In this consent, except in so far as the context or subject-matter otherwise indicates or requires, the following terms have the meanings indicated:

Act	*Environmental Planning and Assessment Act, 1979*
Applicant	Thiess Services Pty Ltd
BCA	Building Code of Australia
commissioning	commissioning of plant (all activities involving process component testing, and related uncontaminated soil handling and processing) in accordance with an approved Commissioning and Proof of Performance Program
construction	any activity requiring a Construction Certificate under Part 4A of the *Environmental Planning Act 1979*
Council	the City of Canada Bay Council
DEC	NSW Department of Environment and Conservation, incorporating the NSW Environment Protection Authority
decommissioning	all activities, including deconstruction and site rehabilitation, after the treatment of the final quantity of contaminated material through the DHTD unit and treatment associated processes
Department	NSW Department of Infrastructure, Planning and Natural Resources
development	the development to which this consent applies
DHTD	direct-heated thermal desorption
Director-General	Director-General of the NSW Department of Infrastructure, Planning and Natural Resources, or nominee
DPI	NSW Department of Primary Industries, including NSW Fisheries
dust	any solid material that may become suspended in air
EPA	NSW Environment Protection Authority
EPL	Environment Protection Licence issued under the *Protection of the Environment Operations Act, 1997*
Minister	Minister for Infrastructure and Planning, or nominee
NSW Health	NSW Department of Health
NSW Maritime	NSW Maritime Authority, formerly the NSW Waterways Authority
plant	those parts of the development used for the treatment of contaminated materials, and associated gaseous, liquid and solid waste streams from the treatment process
proof of performance trials	those trials conducted prior to remediation operation, in accordance with an approved Commissioning and Proof of Performance Program, to demonstrate the environmental and safety performance of the remediation/ treatment technology
Principal Certifying Authority	the Minister or an accredited certifier, appointed under section 109E of the Act, to issue a Part 4A Certificate as provided under section 109C of the Act
remediation excavation	excavation of any material on the site with the intention of handling and treating that material to remove or reduce the concentration of contaminants in that material
remediation operation	all activities associated with the treatment of excavated materials on the site with the intention of

	removing or reducing the concentration of contaminants in that material
Regulation	*Environmental Planning and Assessment Regulation, 2000*
Rhodes Community Consultative Committee	that Committee established to represent residents on the Rhodes Peninsula potentially affected by impacts associated with the development and its cumulative impacts with other remediation and redevelopment works on the Peninsula, with members including those parties involved with existing community consultative groups, and other parties as may be agreed by the Director-General (refer to Attachment A)
Rhodes Environmental Monitoring and Management Committee	that Committee including the Applicant and relevant remediation and redevelopment proponents that may be nominated by the Director-General, established for the coordinated and cooperative monitoring and management of environmental impacts (including cumulative impacts) on the Rhodes Peninsula as a result of concurrent remediation and redevelopment works (refer to Attachment A)
POEO Act	*Protection of the Environment Operations Act, 1997*
site	the land to which this consent applies, including both dry-land and wet-land components of the site
site clean-up criteria	those criteria established in the documents referred to under condition 1.2 of this consent for the protection of human health and ecology at the conclusion of the development
site establishment	all activities on the site, not being construction, prior to the commencement of remediation excavation or remediation operation
SWC	Sydney Water Corporation

1. GENERAL

Obligation to Minimise Harm to the Environment

1.1 [1]The Applicant shall implement, in accordance and consistent with this consent, all reasonable and practicable measures to prevent or minimise any harm to the environment that may result from the construction, commissioning, operation and decommissioning of the development.

Scope of Development

1.2 [2]The Applicant shall carry out the development generally in accordance with:

a) Development Application No. 437-12-2002-i, lodged with the then Department of Planning on 9 December 2002;

b) *Environmental Impact Statement – Remediation of Lednez Site, Rhodes and Homebush Bay* (seven volumes) prepared by Parsons Brinckerhoff Australia Pty Limited and dated December 2002;

c) all additional information provided to the EPA in relation to the development, including:

i) EIS Clarification No. 1 – being an email from the Applicant to the EPA, with subject *EIS Clarification 1 – Request for Copies of Figures and Tables (2 of 2)*, and dated 24 January 2003;

ii) EIS Clarification No. 2- being a letter from the Applicant to the EPA, with subject *Homebush Bay and Lednez Site Remediation Project, Residual Contaminant Concentrations After Thermal Treatment*, and dated 30 January 2003;

iii) EIS Clarification No. 3 – being a letter from the Applicant to the EPA, with subject *EIS Clarification No 3*, and dated 4 February 2003;

iv) EIS Clarification No. 4 – being a letter from the Applicant to the EPA, with subject *EIS Clarification No 4 – Lednez Site and Homebush Bay Remediation*, and dated 6 February 2003;

v) EIS Clarification No. 5 – being a letter from the Applicant to the EPA, with subject *EIS Clarification No 5 – Lednez Site and Homebush Bay Remediation*, and dated 12 February 2003;

vi) EIS Clarification No. 6 – being a letter from the Applicant to the EPA, with subject *EIS Clarification No 6 – Lednez Site and Homebush Bay Remediation*;

vii) EIS Clarification No. 7 – being a letter from the Applicant to the EPA, with subject *EIS Clarification No 7 – Lednez Site and Homebush Bay Remediation*;

d) *Remediation of Lednez Site, Rhodes and Homebush Bay – Primary Submission to the Commission of Inquiry*, prepared by Thiess Service Pty Ltd and dated 28 May 2003;

e) *Remediation of Lednez Site, Rhodes and Homebush Bay – Response to Questions from the Primary Session*, prepared by Thiess Service Pty Ltd and dated 22 July 2003;

f) *Remediation of Lednez Site, Rhodes and Homebush Bay – Submission in Reply to the Commission of Inquiry*, prepared by Thiess Service Pty Ltd and dated 25 August 2003;

g) *Remediation of Lednez Site, Rhodes and Homebush Bay – Final Submission to the Commission of Inquiry*, prepared by Thiess Service Pty Ltd and dated 8 September 2003;

h) modification application MOD-10-1-2005-i to permit receipt of contaminated soils from the adjacent Statewide site (10-16 Marquet Street, Rhodes) for storage and treatment; and

[1] Incorporates an EPA General Term of Approval (A2.1)
[2] Incorporates an EPA General Term of Approval (A1.1)

i) modification application MOD-115-9-2006-i, accompanied by *Application for Modification to the Existing Development Consent, Remediation of the Lednez Site, Rhodes and Homebush Bay*, prepared by Thiess Services and dated August 2006; and

j) the conditions of this consent.

1.3 In the event of an inconsistency between:

a) the conditions of this consent and any document listed from condition 1.2a) to 1.2i) inclusive, the conditions of this consent shall prevail to the extent of the inconsistency; and

b) any document listed from condition 1.2a) to 1.2i) inclusive, and any other document listed from condition 1.2a) to 1.2i) inclusive, the most recent document shall prevail to the extent of the inconsistency.

Provision of Documents

1.4 Where practicable, the Applicant shall provide all documents and reports required to be submitted to the Director-General under this consent in an appropriate electronic format. Provision of documents and reports to other parties, as required under this consent, shall be in a format acceptable to those parties and shall aim to minimise resource consumption.

1.5 Nothing in this consent prevents the Applicant from combining reporting requirements under this consent with identical or similar reporting requirements for submission to another relevant party.

Note: the purpose of conditions 1.4 and 1.5 is to provide for minimisation of resource utilisation (particularly paper) associated with administration of this consent.

Statutory Requirements

1.6 The Applicant shall ensure that all licences, permits and approvals are obtained and maintained as required throughout the life of the development. No condition of this consent removes the obligation for the Applicant to obtain, renew or comply with such licences, permits or approvals.

1.7 [3]The Applicant shall not undertake any prescribed works within 40 metres of the mean high water mark of Homebush Bay until it has been granted any necessary Part 3A Permit from the Waterways Authority under the *Rivers and Foreshores Improvement Act 1948*.

1.8 Prior to undertaking any excavation works within Homebush Bay, the Applicant shall consult with and address any requirements of DPI concerning the additional excavation footprint identified in modification application MOD-115-9-2006-i, particularly in relation to material to be replaced as substratum for the bed of Homebush Bay, to the satisfaction of DPI.

1.9 [4]The Applicant shall provide the EPA with sufficient and appropriate documentation for a technology assessment to be undertaken by the EPA in accordance with the *National Protocol Approval/ Licensing of Technologies for the Treatment/ Disposal of Schedule X Wastes* and the *National Protocol Approval/ Licensing of Commercial-Scale Facilities for the Treatment/ Disposal of Schedule X Wastes*. The Applicant shall operate the development in accordance with the procedures outlined in the technology assessment document provided to the EPA, unless otherwise agreed by the EPA.

[3] Incorporates a Waterways Authority General Term of Approval (1)
[4] Incorporates EPA General Terms of Approval (O14.2 and O15.2)

1.10 [5]If the Applicant intends to utilise any treatment plant or process on the site, that is not the subject of this consent, then the Applicant shall notify the EPA, and if required, obtain a licence under the *Protection of the Environment Operations Act 1997* or *Environmentally Hazardous Chemicals Act 1985*, as relevant.

> Note: any treatment plant or process not the subject of this consent may require further approval in accordance with the *Environmental Planning and Assessment Act 1979*.

1.11 [6]The Applicant shall ensure that any works the subject of this development consent are undertaken in accordance with any landowner's consent that may be issued by the Waterways Authority, as owner of the site. Landowner's consent does not relieve the Applicant from complying with the conditions of this consent.

Dispute Resolution

1.12 In the event that a dispute arises between the Applicant and Council or the Applicant and a public authority other than the Department, in relation to a specification or requirement applicable under this consent, the matter shall be referred by either party to the Director-General, or if not resolved, to the Minister, whose determination of the dispute shall be final and binding on all parties. For the purpose of this condition, "public authority" has the same meaning as provided under section 4 of the Act.

> Note: Section 121 of the *Environmental Planning and Assessment Act 1979* provides mechanisms for resolution of disputes between the Department, the Director-General, councils and public authorities.
>
> This consent can not, and does not, remove, amend or modify any right of appeal to the Land and Environment Court, or any other legal dispute resolution mechanism.

2. COMPLIANCE

2.1 The Applicant shall put in place a management system, and take reasonable steps, to ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this consent relevant to their respective activities.

2.2 The Applicant shall be responsible for the works the subject of this consent and the environmental impacts that may result from those works, and shall put in place an environmental management system governing the conduct of all persons on the site, including contractors, subcontractors and visitors.

2.3 Prior to each of the events listed from a) to h) below, or within such period otherwise agreed by the Director-General, the Applicant shall certify in writing to the satisfaction of the Director-General, that it has complied with all conditions of this consent applicable prior to that event. Where an event is to be undertaken in stages, the Applicant may, subject to the agreement of the Director-General, stage the submission of compliance certification consistent with the staging of activities relating to that event.

a) commencement of any physical works on the site;
b) commencement of remediation excavation;
c) commencement of construction;
d) commencement of commissioning, consistent with an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent);

[5] Incorporates an EPA General Term of Approval (O15.3)
[6] Incorporates a Waterways Authority General Term of Approval (2)

e) commencement of proof of performance trials, consistent with an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent);
f) commencement of remediation operation;
g) completion of soil remediation and commencement of decommissioning; and
h) completion of decommissioning and deconstruction.

2.4 Notwithstanding condition 2.3 of this consent, the Director-General may require an update report on compliance with all, or any part, of the conditions of this consent. Any such update shall meet the requirements of the Director-General and be submitted within such period as the Director-General may agree.

2.5 The Applicant shall meet the requirements of the Director-General in respect of the implementation of any measure necessary to ensure compliance with the conditions of this consent, and general consistency with the documents listed under condition 1.2 of this consent. The Director-General may direct that such a measure be implemented in response to the information contained within any report, plan, correspondence or other document submitted in accordance with the conditions of this consent, within such time as the Director-General may agree.

3. INDEPENDENT ENVIRONMENTAL OVERSIGHT

3.1 The Applicant shall bear all reasonable costs associated with an Independent Environmental Expert to oversee and certify the environmental and safety performance of the development during commissioning, proof of performance trials and operation. The Expert shall be responsible for:
a) independently certifying the environmental performance of relevant plant equipment during commissioning, proof of performance trials and operation;
b) independently reviewing environmental management, performance and monitoring associated with the development, subject to the scope of works established by the Applicant in consultation with, and for the approval of, the Director-General;
c) providing independent advice to the Director-General in relation to the environmental performance of the development, and mitigation/ amelioration measures that may be implemented to address any adverse impacts, should such impacts occur; and
d) otherwise fulfilling the functions given to it under this consent.

The Independent Environmental Expert shall be appointed by the Director-General prior to the commencement of commissioning the development (having regard to pre-commissioning responsibilities of the Expert dictated by this consent), in accordance with an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent). Funding for the Expert shall be provided to the Director-General on a six-monthly basis, with the first funding provision made prior to the commencement of commissioning in accordance with an approved Commissioning and Proof of Performance Program. The quantum of funding required to be paid by the Applicant shall be established in consultation with the Department prior to the commencement of commissioning. The Independent Environmental Expert may be required to independently certify the environmental and safety performance of other remediation proposals on the Rhodes Peninsula, in which case funding provided by the Applicant for the Expert will be established to reflect the proportion of the Expert's resources utilised in relation to the development the subject of this consent.

Note: the Director-General, in appointing the Independent Environmental Expert may consider comment made by the Applicant, the EPA, the Waterways Authority, NSW Fisheries and the Rhodes Community Consultative Committee in relation to the appointment.

4. STAGING OF REMEDIATION WORKS

4.1 The Applicant shall undertake works the subject of this consent in a staged manner, subject to the following provisions:

a) site preparation and construction works shall not commence until the Applicant has satisfied all requirements of this consent applicable prior to those works;

b) remediation excavation shall not commence until the Applicant has satisfied all requirements of this consent applicable prior to those works;

c) commissioning, consistent with an approved Commissioning and Proof of Performance Program shall not commence until:

  a) all requirements of this consent applicable prior to the commencement of commissioning have been met; and

  b) the Applicant has received the written approval of the Director-General and the EPA to commence commissioning;

d) [7]proof of performance trials, consistent with an approved Commissioning and Proof of Performance Program, shall not commence until:

  i) all requirements of this consent applicable prior to the commencement of proof of performance trials have been met;

  ii) the Independent Environmental Expert has certified to the Director-General that the development is capable of progressing to proof of performance trials, based on the environmental and safety performance of the development during commissioning;

  iii) the Applicant has received the written approval of the Director-General and the EPA to proceed to proof of performance trials;

e) remediation operation, including DHTD interim operations in accordance with condition 4.1A, shall not commence until:

  i) all requirements of this consent applicable prior to the commencement of operation have been met;

  ii) the Independent Environmental Expert has certified to the Director-General that the development is capable of progressing to operation, based on the environmental and safety performance of the development during proof of performance trials; and

  iii) the Applicant has received the written approval of the Director-General and the EPA to proceed.

4.1A Notwithstanding condition 4.1, the Applicant may operate the DHTD unit at a reduced rate following the successful completion of the proof of performance tests but prior to the establishment of the final operational conditions with the prior written approval of the DEC. These operations may be permitted by the DEC at a reduced rate, based on consideration of:

a) successful mini-test results during the start-up/shakedown period for select performance standards (HCL, particulate, other performance standards with short analytical lead times);

b) submission to the DEC, within one week of the completion of the proof of performance tests, of the operating ranges portion of the performance test report; and

c) successful completion of the proof of performance tests as reflected by a minimum of three test runs without significant interruptions.

4.2 [8]Nothing in this consent prohibits the Applicant from continuing works referred to under condition 4.1 of this consent or other site preparation/ construction, commissioning or proof of performance trials as may be approved and permitted by condition 4.1 during the period required to obtain relevant approval(s) to progress to the subsequent phase of the development, as outlined under condition 4.1.

[7] Incorporates an EPA General Term of Approval (G2.2)
[8] Incorporates an EPA General Term of Approval (G3.3)

5. ENVIRONMENTAL PERFORMANCE

Soil Remediation Requirements

5.1 The Applicant shall only receive contaminated materials from off-site for treatment if those materials originate from the Statewide site (10-16 Marquet Street). To avoid any doubt, the contaminated materials referred to under this condition are those to which development consent DA-298-8-2002-i relate, granted by Order of the Land and Environment Court on 24 June 2004 (No. 11628 of 2003).

5.1A. At least two weeks prior to the receipt of any contaminated materials from the Statewide site, the Applicant shall notify the EPA and the Director-General in writing of the intention to do so, including details of the quantity of contaminated materials to be received.

5.1B. At the end of each month during which contaminated materials are received on the site from the Statewide site, the Applicant shall report in writing to the EPA and the Director-General, details of the quantity of contaminated materials actually received and the date(s) on which the receipt of contaminated materials occurred.

5.1C. All contaminated materials transported from the Statewide site shall be conveyed across the common property boundary and shall not be permitted to pass on or over public land at any time.

5.1D. All contaminated materials received on the site from the Statewide shall be only stored over contaminated areas of the site that have yet to be remediated.

5.2 [9]The Applicant shall only treat materials on the site that may be contaminated with scheduled chemicals, dioxins and/ or polychlorinated biphenyls and other contaminants consistent with matrices, contaminant constituents and contaminant concentrations processed and proven as acceptable for processing during commissioning proof of performance trials, as certified by the Independent Environmental Expert, and approved by the Director-General and the EPA (refer to condition 9.12 of this consent). Treatment of these materials shall meet the air emissions criteria specified under this consent and Environment Protection Licence for the site, and shall meet best practice treatment levels to the satisfaction of the EPA.

5.3 [10]The Applicant shall ensure that all excavated material is tested for contaminants, in accordance with the requirements of this consent and the Environment Protection Licence for the site, and the results compared with site clean-up criteria, as identified in the documents listed under condition 1.2 of this consent for the protection of human health and the biophysical environment. Materials that satisfy site clean-up criteria may be relocated for placement on site in accordance with clean-up criteria. Materials that do not satisfy the site clean-up criteria shall be treated through the DHTD plant and associated processes, as required to achieve the clean-up criteria. Procedures for testing and classification of contaminated materials shall be as documented in an approved Contaminated Materials Management Protocol (refer to condition 9.5 of this consent).

Nothing in this consent prevents the Applicant from remediating contaminated materials on the site to lower concentrations than identified in the documents listed under condition 1.2 of this consent, if reasonable, feasible and consistent with the application of best practice environmental outcomes.

[9] Incorporates an EPA General Term of Approval (O15.1)
[10] Incorporates an EPA General Term of Approval (O3.2)

5.4 [11]The Applicant shall ensure that all materials treated in the DHTD plant and associated processes, are validated as satisfying treatment levels specified in a technology assessment approved by the EPA (refer to condition 1.9 of this consent).

5.5 [12]Prior to the commencement of remediation operation, the Applicant shall prepare an updated groundwater modelling report for the approval of the EPA, to update the assessment of the potential off-site ecological impacts that may be associated with the on-site retention of materials with residual contaminant loads, and assess such potential impacts against the ANZECC and ARMCANZ (2000) Guidelines and the NEPM Guidelines. The updated assessment shall include, but need not necessarily be limited to:

a) application of actual data about the hydrological conditions on the site, taking into consideration the projected infiltration rate of surface water into the vadose zone and the saturated zone;
b) input from an independent peer review and/or review by the Independent Environmental Expert, as may be required by the EPA; and
c) reflect the final detailed design outcomes for the configuration of materials carrying residual contaminant loads to remain on the site after the conclusion of the development, with particular reference to configuration restrictions that may apply to the site as a result of any relevant masterplanning and/ or redevelopment consent

5.6 [13]Of all of the process residues generated on the site, the Applicant may only reuse the materials listed below for placement or backfilling, provided the wastes meet the site clean-up criteria:

a) particulates generated and/ or collected in air pollution control equipment applied to plant, equipment and/ or facilities; and
b) sediments or sludges from the on-site wastewater treatment plant.

The Applicant shall test the materials listed above to confirm compliance with the site clean-up criteria before the materials are reused for placement or backfilling. No wastes, other than the materials listed above are permitted to be used for placement and backfilling, and shall be handled and managed in accordance with the relevant requirements of this consent and the Environment Protection Licence for the site.

5.7 [14]If testing of process residues for placement or backfilling on the site (referred to under condition 5.6) indicates that these residues do not meet the site clean-up criteria, the Applicant shall retreat the residues through the DHTD plant until the residues achieve the site clean-up criteria.

5.8 [15]Notwithstanding condition 5.6 of this consent, the Applicant shall not dispose of spent activated carbon on the site by backfilling or placement until/ unless:

a) the EPA has indicated that it is satisfied that the spent activated carbon can be adequately treated on the site to meet site clean-up criteria for the spent activated carbon (refer to treatment trial requirements specified under condition 9.12 of this consent);
b) an Environment Protection Licence(s) has been obtained for the development that expressly permits the disposal of treated spent activated carbon on the site; and
c) treated spent activated carbon has been validated independently/ separately from other materials, with which it may have been mixed during the treatment process (eg other contaminated material). Validation shall be by way of

[11] Incorporates an EPA General Term of Approval (O3.3)
[12] Incorporates an EPA General Term of Approval (G4.1)
[13] Incorporates EPA General Terms of Approval (O5.1 and O5.2)
[14] Incorporates an EPA General Term of Approval (O5.3)
[15] Incorporates EPA General Terms of Approval (O3.4 and O5.4)

laboratory testing of representative samples of the treated spent activated carbon accredited by NATA for the specific testing involved.

Air Quality Impacts

5.9 [16]The Applicant shall install, operate and maintain a meteorological monitoring station to monitor weather conditions representative of those of the site, in accordance with:

a) AM-1 Guide to Siting of Sampling Units;
b) AM-2 Guide for Horizontal Measurement of Wind for Air Quality Applications; and
c) AM-4 On-Site Meteorological Monitoring Program Guidance for Regulatory Modelling Applications.

The Applicant shall use the meteorological monitoring station to undertake the monitoring required under condition 6.2 of this consent. This condition does not preclude the Applicant from reaching agreement with any other relevant party for the installation, operation and maintenance of a shared monitoring station, provided the outcomes of this condition, and any relevant requirement applied to the other party, are achieved.

Monitoring and Discharge Points

5.10 For the purposes of this consent, air monitoring/ air discharge points shall be identified as provided in Table 1 below.

Table 1 - Identification of Air Monitoring and Discharge Points

Monitoring/ Discharge Point Identification Number	Monitoring/ Discharge Point Description
1	DHTD exhaust stack
2	Soil drying enclosure exhaust stack
3	Soil drying enclosure carbon filter exhaust
4	DHTD thermal oxidiser
5	Most affected residential receptors (ambient monitoring)
6	Most affected residential receptors that may exist on the former Glad site (ambient monitoring)
7	Location approved by the EPA in writing (meteorological monitoring)

Odour

5.11 [17]The Applicant shall not permit any offensive odour to be emitted beyond the boundary of the site, as defined under section 129 of the *Protection of the Environment Operations Act 1997*.

5.11A By 1 March 2007, or as otherwise agreed by the Director-General, the Applicant shall complete the installation of the enclosure over the waste storage unit in accordance with the document referred to in condition 1.2(i). The enclosure shall be well-maintained and operational for the duration of the remediation works at the site, unless otherwise approved by the Director-General.

Dust Emissions

5.12 [18]The Applicant shall design, construct, commission, operate, maintain and decommission the development in a manner that minimises or prevents dust emissions from the site, including wind-blown and traffic-generated dust. All activities on the site shall be undertaken with the objective of preventing visible emissions of dust from the site. Should such visible dust emissions occur at any

[16] Incorporates an EPA General Term of Approval (M3.1)
[17] Incorporates an EPA General Term of Approval (O1.1)
[18] Incorporates EPA General Terms of Approval (O2.1, O2.2 and O2.3)

time, the Applicant shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.

Discharge Limits

5.13 The Applicant shall design, construct, commission, operate and maintain the development to ensure that at each discharge point indicated in Table 2 (refer to condition 5.10 of this consent), the concentration of each pollutant listed does not exceed the maximum allowable discharge concentration limit specified for that pollutant, unless otherwise approved in writing by the DEC. For the purpose of monitoring and determining compliance with this condition, "dioxins and furans" shall be polychlorinated dibenzo-p-dioxins (PCDD) and polychlorinated dibenzofurans (PCDF), presented as 2,3,7,8-tetrachloro-dibenzo-p-dioxin (TCDD) equivalent and calculated in accordance with the procedures included in Part 4, clause 29 of the *Protection of the Environment Operations (Clean Air) Regulation 2002*.

Table 2 - Maximum Allowable Discharge Concentration Limits (Air)

Pollutant	Maximum Allowable Discharge Concentration Limit	Reference Conditions
DISCHARGE POINT 1		
Chlorine (Cl_2)	180 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Hydrogen chloride (HCl)	90 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Nitrogen dioxide (NO_x) or nitric oxide (NO) or both	450 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Solid particles	25 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Total volatile organic compounds (VOC), as n-propane equivalent	10mg/m^3	dry, 273K, 101.3 kPa, 11% O_2
Dioxins and furans	0.1 ngm^{-3}	TEQ, dry, 273K, 101.3 kPa, 11% O_2
Carbon monoxide	90 mg/m^3	dry, 273K, 101.3 kPa, 11% O_2
Sulfuric acid mist (H_2SO_4) or sulfur trioxide (SO_3) or both, as SO_3 equivalent	90 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Fluorine (F_2) and any compound containing fluorine, as total fluoride (HF) equivalent	45 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Total of Sb, As, Cd, Pb, Hg, Be, Cr, Co, Mn, Ni, Se, Sn and V	0.5 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Cadmium	0.1 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
Mercury	0.1 mgm^{-3}	dry, 273K, 101.3 kPa, 11% O_2
DISCHARGE POINT 2		
Total of Sb, As, Cd, Pb, Hg, Be, Cr, Co, Mn, Ni, Se, Sn and V	0.5 mgm^{-3}	dry, 273K, 101.3 kPa
Cadmium	0.1 mgm^{-3}	dry, 273K, 101.3 kPa
Mercury	0.1 mgm^{-3}	dry, 273K, 101.3 kPa
Solid particles	10 mgm^{-3}	dry, 273K, 101.3 kPa
Dioxins and furans	0.1 ngm^{-3}	TEQ, dry, 273K, 101.3 kPa
Total volatile organic compounds (VOC), or other measure of light hydrocarbons	Refer to condition 6.8 of this consent	

Thermal Oxidiser and Stack Design and Performance

5.14 Unless otherwise approved in writing by the DEC, the Applicant shall ensure that:

a) the thermal oxidiser (air monitoring point 4, as defined under condition 5.10 of this consent) is operated under all circumstances, including high gaseous pollutant loads, at a temperature of at least 950ºC +/- 30ºC and with a gas residence time of at least one second; and

b) the DHTD plant is operated to achieve a destruction and removal efficiency of 99.9999% for each pollutant specified by the DEC.

5.14A The thermal oxidiser operating temperature and residence time specified in condition 5.14a) shall be modified to be consistent with the thermal oxidiser operating temperature and residence time demonstrated through condition 6.9B to achieve a destruction and removal efficiency of 99.9999% for the DHTD plant.

5.15 [19]The Applicant shall design, construct, operate and maintain all stacks associated with the development in accordance with good engineering practice in order to minimise the effects of stack tip downwash and building wake effects on ground-level air pollutant concentrations.

Note: the EPA refers to the following documents for determining "good engineering practice":

a) USEPA, 1985, *Guideline for Determination of Good Engineering Practice Stack Height (Technical Support Document for the Stack Height Regulations)*, Revised EPA-450/4-80-023R, United States Environmental Protection Agency, Washington DC, USA;

b) USEPA, 1995, *User's Guide to the Building Profile Input Program*, Revised February 1995, EPA-454/R-93-038, United States Environmental Protection Authority, Washington DC, USA; and

c) USEPA, 1997, *Addendum to ISC3 User's Guide, The Prime Plume Rise and Building Downwash Model*, United States Environmental Protection Agency, Washington DC, USA.

5.16 The Applicant shall ensure that the design parameters specified in Table 2A are met for discharge point 1 and discharge point 2 (refer to condition 5.10 of this consent).

Table 2A – Stack Design Requirements

Discharge Point	Minimum Stack Height (m)	Maximum Stack Tip Diameter (m)
1	30	1.2
2	23	1

Fugitive Emissions

5.17 The Applicant shall design, construct, operate and maintain a ventilation system(s) for the soil drying enclosure to ensure that the pressure within the enclosure lies below atmospheric pressure at all times. The Applicant shall test ventilation systems prior to the commencement of proof of performance trials in accordance with an approved Commissioning and Proof of Performance Program to evaluate compliance with this condition. Certification provided by the Independent Environmental Expert, or other party acceptable to the Director-General, for the progression from commissioning to proof of performance trials shall include reference to the results of this testing.

[19] Incorporates an EPA General Term of Approval (U3.1)

Soil and Water Quality Impacts

5.18 [20]Except as may be expressly permitted by an Environment Protection Licence for the development issued by the EPA under the *Protection of the Environment Operations Act 1997*, the Applicant shall ensure that section 120 of that Act (prohibition of pollution of waters) is complied with in and in connection with the carrying out of the development.

5.19 [21]The Applicant shall apply all practicable measures using best environmental practice to:

a) minimise soil erosion and the discharge of sediments and pollutants from the site; and

b) reduce both the concentration of contaminants contained in dirty water and the total quantity of dirty water produced as a result of activities and works associated with the development.

Monitoring and Discharge Points

5.20 For the purposes of this consent, water monitoring/ water discharge points shall be identified as provided in Table 3 below. These water monitoring/ water discharge points shall be clearly indicated on maps in the Water Management Plan required under condition 9.7 of this consent or in the Bay Remediation Management Protocol required under condition 9.7A (for bay remediation monitoring/water discharge points including points 3 to 11, inclusive). The water monitoring/ water discharge points need not necessarily be limited to those identified in Table 3, if additional points are identified in an approved Water Management Plan. Monitoring/discharge points in Table 3 may be modified by the DEC, as reflected in the EPL, following the DEC's review of monitoring results from the trial of the sediment containment system, commissioning stage monitoring or ongoing monitoring during the bay remediation works.

Table 3 - Identification of Water Monitoring and Discharge Points

Monitoring/ Discharge Point Identification Number	Monitoring/ Discharge Point Description
1	Sediment basin, as specified in an approved Water Management Plan (refer to condition 9.7 of this consent)
2	Tap on the pipe discharging to Homebush Bay from detention basin(s), as specified in an approved Water Management Plan (refer to condition 9.7 of this consent)
3, 4	Reference sites for ambient turbidity monitoring (to be located 75 metres away from the outer perimeter barrier or otherwise as required by the DEC)
5, 6, 7, 8	Ambient waters one metre outside the outer perimeter barrier, upstream and downstream of the open windows of the work encapsulation barrier, or as otherwise agreed by the DEC, and identified in an approved Bay Remediation Management Protocol (refer to condition 9.7A of this consent). Number and location of monitoring/ discharge points are to be specified in the Bay Remediation Management Protocol for each phase of bay remediation.
9, 10	Ambient waters outside the open (window(s) of the works encapsulation barrier, or as otherwise agreed by the DEC, and identified in an approved Bay Remediation Management Protocol (refer to condition 9.7A of this consent). Number and location of monitoring/ discharge points are to be specified in the Bay Remediation Management Protocol for each phase of bay remediation.
11	Ambient waters adjacent to and outside the Excavation Working Area Barrier

Refer to Attachment B to this consent for indicative location of monitoring points

[20] Incorporates an EPA General Term of Approval (L2.1)
[21] Incorporates EPA General Terms of Approval (L2.2, O7.2 and O7.4)

Discharges Limits – Environment

5.21 [22]The Applicant shall develop to the satisfaction of the EPA, concentration limits for wastewater discharges from the site. The limits shall be based on:

a) the ANZECC & ARMCANZ (2000) Guidelines;
b) results from water treatment plant trials undertaken by the Applicant;
c) consideration of the initial mixing processes for discharges from the site and potential for bioaccumulation for the set of parameters listed in section 4.0 of the document referred to under condition 1.2d) of this consent and
d) the size of the detention basin(s) based on the site water balance(s)

Where the ANZECC & ARMCANZ (2000) Guidelines do not provide ambient water quality criteria on which to base discharge limits, relevant literature-sourced criteria, including NEPM criteria, may be used by the Applicant in developing the concentration limits. These criteria shall be clearly referenced in the Water Management Plan for the development and compared to interim working levels listed in the ANZECC & ARMCANZ (2000) Guidelines.

Concentration limits referred to under this condition shall be specified in the Water Management Plan for the development (refer to condition 9.7 of this consent), and once approved by the EPA, shall apply to the development for the initial three months of excavation of soil to be remediated on the site.

Note: The EPA has indicated that the use of old Schedule 2 Chemical Limits from the former *Clean Waters Act* as proposed by the Applicant is not acceptable, as the these Limits apply to licensed discharges to scheduled waterways. Homebush Bay is not such a scheduled waterway.

5.22 [23]As soon as practicable after the first three months of excavation of soil to be remediated on the site, the Applicant shall review the Water Monitoring Program (refer to condition 6.14) to assess the need for a revision of the measurement parameters and concentration limits for wastewater reuse and discharges. The review shall be based on the results of the water monitoring program and results of any water test(s) done by the Applicant in the first three months of the excavation of soil to be remediated on the site. Based on this review, the Applicant may propose to monitor fewer parameters than those required to be monitored during the initial three months of excavation of soil to be remediated on the site and shall revise concentration limits for point(s) of discharge. The Applicant shall submit for the approval of the EPA, revised parameters to be monitored and revised concentration limits for the point(s) of discharge. Once approved by the EPA, the revised concentration limits and parameters to be monitored shall apply for the remainder of the life of the development, unless otherwise agreed by the EPA.

5.23 The Applicant shall establish as part of the Water Management Plan for the development, and for the approval of the EPA, concentration limits for wastewater reuse. Any such limits shall apply for all or part of the development, as may be required by the EPA.

5.24 [24]The Applicant shall establish background ambient turbidity levels in Homebush Bay to the satisfaction of the EPA (at water monitoring points 3 and 4, refer to condition 5.20 of this consent). The Water Management Plan required under condition 9.7 of this consent shall specify a turbidity limit in ambient waters of Homebush Bay that will trigger management action if waters outside the silt curtains of the sediment remediation areas installed as part of the development exceed the trigger turbidity level developed based on the requirements of condition 5.25 of this consent.

[22] Incorporates EPA General Terms of Approval (L3.2, L3.3 and L3.4)
[23] Incorporates an EPA General Term of Approval (L3.5)
[24] Incorporates an EPA General Term of Approval (L3.7)

5.25 [25]The Applicant shall ensure that the development does not cause the concentration of total suspended solids (TSS) within one metre of the Homebush Bay side of the silt curtain(s), installed as part of the development to exceed the background turbidity at a comparable good quality reference site (water monitoring point 3, refer to condition 5.20 of this consent) by greater than 10 percent.

5.26 Notwithstanding condition 5.25 of this consent, the Applicant may seek the approval of the EPA for alternative criteria and methods that would allow detection of sediment plumes or a breach of silt curtain(s) during construction and seawall-related works. Different monitoring approaches may be proposed and implemented (eg. continuous monitoring during sediment excavation phases and seawall-related works). For the purpose of this condition, an indication of total suspended solids levels may be established using a turbidity meter after establishing a local relationship between nephelometric turbidity units and total suspended solids. The Water Management Plan referred to under condition 9.7 of this consent shall specify actions that shall be taken if this turbidity limit is exceeded.

Concentration Limits and Triggers – Bay Remediation Works

5.26A The Applicant shall undertake the development in a manner that meets the following water quality limits at the monitoring points specified (refer to condition 5.20), unless otherwise agreed by the DEC and reflected in an approved Bay Remediation Management Protocol for the bay remediation works (refer to condition 9.7A of this consent):

a) wet weather turbidity monitoring:
   i) turbidity levels within one metre outside of the silt curtain(s) (ie. at any of the points 5, 6, 7 or 8) shall not exceed the turbidity levels at the background turbidity reference points (points 3 and 4) by more than 66 Nephelometric Turbidity Units (NTU);
   ii) the probe that is used to monitor the turbidity levels under i) shall be fitted with an alarm, that is operational, to ensure detection of sediment plumes from the remediation works;
   iii) for the purposes of determining compliance with i) above, turbidity levels shall be measured continuously at 15 minute intervals. Non-compliance with i) will be taken to have occurred if any three consecutive 15-minute readings at one or more of the points 5, 6, 7 and 8 are greater than 66 NTU above the same three consecutive 15-minute readings at the background turbidity reference points 3 or 4. If turbidity limits are exceeded then appropriate investigation and management actions shall be implemented, in accordance with an approved Bay Remediation Management Protocol;
   iv) an appropriate definition of a wet weather event shall be provided in the Bay Remediation Management Protocol and wet weather triggers shall remain in place for three days following the wet weather event. High wind events that increase the background turbidity of the Bay may also be included in the definition.

b) dry weather turbidity monitoring:
   i) turbidity levels within one metre outside of the silt curtain(s) (ie. at any of the points 5, 6, 7 or 8) shall not exceed the turbidity levels at the background turbidity reference points (points 3 and 4) by more than 40 NTU;
   ii) the probe that is used to monitor the turbidity levels under i) shall be fitted with an alarm, that is operational, to ensure detection of sediment plumes from the remediation works;
   iii) for the purposes of determining compliance with i) above, turbidity levels shall be measured continuously at 15 minute intervals. Non-compliance with i) will be taken to have occurred if any three

[25] Incorporates an EPA General Term of Approval (L3.7)

consecutive 15-minute readings at one or more of the points 5, 6, 7 and 8 are greater than 40 NTU above the same three consecutive 15-minute readings at the background turbidity reference points 3 or 4. If turbidity limits are exceeded then appropriate investigation and management actions shall be implemented, in accordance with an approved Bay Remediation Management Protocol;

c) concentration limit for dioxins outside the outer perimeter barrier:
   i) dioxin concentrations within one metre outside of the silt curtain(s) (ie. at any of the points 5, 6, 7 or 8) shall not exceed 40 picograms total TEQs per litre (using WHO TEFs 2006);
   ii) if dioxin concentrations exceed this value then all works shall cease and the Applicant shall immediately seek the DEC's agreement to specific response measures to be implemented and as reflected in an approved Bay Remediation Management Protocol;

d) concentration limit for DDTs outside the outer perimeter barrier:
   i) DDT concentrations (measured as the sum of DDT, DDD and DDE) within one metre outside of the silt curtain(s) (ie. at any of the points 5, 6, 7 or 8) shall not exceed 0.05 micrograms per litre;
   ii) if DDT concentrations exceed this value then all works shall cease and the Applicant shall immediately seek the DEC's agreement to specific response measures to be implemented and as reflected in an approved Bay Remediation Management Protocol.

5.26B The Applicant shall apply the following water quality trigger values with respect to remediation works within Homebush Bay, unless otherwise agreed by the DEC and reflected in an approved Bay Remediation Management Protocol for the bay remediation works (refer to condition 9.7A of this consent):

a) wet weather turbidity monitoring:
   i) turbidity levels within one metre outside of the silt curtain(s) (ie. at points 9 or 10) shall not exceed the turbidity levels at the background turbidity reference points (points 3 and 4) by more than 22 NTU for trigger 1, and 44 NTU for trigger 2;
   ii) unless otherwise agreed by the DEC, the probe that is used to monitor the turbidity levels under i) shall be fitted with an alarm, that is operational, to ensure detection of sediment plumes from the remediation works;
   iii) for the purposes of determining compliance with i) above, turbidity levels shall be measured continuously at points 3, 4, 9 and 10 at 15 minute intervals. Non-compliance with i) will be taken to have occurred if any three consecutive 15-minute readings at one or more of points 9 and 10 are more than 22 NTU for trigger 1, and 44 NTU for trigger 2, above the same three consecutive 15-minute readings at the background turbidity reference points 3 or 4. If turbidity limits are exceeded then appropriate investigation and management actions shall be implemented, in accordance with an approved Bay Remediation Management Protocol;

b) dry weather turbidity monitoring:
   i) turbidity levels within one metre outside of the silt curtain(s) (ie. at points 9 or 10) shall not exceed the turbidity levels at the background turbidity reference points (points 3 and 4) by more than 20 NTU for trigger 1, and 30 NTU for trigger 2;
   ii) unless otherwise agreed by the DEC, the probe that is used to monitor the turbidity levels under i) shall be fitted with an alarm, that is operational, to ensure detection of sediment plumes from the remediation works;
   iii) for the purposes of determining compliance with i) above, turbidity levels shall be measured continuously at points 3, 4, 9 and 10 at 15 minute intervals. Non-compliance with i) will be taken to have occurred if any three consecutive 15-minute readings at one or more

of points 9 and 10 are more than 20 NTU for trigger 1, and 30 NTU for trigger 2, above the same three consecutive 15-minute readings at the background turbidity reference points 3 or 4. If turbidity limits are exceeded then appropriate investigation and management actions shall be implemented, in accordance with an approved Bay Remediation Management Protocol;

c) a turbidity trigger value and operational response shall be developed by the Applicant for point 11, based on results from the trial of the containment systems;

d) trigger values for dioxin outside the open window of the works encapsulation barrier:
   i) dioxin concentrations within one metre outside of the silt curtain(s) (ie. at points 9 and 10) shall not exceed 30 picograms total TEQs per litre (using WHO TEFs 2006);
   ii) if dioxin concentrations exceed this value then the Applicant shall implement appropriate investigation and management actions as reflected in an approved Bay Remediation Management Protocol;

e) trigger values for DDTs outside the open window of the works encapsulation barrier:
   i) DDT concentrations (measured as the sum of DDT, DDD and DDE) within one metre outside of the silt curtain(s) (ie. at points 9 and 10) shall not exceed 0.02 micrograms per litre for trigger 1;
   ii) if DDT concentrations exceed this value then the Applicant shall implement appropriate investigation and management actions as reflected in an approved Bay Remediation Management Protocol.

Surface Water and Stormwater

5.27 [26]Prior to the commencement of site preparation or construction works, the Applicant shall seek the approval of the EPA for the design capacity of clean and contaminated water detention basin(s) to be installed on site as part of the development.

5.28 [27]In relation to the management of the water cycle on the site, the Applicant shall ensure that:

a) surface water runoff and groundwater from contaminated water basin areas is collected and detained in contaminated wastewater detention basin(s);

b) stormwater and groundwater from contaminated areas is transferred to contaminated water systems and the on-site water treatment plant, and is not permitted to contaminate clean areas of the site;

c) all runoff generated from the outdoor pre-treatment stockpile areas is collected and managed in accordance with an approved Water Management Plan (refer to condition 9.7 of this consent);

d) all contaminated water is collected and treated in an on-site water treatment plant, or disposed of off-site to a wastewater treatment facility lawfully permitted to accept such waste;

e) contaminated liquids are extracted and treated appropriately in the on-site waste and water treatment systems, consistent with the performance criteria and monitoring requirements approved by the EPA; and

f) contaminated water containing organic compounds is not detained and aerated for the purpose of disposing of pollutants in the atmosphere.

5.29 [28]The Applicant shall install appropriate erosion controls (eg haybales) to prevent soil or sediment loss from the site to Homebush Bay as a result of activities undertaken on or in the vicinity of the foreshore. The Applicant shall ensure that

[26] Incorporates an EPA General Term of Approval (M2.5)
[27] Incorporates EPA General Terms of Approval (O7.5, O7.7, O7.8, O7.9, O11.1 and O11.2)
[28] Incorporates an EPA General Term of Approval (O9.1)

sediment laden run-off from the site does not enter Homebush Bay during any stage of the development.

5.30 [29]The Applicant shall ensure that any material that is to be stockpiled on site is stabilised to prevent contamination, erosion or dispersal of the material.

5.31 The Applicant shall ensure that all materials used for the construction of structures in the Bay are clean and free of contaminants, to the satisfaction of NSW Maritime.

Application of Water to Land

5.32 [30]In relation to the application of wastewater to the site, the Applicant shall ensure that:

a) wastewater/ effluent is applied strictly in accordance with an approved Water Management Plan under condition 9.7 of this consent, with respect to application times, locations, water volumes and qualities, and methods for the assessment of irrigation water quality;
b) treated water from the water treatment plant shall not be reused in remediated or clean, validated areas of the site, or within clean detention basin catchments;
c) the application of treated water shall not occur in a manner that causes surface water run-off or ponding;
d) application methods for treated water shall minimise spray drifting beyond the boundary of the utilisation area to which it is applied;
e) reuse of contaminated water/ effluent on site shall meet the requirements of NSW Health and WorkCover, as relevant; and
f) contaminated water/ effluent is not reused on-site unless it is treated to meet approved criteria, as specified in an approved Water Management Plan for the development (refer to condition 9.7 of this consent). Where the EPA's *Draft Guideline for Use of Treated Effluent by Irrigation 1995* does not provide specific reuse criteria, the Applicant shall seek the EPA's written approval of proposed reuse criteria prior to any reuse of water.

Note: the EPA has provided the following general preliminary guidance to assist the Applicant in determining reuse criteria for pollutants not specified under *Draft Guideline for Use of Treated Effluent by Irrigation 1995*:

a) criteria developed in consultation with NSW Health;
b) ANZECC and ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* for irritating toxicants;
c) reuse of from the water treatment plant (holding tanks) may be acceptable following a review of water treatment plant performance by the Applicant;
d) reuse from clean water basin(s) is likely to be acceptable; and
e) reuse from contaminated wastewater basin(s) is unlikely to be acceptable without treatment.

Discharge of Water to Sewer

5.33 [31]In the event that any wastewater from the site is to be discharged to sewer, the Applicant shall:

a) establish a Trade Waste Agreement with SWC and comply with the conditions of the Agreement at all times;
b) seek written approval from SWC for the design of all wastewater pre-treatment systems prior to the construction and operation of those systems; and
c) ensure that the development is operated in accordance with SWC's Trade Waste Policy.

[29] Incorporates a Waterways Authority General Term of Approval (10)
[30] Incorporates EPA General Terms of Approval (O10.1, O10.2, O10.3, O10.4, O10.5 and O10.6)
[31] Incorporates an EPA General Term of Approval (O7.9)

The Applicant shall obtain a Section 73 Compliance Certificate from SWC under the *Sydney Water Act 1994*. In seeking the Compliance Certificate, the Applicant shall supply to SWC all information necessary for SWC to assess the impacts from the development on SWC assets and operations. The Applicant shall comply with the requirements of SWC, issued as a Notice of Requirements under Section 74 of the *Sydney Water Act 1994*, prior to the Compliance Certificate being issued. Requirements may include relocation of existing sewer lines, payment of developer charges, issuing of a Trade Waste Agreement etc.

Homebush Bay/ Land Interface Design and Remediation Requirements

5.34 [32]Prior to the commencement of site establishment or construction works, the Applicant shall prepare and submit for the approval of the Waterways Authority, cross sections showing final levels of the foreshore component of the site, at intervals of not greater than 50 metres. The cross sections are to extend into the Bay at least 5 metres beyond the toe of the seawall and inland to at least 40 metres from the top of the seawall. The cross sections are to depict mean high water mark, the toe of the seawall and the top of the seawall.

5.35 [33]The Applicant shall ensure that a three-metre wide buffer of clean material is placed immediately behind the new seawall to be constructed as part of the development, incorporating:

a) a high permeability zone of coarse crushed rock and gravel; and
b) at least one metre of clean sandy-gravel.

This buffer shall extend to the full depth of excavations and for the full length of the foreshore associated with the site. The clean material shall meet the criteria for virgin excavated natural material (VENM), as defined in the EPA's Environmental Guidelines: *Assessment, Classification and Management of Liquid and Non-Liquid Wastes*, or as otherwise agreed by the EPA. Details of this buffer, its composition and configuration, including plans and cross-section diagrams, shall be included in the Waste Management Plan required under condition 9.9 of this consent.

5.36 [34]The Applicant shall install a 0.5-metre deep buffer of clean fill on the surface of the foreshore area of the site, within 40 metres of Homebush Bay. The clean fill shall meet the criteria for virgin excavated natural material (VENM), as defined in the EPA's Environmental Guidelines: *Assessment, Classification and Management of Liquid and Non-Liquid Wastes*, or as otherwise agreed by the EPA.

5.37 [35]After contaminated sediments in Homebush Bay to be remediated as part of the development have been removed, the Applicant shall install geotextile fabric over those areas from which contaminated sediments have been removed. Clean fill shall be placed over the geotextile fabric to return excavated areas to sediment depths present before the commencement of the development, to the satisfaction of the Waterways Authority. The clean fill shall meet the criteria for virgin excavated natural material (VENM), as defined in the EPA's Environmental Guidelines: *Assessment, Classification and Management of Liquid and Non-Liquid Wastes*, or as otherwise agreed by the EPA.

5.37A The remediation excavation depth within Homebush Bay shall be a minimum of 500 millimetres +/- 150 millimetres and with a mean depth over the entire excavation footprint of 500 millimetres. Notwithstanding, the +/- 150 millimetre

[32] Incorporates a Waterways Authority General Term of Approval (14)
[33] Incorporates an EPA General Term of Approval (O9.2)
[34] Incorporates an EPA General Term of Approval (O9.4)
[35] Incorporates a Waterways Authority General Term of Approval (13) and an EPA General Term of Approval (O9.3)

tolerance shall not apply in the following areas so as to permit an excavation depth of less than 500 millimetres:

a) excavation areas identified as having a TCDD concentration in excess of 20 μgkg^{-1} within Cells NE-2, NE-6s, NE-7s, NE-8, NE-9, and 12S as shown on the URS Figure 7 at 0.4m to 0.5m depth (Technical Paper 5 in the document referred to under condition 1.2b) to the extent they are within the proposed footprint.

Validation of excavation depth shall be by means of pre-excavation and post-excavation surveys, or as otherwise agreed by the Director-General.

5.37B The method of remediation excavation within Homebush Bay shall include all practicable measures to prevent surficial sediments from flowing into adjacent over-deepened areas and shall not involve sweeping of surficial sediment into such over-deepened areas.

5.37C Reinstatement material for excavated areas of Homebush bay shall be placed to a minimum thickness of 500 millimetres. Validation of the minimum thickness of reinstatement material shall be based on comparison of pre-reinstatement and post-reinstatement surveys or as otherwise agreed by the Director-General. The reinstatement material shall be clean fill approved by the DEC accredited site auditor for the development.

5.38 [36]The Applicant shall ensure that any seawall constructed as part of the development follows substantially the same alignment as the existing seawall and will not result in any further encroachment into Homebush Bay, to the satisfaction of the Waterways Authority.

5.39 [37]Prior to the commencement of site preparation and construction works, the Applicant shall demonstrate to the satisfaction of the Waterways Authority that all stormwater outlets to Homebush Bay have been designed to protect the bed of the Bay from scouring.

5.40 [38]The Applicant shall ensure that erosion, sedimentation and pollution control system is effectively maintained at or above design capacity for the duration of the development and until such time as all ground disturbed by the development has been stabilised and rehabilitated so that it no longer acts as a source of sediment. The Applicant shall demonstrate to the satisfaction of the Waterways Authority that measures are to be employed to stabilise the foreshore area of the site after completion of the development and prior to landscaping and/ or redevelopment of the site.

Silt Curtain Requirements

5.41 The Applicant shall ensure that silt curtains are installed, and associated monitoring operational, before sediment excavation commences and following conclusion of those works, until background ambient water quality is attained within the area bounded by the silt curtains.

5.42 (deleted).

5.43 The Applicant shall inspect silt curtains installed as part of the development daily, and following every rainfall event affecting the site, to ensure that the silt curtains are working effectively. Inspections shall include a visual check of the physical integrity of the silt curtains. If inspections indicate that there is a plume of material escaping from the silt curtains, all relevant excavation and outdoor materials

[36] Incorporates a Waterways Authority General Term of Approval (4)
[37] Incorporates a Waterways Authority General Term of Approval (7)
[38] Incorporates a Waterways Authority General Term of Approval (9)

handling activities shall cease until the silt curtain(s) are repaired. The Applicant shall record inspection dates, times and observations, with these records made available to the DEC on request.

5.44 (deleted).

5.45 (deleted).

5.46 (deleted).

5.47 (deleted).

Acid Sulfate Soils

5.48 [39]Prior to the commencement of site preparation or construction works, the Applicant shall undertake acid sulfate soil testing for areas of the site to be disturbed during site preparation and construction. Acid sulfate soil testing shall be consistent with the EPA's Environmental Guideline *Assessing and Managing Acid Sulfate Soil* and the Acid Sulfate Soil Management Advisory Committee (ASSMAC) document *Acid Sulfate Soils Manual*. All results of testing for acid sulfate soils shall be provided to the EPA. Should testing indicate that any potential or actual acid sulfate soils may be disturbed during the life of the development, the Applicant shall prepare and implement an Acid Sulfate Soil Management Protocol (refer to condition 9.11).

Hazards and Risk Impacts

Bunding and Spill Management

5.49 [40]The Applicant shall store and handle all liquid hazardous materials and liquid dangerous goods, as defined by the Australian Dangerous Goods Code, strictly in accordance with:

a) all relevant Australian Standards;
b) a minimum bund volume requirement of 110% of the volume of the largest single stored volume within the bund; and
c) the EPA's Environment Protection Manual Technical Bulletin *Bunding and Spill Management*.

In the event of an inconsistency between the requirements listed from a) to c) above, the most stringent requirement shall prevail to the extent of the inconsistency.

5.50 [41]The Applicant shall establish sealed hardstand areas under all pre-treatment, treatment and condensate storage areas and bund those areas in accordance with EPA requirements and condition 5.49 of this consent.

Pre-Construction Hazards Studies

5.51 Prior to the commencement of construction on the site, the Applicant shall prepare and submit for the approval of the Director-General, the following studies:

a) a **Fire Safety Study** for the development, covering all aspects detailed in the Department's publication *Hazardous Industry Planning Advisory Paper No. 2 - Fire Safety Guidelines* and the New South Wales Government's *Best Practice Guidelines for Contaminated Water Retention and Treatment Systems*. The Study shall include a strict maintenance schedule for essential services and other safety measures. The Study shall be submitted for the approval of the Commissioner of the NSW Fire Brigades prior to submission to the Director-General;

[39] Incorporates EPA General Terms of Approval (O13.1, O13.2 and O13.3)
[40] Incorporates an EPA General Term of Approval (O6.1)
[41] Incorporates an EPA General Term of Approval (O15.4)

b) [42]a **Hazard and Operability Study (HAZOP)** and **Control Hazard and Operability Study (CHAZOP)** of the development chaired by an independent, qualified person or team. The independent person or team shall be approved by the Director-General. The Study shall be carried out in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 8 - HAZOP Guidelines* and shall include consideration of measures to prevent spills of liquids and/ or liquid wastes (eg high/ low alarms, control valves with interlock control, non-return valves etc) on all relevant tanks and equipment used for the storage and handling of liquids or liquid wastes, including associated pipes and hoses; and

c) a **Construction Safety Study** for the development, prepared in accordance with the Department's *Hazardous Industry Planning Advisory Paper No. 7 - Construction Safety Study Guidelines*.

5.51A The studies referred to under condition 5.51 shall be updated to reflect changes made to the development through MOD-115-9-2006-i and resubmitted for approval, in the same manner required under condition 5.51.

Pre-Commissioning Hazards Studies

5.52 Prior to the commencement of commissioning of the development, in accordance with an approved Commissioning and Proof of Performance Program, the Applicant shall submit for the approval of the Director-General the following studies:

a) [43]an **Emergency Plan** for the development. The Plan shall be prepared in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 1 - Industry Emergency Planning Guidelines*. The Plan shall be developed in consultation with relevant emergency services, the Rhodes Community Consultative Committee, and the EPA; and

b) a **Safety Management System**, covering all operations at the development and any associated transport activities involving hazardous materials. The System shall clearly specify all safety-related procedures, responsibilities and policies, along with details of mechanisms for ensuring adherence to safety procedures. The System shall be developed in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 9 - Safety Management*.

5.52A The studies referred to under condition 5.52 shall be updated to reflect changes made to the development through MOD-115-9-2006-i and resubmitted for approval, in the same manner required under condition 5.52.

Emergency Response

5.53 The Applicant shall successfully rehearse the Emergency Plan referred to under condition 5.52a) of this consent on at least one occasion during the commissioning of the development or proof of performance trials. The rehearsal shall include a simulated response to a full-scale emergency at the development and shall involve relevant stakeholders, including, but not necessarily limited to relevant emergency services and adjacent landowners. The Independent Environmental Expert, or other party acceptable to the Director-General, shall certify the success of the Emergency Plan rehearsal as part of the certification required prior to the commencement of remediation operation.

Noise Impacts

Restriction to Hours

5.54 [44]To mitigate noise impacts associated with the development, the Applicant shall undertake works the subject of this consent in accordance with the restrictions listed

[42] Incorporates an EPA General Term of Approval (O6.3)
[43] Incorporates an EPA General Term of Approval (O16.1)
[44] Incorporates EPA General Terms of Approval (L6.1, L6.2 and L6.3)

below. This condition does not apply in the event of an emergency (to protect the human and biophysical environments) or under direction from a relevant authorised public authority.

a) site preparation works, construction works and excavation operations undertaken on the site (including all works associated with the construction of noise barriers on the site) shall be restricted to the following hours:
   i) between 07:00 and 18:00 on Mondays to Saturdays; and
   ii) at no time on Sundays or public holidays;

b) no works associated with the remediation and treatment of soils on the site are permitted until completion of the installation of noise barriers on the site;

c) excavation works undertaken during remediation operation shall be subject to the following restrictions:
   i) all mobile equipment outside the treatment compound shall only operate between 07:00 and 18:00 on Mondays to Saturdays;
   ii) once any elevated residential receptor is affected by daytime noise in excess of 55dB(A) ($L_{Aeq(15\ minute)}$), operation of all mobile plant outside the soil treatment compound on Saturdays shall only occur between 08:00 and 13:00; and
   iii) no mobile equipment is permitted to operate outside the treatment compound on Sundays or public holidays.

d) treatment works undertaken during remediation operation activities, including commissioning, proof of performance testing and commercial operation shall be subject to the following restrictions:
   i) only the DHTD plant and one front-end loader at a time are permitted to operate between 18:00 and 07:00 on any day; and
   ii) the operation of any front-end loader between 18:00 and 07:00 must be fully contained within the soil treatment compound.

Note: condition 5.54 of this consent does not prohibit the location of more than one front-end loader within the treatment compound, provided only one of the front-end loaders is operated at any time.

5.55 [45]The time restrictions specified under condition 5.54 of this consent may be varied with the EPA's agreement with the proposed variation in times, including the results of any community consultation that the EPA may require the Applicant to undertake, and after providing any information necessary for the EPA to reasonably determine that activities undertaken during the varied hours will not adversely impact on the acoustic amenity of receptors in the vicinity of the site.

Noise Limits (Evening and Night) and Noise Goals (Day)

5.56 The Applicant shall design, construct, operate and maintain the development to ensure that the noise contributed from the development to the background acoustic environment after the completion of noise barriers on the site does not exceed the maximum noise contribution limits specified in Table 4, at the locations indicated, and during the periods specified. The Applicant shall investigate and finalise the implementation of additional noise mitigation measures as proposed in the document referred to in condition 1.2h) of this consent. The location of the Statewide, Meriton and McRoss sites shall be as identified in the document referred to under condition 1.2f) of this consent, in the event that any residential occupation of those sites occurs during the life of the development. The criteria in Table 4 only apply at wind speeds up to 3ms^{-1} at ten metres above ground level, or, temperature inversion conditions up to 3ºC per 100 metres and wind speeds up to 2ms^{-1} at ten metres above ground level.

[45] Incorporates EPA General Term of Approval (L6.4)

Table 4 - Maximum Allowable Noise Contributions (Evening and Night)

Location	Evening *18:00 to 22:00 any day*	Night *22:00 to 07:00 Mondays to Saturdays* *22:00 to 08:00 Sundays/ public holidays*	
	$L_{Aeq(15\ minute)}$	$L_{Aeq(15\ minute)}$	$L_{A1(1\ minute)}$
Rhodes residential areas	47	44	54
Meadowbank residential areas	44	41	51
Marquet Street (EPL monitoring location, corner of Mary and Marquet Streets)	44	42	52 (criterion at ground level)
Statewide site – ground level	50	45	58
Statewide site – 10 metre elevation	52.5	47.5	58
Statewide site – 20 metre elevation	55	50	58
Meriton site – ground level	46.5	45	58
Meriton site – 10 metre elevation	49	47.5	58
Meriton site – 20 metre elevation	50.5	48	58
McRoss site – ground level	39	39	58
McRoss site – 10 metre elevation	46	46	58
McRoss site – 20 metre elevation	47	47	58

5.57 The Applicant shall design, construct, operate and maintain the development, and apply best environmental practice, with the aim of minimising noise impacts from the development after the completion of noise barriers on the site relative to the noise goals specified in Table 5, at the locations indicated, and during the periods specified. The location of the Statewide, Meriton and McRoss sites shall be as identified in the document referred to under condition 1.2f) of this consent, in the event that any residential occupation of those sites occurs during the life of the development. Stages 1 to 4 refer to the stages of the development presented in the documents listed under condition 1.2of this consent. This condition only applies at wind speeds up to $3ms^{-1}$ at ten metres above ground level or temperature inversion conditions up to 3ºC per 100 metres and wind speeds up to $2ms^{-1}$ at ten metres above ground level.

Table 5 - Maximum Noise Goals (Day)

Location	Day *07:00 to 18:00 Mondays to Saturdays* *08:00 to 18:00 pm Sundays/ public holidays*
	$L_{Aeq(15\ minute)}$
Rhodes residential areas – stage 1	55
Rhodes residential areas – stage 2	50
Rhodes residential areas – stage 3	52
Rhodes residential areas – stage 4	50
Meadowbank residential areas	48
Marquet Street – stage 1	44
Marquet Street – stage 2	53
Marquet Street – stage 3	50
Marquet Street – stage 4	50
Statewide site – ground level	59 (based on existing EPL)
Statewide site – 10 metre elevation	70
Statewide site – 20 metre elevation	70
Meriton site – ground level	67
Meriton site – 10 metre elevation	67
Meriton site – 20 metre elevation	67
McRoss site – ground level	55

McRoss site – 10 metre elevation	61
McRoss site – 20 metre elevation	62

5.57A Prior to the commencement of construction of the DHDT plant, and based on final detailed design of plant and equipment, the Applicant shall undertake an updated noise impact assessment of the DHDT plant and remediation activities, including cumulative noise impact assessment of all site remediation activities during DHTD plant operations, to demonstrate compliance with the noise limits and goals specified under conditions 5.56 and 5.57. The cumulative noise impact assessment shall also include the operation of the Allied Feeds DHTD plant, unless the Applicant confirms in writing that the two DHTD Plants will not operate concurrently. The design of the DHTD plant shall incorporate the necessary controls to ensure that the model results demonstrate compliance with the noise limits and goals specified under conditions 5.56 and 5.57. The revision of the Operation Noise Management Protocol required under condition 9.16 shall consider the results of the noise assessment and modelling for the DHTD plant and other remediation activities.

5.58 At the conclusion of each calendar month during which any of the noise goals referred to under condition 5.57 of this consent are exceeded, the Applicant shall submit to the Director-General a brief report outlining how the Applicant has applied and maintained best environmental practice to the management of noise generated by the development. The report shall specifically include, but not necessarily be limited to:

a) a demonstration of best practice noise management on the site during the month;
b) details of how activities on the site have been conducted with regard to scheduling of works, location of noise-generating works and meteorology, to minimise the potential for, and frequency of, noise impacts above relevant noise goals;
c) details of any complaints received in relation to noise and how these complaints were addressed;
d) details of the results of any consultations with affected receptors, and agreed cooperative approach(es) established as result of those consultations in relation to noise management; and
e) details of any additional noise mitigation measures, whether physical or managerial, that were identified and/ or implement during the month, with justification for not implementing any specific measures.

5.59 The Applicant shall implement any additional noise mitigation or management measures required by the Director-General, in the context of best environmental practice, and following review of any report required under condition 5.58 of this consent. Any such additional measures shall be implemented within such period as the Director-General may require.

5.60 [46]For the purpose of assessment of noise contributions specified under conditions 5.56 and 5.57 of this consent, noise from the development shall be:

a) measured at the most affected point on or within the residential site boundary at the most sensitive locations to determine compliance with $L_{Aeq(15\ minute)}$ noise limits and goals;
b) in relation to elevated locations on the Statewide, Meriton and McRoss sites, measured at exposed external areas such as balconies and common areas, as relevant, to determine compliance with $L_{Aeq(15\ minute)}$ noise limits and goals;
c) measured at approximately one metre from the dwelling façade to determine compliance with $L_{A1(1\ minute)}$ noise limits; and
d) subject to the modification factors provided in Section 4 of the *New South Wales Industrial Noise Policy* (EPA, 2000), where applicable.

[46] Incorporates an EPA General Term of Approval (L5.3 and L5.4)

Notwithstanding, should direct measurement of noise from the development be impractical, the Applicant may employ an alternative noise assessment method deemed acceptable by the EPA (refer to Section 11 of the *New South Wales Industrial Noise Policy* (EPA, 2000)). Details of such an alternative noise assessment method accepted by the EPA shall be submitted to the Director-General prior to the implementation of the assessment method.

Waste Generation and Management

5.61 [47]The Applicant shall undertaken all practicable measures, using best environmental practice, to reduce the quantity of liquid and non-liquid wastes, and the concentration of contaminants contained in those wastes, generated as a result of undertaking the development.

5.62 [48]The Applicant shall not cause, permit or allow any waste generated by the development or from outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence issued by the EPA. This condition only applies to wastes for which a licence under the *Protection of the Environment Operations Act* or the *Environmentally Hazardous Chemicals Act 1985* is required.

5.63 [49]The Applicant shall ensure that all liquid and/ or non-liquid waste generated and/ or stored on the site is assessed and classified in accordance with the EPA's Environmental Guidelines: *Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (Waste Guidelines) as in force as at 1 July 1999.

5.64 [50]The Applicant shall ensure that waste generated from the demolition of the existing seawall and/ or other on-site structures is assessed for cross-contamination with chemical waste in accordance with the *Protection of the Environment Operations Act 1997* and the Waste Guidelines.

5.65 [51]The Applicant shall ensure that wastes identified for recycling are stored separately from other wastes on the site.

5.66 (deleted).

5.67 [52]The Applicant shall ensure that the transport of any hazardous and/ or industrial and/ or Group A waste from the site is conducted strictly in accordance with any requirements that may be specified in the Environment Protection Licence for the development, including standard tracking conditions for such materials.

Flora, Fauna and Visual Amenity Impacts

5.68 The Applicant shall ensure that revegetation of the foreshore open space along the site, as identified under *Sydney Regional Environmental Plan No. 29 – Rhodes Peninsula* and associated Development Control Plan is commenced as soon as practicable after certification of that part of the site by an EPA-accredited site auditor. Revegetation shall be consistent with the requirements of any masterplan or redevelopment consent issued for the site under the *Environmental Planning and Assessment Act 1979*, and the requirements of the Waterways Authority. Should such a development consent not exist one month prior to certification by an EPA-accredited site auditor, the Applicant shall submit for the approval of the Director-General, details of how that area of the site is to be revegetated consistent with the

[47] Incorporates an EPA General Term of Approval (L4.1)
[48] Incorporates an EPA General Terms of Approval (L4.2 and L4.3)
[49] Incorporates an EPA General Term of Approval (O4.1)
[50] Incorporates an EPA General Term of Approval (O4.3)
[51] Incorporates an EPA General Term of Approval (O4.2)
[52] Incorporates EPA General Terms of Approval (M8.1 and R2.1)

Sydney Regional Environmental Plan No. 29 – Rhodes Peninsula and associated Development Control Plan, and to meet the requirements of the Waterways Authority.

The Applicant may satisfy this condition by demonstrating to the satisfaction of the Director-General that another party, such as a future redeveloper of the site with a relevant development consent, will undertake works consistent with the outcomes specified under this condition.

5.69 [53]The Applicant shall ensure that weed free soil, suitable for local riparian areas, forms the upper layer(s) of the soil in placed along the foreshore of the site, to the satisfaction of the Waterways Authority.

The Applicant may satisfy this condition by demonstrating to the satisfaction of the Director-General that another party, such as a future redeveloper of the site with a relevant development consent, will undertake works consistent with the outcomes specified under this condition.

Heritage Impacts

5.70 In the event that any item with identified or suspected heritage value is discovered/ located during the development, the Applicant shall cease all activities that may adversely impact on the item and contact the NSW Heritage Office (in relation to items of non-indigenous heritage significance) or the National Parks and Wildlife Service (in relation to items of indigenous heritage significance). The Applicant shall comply with the requirements of the NSW Heritage Office and/ or the National Parks and Wildlife Service in relation to the management of the discovered/ located item.

Completion of Works

5.71 [54]The Applicant shall engage an independent site auditor accredited under the *Contaminated Land Management Act 1997* to provide advice in relation to the appropriateness of the remediation approach for addressing the significant risk of harm associated with the site (as distinct from the environmental and safety performance of the development). Upon completion of remediation of the site, or each part of the site if release of the site is staged, the Applicant shall provide to the Director-General and the EPA a site audit statement(s) and summary site audit report(s) commenting on whether the significant risk of harm associated with the contamination of Homebush Bay sediments has been addressed, and that the site has been remediated in such a way that the remediated site is suitable for its intended use(s).

5.72 [55]At the conclusion of remediation of the site, or each part of the site, as may be relevant, the Applicant shall demonstrate to the satisfaction of the Director-General and the EPA that a public positive covenant under the *Conveyancing Act 1919* has been, or will be applied to the site, or that relevant part of the site. The covenant(s) shall require maintenance and monitoring of the integrity of the contaminated material to be retained on the site after the conclusion of remediation. The covenant(s) shall address the following matters, as relevant:

a) the preparation and keeping of documentation that records the details of the contaminated materials remaining on the site;
b) an objective to provide transparent and equitable notice of the future potential liabilities/ legacies associated with the presence of contaminated material on the site to parties who may have an interest in the site, or relevant parts of the site, in future;
c) incorporation of terms that may be specified by the EPA and the Director-General; and

[53] Incorporates a Waterways General Term of Approval (12)
[54] Incorporates an EPA General Term of Approval (A4.1)
[55] Incorporates an EPA General Term of Approval (G4.2)

d) if required by the EPA or the Director-General, execution of the covenant by the registered proprietor of the land and each person who has a registered estate or interest in the land and who is to be bound by it.

The Applicant shall commence consultation with the Director-General and the EPA as soon as practicable after the date of operation of this consent, or within such period otherwise agreed by the Director-General and the EPA, with the aim of establishing the scope and content of any covenant(s) that may be applied to the site. Unless otherwise agreed or required by the Director-General and the EPA, the scope and content of any such covenant(s) shall be developed to the satisfaction of the Director-General and the EPA prior to the commencement of remediation excavation.

5.73 The Applicant shall provide all required information to the Department and Council, as relevant, in order to identify residual contamination on the site after the completion of remediation works, through appropriate notation of the certificate(s) applying to the site under section 149 of the *Environmental Planning and Assessment Act 1979*.

6. ENVIRONMENTAL MONITORING AND AUDITING

6.1 [56]All monitoring required under this consent, and recording of monitoring results, shall be undertake to meet the requirements of the EPA and in accordance with relevant EPA guidelines.

Meteorological Monitoring

6.2 [57]The Applicant shall continuously monitor, utilising the meteorological monitoring station referred to under condition 5.9 of this consent, each of the parameters listed in Table 6, utilising the sampling method indicated and applying a 15-minute average period to all results, and recording data in units specified in the Table. All monitoring results obtained under this condition shall be made available to the Rhodes Community Consultative Community, and to the general public on request.

Table 6 – Meteorological Monitoring

Parameter	Units of Measure	Sampling Method
Temperature at two metres	^{o}C	AM-4
Temperature at ten metres	^{o}C	AM-4
Wind speed at two metres	ms^{-1}	AM-2 and AM-4
Wind direction at ten metres	^{o}	AM-2 and AM-4
Sigma theta at ten metres	^{o}	AM-2 and AM-4
Solar radiation	Wm^{-2}	AM-4

Remediation Technology Monitoring

6.3 [58]The Applicant shall prepare and implement a **Remediation Technology Monitoring Program** to monitor and record critical operating parameters during commissioning, proof of performance trials and operation of the development. The Program shall address the requirements of the EPA, and shall include procedures and processes for monitoring:

a) quantities of materials fed to, and removed from the remediation process;
b) qualities of materials fed to, and removed from the remediation process;
c) characterisation of matrices constituting materials fed to the process;
d) operating temperatures of the technology; and
e) residence times for materials processed through the technology.

[56] Incorporates EPA General Terms of Approval (M1.1, M1.2, M1.3, M6.1, M6.2, M6.3 and M6.4)
[57] Incorporates an EPA General Term of Approval (M3.1)
[58] Incorporates an EPA General Term of Approval (M4.1)

All monitoring results obtained under this condition shall be made available to the Rhodes Community Consultative Community, and to the general public on request.

Air Quality Monitoring

Discharges to Atmosphere – DHTD Unit

6.4 The Applicant shall determine the pollutant concentrations and emission parameters specified in Table 7 below, at air monitoring/discharge point 1 (refer to condition 5.10 of this consent), and employing the sampling and analysis method specified. Monitoring shall be undertaken during commissioning and proof of performance trials, as specified in an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent), and quarterly during operation of the development. The frequency of monitoring for "Special Compounds" listed in the Table shall be determined by the monitoring results from proof of performance tests. Sampling positions for the purpose of this condition shall be located in accordance with test method TM-1. All monitoring results obtained under this condition shall be made available to the Rhodes Community Consultative Community, and to the general public on request.

Table 7 – Periodic Pollutant and Parameter Monitoring (Air)

Pollutant/ Parameter	Units of Measure	Method
Chlorine (Cl_2)	mgm^{-3}	TM-7 and TM-8
Hydrogen chloride (HCl)	mgm^{-3}	TM-7 and TM-8
Nitrogen dioxide (NO_2) or nitric oxide (NO), or both	mgm^{-3}	TM-11
Solid particles	mgm^{-3}	TM-15
Dioxins and furans	ngm^{-3}	TM-18
Total volatile organic compounds (VOC)	ppm	TM-34
Sulfuric acid mist (H_2SO_4) or sulfur trioxide (SO_3) or both, as SO_3 equivalent	mgm^{-3}	TM-3
Fluorine (F_2) and any compound containing fluorine, as total fluoride (HF) equivalent	mgm^{-3}	TM-9
Total of Sb, As, Cd, Pb, Hg, Be, Cr, Co, Mn, Ni, Se, Sn and V	mgm^{-3}	TM-12, TM-13 and TM-14
Cadmium	mgm^{-3}	TM-12, TM-13 and TM-14
Mercury	mgm^{-3}	TM-12, TM-13 and TM-14
"Special Compounds" (endrin, lindane, hexachlorobenzene, pentachlorobenzene, pentachlorophenol, 1,2,4,5-tetrachlorobenzene, dioxins total, 2-chlorophenol, 4-chlorophenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 1,4-dichlorobenzene, 2,4-D, 2,4,5-T, aldrin, dieldrin, chlordane, DDTs, heptachlor epoxide, and polycyclic aromatic hydrocarbons (PAHs) as benzo(a)pyrene equivalent)	mgm^{-3}	TM-34
carbon monoxide	mgm^{-3}	TM-32
Velocity	ms^{-1}	TM-2
Moisture content in stack gases	%	TM-22
Dry gas density	kgm^{-3}	TM-23
Molecular weight of stack gases	$gmol^{-1}$	TM-23
Carbon dioxide in stack gases	%	TM-24
Oxygen in stack gases	%	TM-25

6.5 The Applicant shall continuously monitor the pollutant concentration and emission parameters specified in Table 8 below, at air monitoring/discharge point 1 (refer to condition 5.10 of this consent), and employing the sampling and analysis method specified. Monitoring shall be undertaken during commissioning and proof of performance trials, as specified in an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent), and during operation

of the development. All monitoring results obtained under this condition shall be made available to the Rhodes Community Consultative Community, and to the general public on request.

Table 8 – Continuous Pollutant and Parameter Monitoring (Air)

Pollutant/ Parameter	Units of Measure	Method
nitrogen dioxide (NO_2) or nitric oxide (NO) or both	mgm^{-3}	CEM-2
carbon monoxide	ppm	CEM-4
volumetric flowrate	m^3s^{-1}	CEM-6
temperature	^oC	TM-2
carbon dioxide in stack gases	%	CEM-3
oxygen in stack gases	%	CEM-3

6.5A At least three months prior to the commencement of commissioning of the thermal treatment unit, the Applicant shall submit for the approval of the DEC a report containing the manufacturer's performance specification for the acid gas scrubber and the proposed method for continuously monitoring the performance of the scrubber.

Discharges to Atmosphere – Soil Drying Enclosure

6.6 The Applicant shall determine the pollutant concentrations and emission parameters specified in Table 9 below, at air monitoring/discharge point 2 (refer to condition 5.10 of this consent), and employing the sampling and analysis method specified. Monitoring shall be undertaken during commissioning and proof of performance trials, as specified in an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent), and six-monthly during operation of the development. The frequency of monitoring for "Special Compounds" listed in the Table shall be determined by the monitoring results from commissioning and proof of performance tests. Sampling positions for the purpose of this condition shall be located in accordance with test method TM-1. All monitoring results obtained under this condition shall be made available to the Rhodes Community Consultative Community, and to the general public on request.

Table 9 – Periodic Pollutant and Parameter Monitoring (Air)

Pollutant/ Parameter	Units of Measure	Method
Total of Sb, As, Cd, Pb, Hg, Be, Cr, Co, Mn, Ni, Se, Sn and V	mgm^{-3}	TM-12, TM-13 and TM-14
Cadmium	mgm^{-3}	TM-12, TM-13 and TM-14
Mercury	mgm^{-3}	TM-12, TM-13 and TM-14
Solid particles	mgm^{-3}	TM-15
Dioxins and furans	ngm^{-3}	TM-18
Special Compounds (endrin, lindane, hexachlorobenzene, pentachlorobenzene, pentachlorophenol, 1,2,4,5-tetrachlorobenzene, dioxins total, 2-chlorophenol, 4-chlorophenol, 2,4-dichlorophenol, 2,4,5-trichlorophenol, 2,4,6-trichlorophenol, 1,4-dichlorobenzene, 2,4-D, 2,4,5-T, aldrin, dieldrin, chlordane, DDTs, heptachlor epoxide, and polycyclic aromatic hydrocarbons (PAHs) as benzo(a)pyrene equivalent)	mgm^{-3}	TM-34
Total volatile organic compounds (VOC), or other measure of light hydrocarbons	Refer to condition 6.8 of this consent	

6.7 Prior to the commencement of any soil handling in the soil drying enclosure, the Applicant shall submit to the Director-General, details of a continuous monitoring methodology, or other methodology acceptable to the EPA, to be used to detect breakthrough of the carbon filter(s) applied to the soil drying enclosure (air

monitoring point 3, as identified under condition 5.10 of this consent). Details of the continuous monitoring method shall be accompanied by evidence of the DEC's satisfaction with the continuous monitoring method. The Applicant shall apply the approved monitoring method on a continuous basis during commissioning, proof of performance trials and operation of the development.

6.8 [59]Prior to the commencement of any soil handling in the soil drying enclosure, the Applicant shall submit to the Director-General, details of a site specific emission concentration limit(s) for light hydrocarbons emitted from the soil drying enclosure exhaust (air monitoring point 3, as identified under condition 5.10 of this consent) and the method by which these emissions will be monitored. Details of the emission concentration limit(s) and monitoring method shall be accompanied by evidence of the EPA's satisfaction with the limit(s) and monitoring method. The emission concentration limit(s) and monitoring method shall apply to the development from the commencement of soil handling in the soil drying enclosure.

6.9 [60]Within two months of the completion of commissioning and proof of performance trials, undertaken accordance with an approved Commissioning and Proof of Performance Program, the Applicant shall provide results to the EPA and the Director-General of the monitoring required under condition 6.6 of this consent, including an assessment of compliance with the air emissions discharge limits specified under this consent.

Thermal Oxidiser Performance Monitoring

6.9A The Applicant shall continuously monitor the performance of the thermal oxidiser (monitoring point 4 identified under condition 5.10 of this consent). The parameters specified in Table 9A shall be monitored, employing the sampling and analysis methods indicated. All monitoring results obtained under this condition shall be made available to the Rhodes Community Consultative Community, and to the general public on request.

Table 9A - Thermal Oxidiser Performance Monitoring

Parameter	Units of Measure	Method
volumetric flowrate	$m^{-3}s^{-1}$	CEM-6
temperature	^{o}C	TM-2

6.9B The Applicant shall demonstrate the destruction and removal efficiency of the DHTD Plant during the proof of performance trials, as specified in an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent). The methodology to demonstrate the destruction and removal efficiency of the DHTD Plant shall be approved by the DEC.

Ambient Dust Monitoring

6.10 [61]The Applicant shall, from the commencement of soil disturbing works on the site, continuously monitor ambient dust concentrations (PM_{10}) at air monitoring points 5 and 6 (refer to condition 5.10 of this consent), employing the sampling and analysis methods specified under AM-18 or AS3580.9.8. Results of this monitoring shall be recorded in μgm^{-3}. All monitoring results obtained under this condition shall be made available to the Rhodes Community Consultative Community, and to the general public on request.

This condition may be satisfied with cooperative agreement with the Rhodes Environmental Monitoring and Management Committee, in relation to ambient dust monitoring, provided the monitoring outcomes of this condition are met.

[59] Incorporates EPA General Terms of Approval (L1.1, M2.1, M2.2 and U1.2)
[60] Incorporates EPA General Terms of Approval (M9.1 and U2.1)
[61] Incorporates EPA General Terms of Approval (M2.1 and M2.4)

Air Quality Monitoring Frequency

6.11 The frequency and/ or scope of the pollutant/ parameter monitoring required under conditions 6.4 to 6.10 of this consent, inclusive, may be altered provided:

a) pollutant/ parameter monitoring has been undertaken for a period of no less than six months (measured from the commencement of commissioning in accordance with an approved Commissioning and Proof of Performance Program);
b) there has been no exceedence of any limit placed on the subject pollutant or parameter, through this consent or any Environment Protection Licence under the *Protection of the Environment Operations Act 1997* within the preceding six-month period;
c) there has been no reasonable complaint received from the public in relation to the subject pollutant/ parameter within the preceding six-month period (refer to condition 7.3 of this consent); and
d) the EPA agrees, in writing, with the proposed alteration to the frequency of pollutant/ parameter monitoring.

Noise Monitoring

6.12 [62]The Applicant shall prepare and implement a **Site Establishment and Construction Noise Monitoring Program** to monitor noise contributions from the development during site establishment and construction activities. The Program shall address the requirements of the EPA and shall include, but not necessarily be limited to:

a) identification of noise monitoring locations;
b) scheduling of noise monitoring within the daytime (07:00 to 18:00);
c) provisions and procedures for determining $L_{Aeq(15\ minute)}$, $L_{A90(15\ minute)}$ and $L_{A1(1\ minute)}$ noise levels; and
d) review and assessment mechanisms to establish and address noise impacts on residential receptors.

6.13 [63]The Applicant shall prepare and implement an **Operation Noise Monitoring Program** to monitor noise contributions from the development during remediation excavation, commissioning, proof of performance trials and remediation operation. The Program shall address the requirements of the EPA and shall include, but not necessarily be limited to:

a) identification of noise monitoring locations;
b) scheduling of noise monitoring, with reference to day, evening and night-time periods;
c) provisions and procedures for determining $L_{Aeq(15\ minute)}$, $L_{A90(15\ minute)}$ and $L_{A1(1\ minute)}$ noise levels; and
d) review and assessment mechanisms to establish and address noise impacts on residential receptors.

Water Quality Monitoring

6.14 [64]The Applicant shall prepare and implement a **Water Monitoring Program** for the development. The Program shall address the requirements of the EPA and Waterways Authority, and shall include, but not necessarily be limited to:

a) monitoring requirements for the detention basin(s), for the first three months of operation of the basin(s), including:
    i) at least one sample of the discharged water for each discharge event from the detention basin(s), analysed for the full range of indicators (specified in an approved Water Management Plan, required under condition 9.7 of this consent) potentially occurring on the site, based on

[62] Incorporates an EPA General Term of Approval (M6.1)
[63] Incorporates an EPA General Term of Approval (M6.2)
[64] Incorporates EPA General Terms of Approval (M2.6, M2.7 and M2.8)

the indicators and parameters identified in section 4.0 of the document referred to under condition 1.2d) of this consent;

ii) monitoring of stormwater and wastewater collected or diverted to a detention basin(s), during periods when no discharge is occurring, for the same suite of indicators and parameters referred under i) above;

b) provision for review of the Program after the first three months of operation of the detention basin(s) including:

i) review of monitoring parameters, including, but not limited to those listed in Table 10 below, and revision of monitoring parameters in the Program, based on the monitoring results obtained during the first three months of basin monitoring, and results from soil monitoring;

ii) provision for on-going monitoring in accordance with a) above, until the revised Program has been approved by the EPA;

c) provision for the application of the revised Program, once approved by the EPA, for the remainder of the development. The Applicant shall monitor detention basin(s) in accordance with the approved revised Program, including sampling of each discharge event, and analysis of those discharge samples based on the revised list of parameters (this sample may be used as the monthly sample where timing coincides).

Table 10 - Sediment Discharge Basin Monitoring Parameters

Pollutant/ Parameter	Units of Measure	Frequency	Sampling Method
TSS	mgL^{-1}	Monthly and after rainfall (as defined in the Water Management Plan)	Grab sample
Turbidity	NTU	Continuous (during discharges) and monthly, and after rainfall from basin(s)	Turbidity meter (in line meter with alarm for discharges)
pH	-	Monthly and after rainfall	Field probe
Dissolved oxygen	mgL^{-1} or % saturation	Monthly and after rainfall	Field probe
Oil and grease	μgL^{-1}	Monthly and after rainfall	Grab sample
Endrin	μgL^{-1}	Monthly and after rainfall	Grab sample
Lindane	μgL^{-1}	Monthly and after rainfall	Grab sample
Hexachlorobenzene	μgL^{-1}	Monthly and after rainfall	Grab sample
Pentachlorobenzene	μgL^{-1}	Monthly and after rainfall	Grab sample
Pentachlorophenol	μgL^{-1}	Monthly and after rainfall	Grab sample
1,2,4,5-tetrachlorobenzene	μgL^{-1}	Monthly and after rainfall	Grab sample
Dioxins total	pgL^{-1}	Monthly and after rainfall	Grab sample
2-chlorophenol	μgL^{-1}	Monthly and after rainfall	Grab sample
4-chlorophenol	μgL^{-1}	Monthly and after rainfall	Grab sample
2,4-dichlorophenol	μgL^{-1}	Monthly and after rainfall	Grab sample
2,4,5-trichlorophenol	μgL^{-1}	Monthly and after rainfall	Grab sample
2,4,6-trichlorophenol	μgL^{-1}	Monthly and after rainfall	Grab sample
1,4-dichlorobenzene	μgL^{-1}	Monthly and after rainfall	Grab sample
2,4-D	μgL^{-1}	Monthly and after rainfall	Grab sample
2,4,5-T	μgL^{-1}	Monthly and after rainfall	Grab sample
Aldrin	μgL^{-1}	Monthly and after rainfall	Grab sample
Dieldrin	μgL^{-1}	Monthly and after rainfall	Grab sample
Chlordane	μgL^{-1}	Monthly and after rainfall	Grab sample
DDTs	μgL^{-1}	Monthly and after rainfall	Grab sample
Heptachlor epoxide	μgL^{-1}	Monthly and after rainfall	Grab sample
Polycyclic aromatic hydrocarbons (PAHs) as benzo(a)pyrene equivalent	μgL^{-1}	Monthly and after rainfall	Grab sample

6.14A The Applicant shall prepare and implement a **Bay Water Monitoring Program** with respect to water quality in Homebush Bay during sediment excavation and associated works. The Program shall address the requirements of the DEC and NSW Maritime. The Program shall be incorporated in the Bay Remediation Management Protocol required under condition 9.7A, and shall include, but not necessarily limited to:

a) monitoring requirements for the trial of the sediment containment system (refer to condition 6.14E);

b) monitoring requirements for the commissioning stage of the bay remediation works, including daily grab sampling at bay monitoring locations (refer to condition 5.20) to be analysed for the full suite of contaminants (refer to condition 6.14B) and turbidity and organic carbon for seven days of daily monitoring including at least two full movements of the pontoon (ie. two arcs of the excavator), or as modified in writing by the DEC following review of monitoring results from the trial of the sediment containment system;

c) provision for a review of the monitoring program as soon as practicable after the trial of the sediment containment system (refer to condition 6.14E). The Applicant may propose and justify alternative measurements, parameters and concentration limits for monitoring the sediment attached chemicals and the soluble chemical levels in the bay. The review shall be based on the results of the trial or other relevant data or information. Based on this review the Applicant may propose to monitor fewer parameters at a lower frequency if the trial results justify such a revision and propose a review of the licence limits for the approval of the DEC. Further reviews based on new information may be proposed at other stages of the works including after the commissioning stage monitoring program; and

d) provision for the application of the revised Program, once approved by the DEC, for the reminder of the life of the development, unless otherwise agreed by the DEC (Note: the Applicant shall submit the Program for the approval of the DEC, including revised parameters to be monitored and revised concentration limits for the point(s) of discharge).

> Note: The DEC has indicated that the objective of the monitoring program is to identify the pollutant contributions from the works and identify when natural processes in the bay may lead to licence limits being exceeded. The trial of the sediment containment system (6.14E) and the commissioning stage monitoring may provide information for a review of the licence limits for monitoring the performance of the dredging containment system. When reviewing the licence limits the DEC will take into account the likely impact of the pollution caused, practical measures to prevent, control, abate, and mitigate pollution and protect the environment from pollution.

6.14B For each monitoring point specified in Table 10A, the Applicant shall monitor (by sampling and obtaining the results by analysis) the concentration of each pollutant specified. The Applicant shall use the sampling method, units of measure, and sample at the frequency, specified in the Table. Monitoring requirements in the Table may be modified by the DEC following its review of monitoring results from the trial of the sediment containment system, from commissioning stage monitoring or from on-going monitoring.

Table 10A – Water Quality Monitoring Requirements (Homebush Bay)

Pollutant/Parameter	Units of Measure	Frequency	Sampling Method
Commissioning Stage[(i)]			
TCDD (equivalent)	pgL^{-1}	Daily	Grab sample half way through outgoing tide at Point 7 and 9 if one window of the works encapsulation barrier (WEB) is open; or Grab sample half way through outgoing tide at points 7 and 8, 9 and 10 if two windows of the WEB are open.
DDTs	μgL^{-1}	Daily	Grab sample half way through outgoing tide at Point 7 and 9 if one window of the works encapsulation barrier (WEB) is open; or Grab sample half way through outgoing tide at points 7 and 8, 9 and 10 if two windows of the WEB are open.
Turbidity	NTU	Continuous	Probe
Total organic carbon	mgL^{-1}	Daily	Grab sample half way through outgoing tide at Point 7 and 9 if one window of the works encapsulation barrier (WEB) is open; or Grab sample half way through outgoing tide at points 7 and 8, 9 and 10 if two windows of the WEB are open.
All pollutants listed on Point 17 on EPL [(ii)]	μgL^{-1} [(iii)]	Weekly or monthly [(v)]	Grab sample half way through outgoing tide at Point 7 and 9 if one window of the works encapsulation barrier (WEB) is open; or Grab sample half way through outgoing tide at points 7 and 8, 9 and 10 if two windows of the WEB are open.
Ongoing[(iv)]			
TCDD (equivalent)	pgL^{-1}	Weekly, monthly or three-monthly [(v)]	Grab sample half way through outgoing tide at Point 7 and 9 if one window of the works encapsulation barrier (WEB) is open; or Grab sample half way through outgoing tide at points 7 and 8, 9 and 10 if two windows of the WEB are open.
DDTs	μgL^{-1}	Weekly, monthly or three-monthly [(v)]	Grab sample half way through outgoing tide at Point 7 and 9 if one window of the works encapsulation barrier (WEB) is open; or Grab sample half way through outgoing tide at points 7 and 8, 9 and 10 if two windows of the WEB are open.
Turbidity	NTU	Continuous	Probe
Total organic carbon	mgL^{-1}	See note below [(v)]	See note below[(v)]
Relevant chemicals from EPL point 17		See note below [(v)]	See note below[(v)]

Notes:
(i) Commissioning stage is defined as the first two full movements of the pontoon ie. two arcs of the excavator
(ii) Environment Protection Licence 12146
(iii) Except: TCDD equivalent which is pg/L; pH which is pH units; Turbidity which is nephelometric turbidity units; Total Suspended Solids which is mg/L; and temperature which is degrees Celsius
(iv) There shall be increased monitoring during the remediation of the most contaminated centre area (frequency/no. of parameters).
(v) Depending on results of trial and/or commissioning stage monitoring.

6.14C The Applicant shall examine the potential for monitoring total organic carbon (TOC) to complement turbidity for regular ongoing monitoring as a surrogate for sediment-attached pollutants.

6.14D The Applicant shall examine the potential of using semi-permeable membrane devices as an ongoing monitoring tool to determine average water column concentrations during dredging.

Trial of Sediment Containment System

6.14E A trial of the proposed sediment containment system and monitoring program shall be conducted prior to implementing the full system. The trial shall include additional grab samples at Point 11 outside the excavation working area barrier (refer to attachment B to this consent) and at Point 3 as a measure of the

ambient conditions in the bay. All grab samples shall be analysed for all pollutants listed for Point 17 on the current Environment Protection Licence. Total suspended solids, Turbidity (NTU) and total organic carbon measurements shall also be taken during the trial. A minimum of three grab samples at each sampling location should be taken, including adjacent to and outside the excavation working area barrier, outside open windows of the works encapsulation barrier, outside the outer perimeter barrier and at an ambient background site. The Applicant shall submit details of the proposed trial's methodology and monitoring for the approval of Director-General and the DEC prior to undertaken the trial.

Solubilisation Trial

6.14F Unless an alternative proposal is found acceptable by the DEC to address the assessment of the impact of soluble chemicals, a solubilisation trial shall be undertaken prior to the commencement of bay remediation works according to the following study design:

a) collection of five sediment samples in the most contaminated grid squares of the bay;
b) collection of water sample(s) from the western side of bay as per trial 2 (see Appendix D of the document referred to in condition 1.2i));
c) analysis of sediment samples for dioxins, DDTs and chlorinated benzenes;
d) selection of the two worst sediment samples – analyse these 2 samples for rest of suite of chemicals as per trial 1 and trial 2 (see Appendix D of the document referred to in condition 1.2i)) with appropriate detection limits agreed with the DEC;
e) analysis of the water sample (s) for suite of chemicals as per trial 1 and 2;
f) conducting elutriate test for each of the samples by mixing 1:4 sediment/water mix for 30 minutes;
g) settlement of the mixture for one hour;
h) separation of water from the sediment using a centrifuge – separation shall be completed within a few hours at most; and
i) analysis of the elutriate for whole suite of chemicals as per trial 1 and trial 2.

The elutriate tests shall be conducted in duplicate – i.e. two tests for each sediment sample (i.e. four altogether) resulting in four elutriate samples for analysis – two from each sediment sample. The results of the solubility trials shall be submitted to the DEC and the Department with the Water Monitoring Program for the Homebush Bay remediation works required under condition 6.14A.

Water Quality Monitoring Frequency

6.15 The frequency and/ or scope of the pollutant/ parameter monitoring required under the revised Water Monitoring Program referred to under condition 6.14b) of this consent may be altered provided:

a) pollutant/ parameter monitoring has been undertaken for a period of no less than six months (measured from the commencement of monitoring under the revised Water Monitoring Program);
b) there has been no exceedence of any limit placed on the subject pollutant or parameter, through this consent or any Environment Protection Licence under the *Protection of the Environment Operations Act 1997* within the preceding six-month period;
c) there has been no reasonable complaint received from the public in relation to the subject pollutant/ parameter within the preceding six-month period (refer to condition 7.3 of this consent); and
d) the EPA agrees, in writing, with the proposed alteration to the frequency of pollutant/ parameter monitoring.

6.16 (deleted)

Auditing

6.17 Six months after the commencement of operation of the development, or within such period as otherwise agreed by the Director-General, the Applicant shall commission an independent, qualified person or team to undertake a Hazard Audit of the development. The independent person or team shall be approved by the Director-General prior to the commencement of the Audit. A **Hazard Audit Report** shall be submitted for the approval of the Director-General no later than one month after the completion of the Audit. Further Hazard Audits shall be undertaken as may be required by the Director-General. Hazard Audits shall be carried out in accordance with the Department's publication *Hazardous Industry Planning Advisory Paper No. 5 - Hazard Audit Guidelines*. All Hazard Audit Reports shall be made available for public inspection on request.

6.18 Six months after the commencement of operation of the development, the Applicant shall commission an independent person or team to undertake an Environmental Audit of the development. The independent person or team shall be approved by the Director-General prior to the commencement of the Audit. An **Environmental Audit Report** shall be submitted for the approval of the Director-General no later than one month after the completion of the Audit. Further Hazard Audits shall be undertaken as may be required by the Director-General. The Audits shall:

a) be carried out in accordance with *ISO 19011:2002 - Guidelines for Quality and/ or Environmental Management Systems Auditing*;
b) assess compliance with the requirements of this consent, and other licences and approvals that apply to the development;
c) assess the environmental performance of the development against the predictions made and conclusions drawn in the documents referred to under condition 1.2 of this consent; and
d) review the effectiveness of the environmental management of the development, including any environmental impact mitigation works.

The Director-General may require the Applicant to undertake works to address the findings or recommendations presented in the Audit Reports. Any such works shall be completed within such time as the Director-General may require. All Environmental Audit Reports shall be made available for public inspection on request.

7. COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

7.1 Subject to confidentiality, the Applicant shall make all documents required under this consent available for public inspection on request.

Complaints Procedure

7.2 Prior to the commencement of site establishment or construction of the development, the Applicant shall ensure that the following are available for community complaints:

a) a 24-hour, toll-free telephone number on which complaints about the development may be registered;
b) a postal address to which written complaints may be sent; and
c) an email address to which electronic complaints may be transmitted.

The telephone number, the postal address and the email address shall be advertised on at least one occasion prior to the commencement of construction of the development, through a medium approved by the Director-General. These details shall also be provided on the Applicant's internet site, should one exist.

7.3 The Applicant shall record details of all complaints received through the means listed under condition 7.2 of this consent in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:

a) the date and time, where relevant, of the complaint;
b) the means by which the complaint was made (telephone, mail or email);
c) any personal details of the complainant that were provided, or if no details were provided, a note to that effect;
d) the nature of the complaint;
e) any action(s) taken by the Applicant in relation to the complaint, including any follow-up contact with the complainant; and
f) if no action was taken by the Applicant in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the EPA and the Director-General upon request. The Applicant shall also make summaries of the Register, without details of the complainants, available to the public for inspection upon request.

7.4 Prior to the commencement of site establishment or construction of the development, the Applicant shall develop and submit for the approval of the Director-General, a **Complaints Handling and Response Protocol**, detailing how public complaints will be managed and addressed in an appropriate and timely manner. The Protocol shall be developed in consultation with the Rhodes Community Consultation Committee.

Community Consultation

7.5 The Applicant shall participate in the Rhodes Community Consultative Committee and continue to consult with the Committee in relation to the environmental and safety performance of the development, including in relation to the environmental management plans required under conditions 9.7 to 9.15 of this consent, inclusive. The Applicant shall, in consultation and cooperation with other relevant members of the Rhodes Environmental Monitoring and Management Committee, arrange for and bear the cost of all reasonable requirements for Committee meetings and the administrative activities associated with those meetings.

Note: "reasonable requirements", as referred to in condition 7.5 of this consent are intended to cover such matters as meeting location, taking and distribution of minutes, refreshments etc. It is not intended to cover travel expenses, legal or professional services or other matters not directly related to the running of Rhodes Community Consultative Committee meetings.

7.6 The Applicant shall participate in the Rhodes Community Consultative Committee, including attendance and provision of environmental and safety performance data, as may be agreed in consultation with the members of the Committee.

7.7 The Applicant shall provide funding up to $15,000 during commissioning and proof of performance trials, then $1,000 per month during operation and decommissioning/ deconstruction for the members of the Rhodes Community Consultative Committee to obtain independent technical advice from a suitably qualified person(s). The quantum of funding for this purpose, up to the maxima specified above, shall be established with the Committee, taking into account any similar funding contributions that may be made by other relevant remediation or redevelopment proponents. The Applicant shall establish, in consultation with the members of the Rhodes Community Consultative Committee, an appropriate arrangement for the transfer and management of funds. Details of the arrangements agreed between the Applicant and the Committee shall be forwarded to the Director-General as soon as practicable after reaching an agreement.

Should the Applicant and the Committee be unable to agree on arrangements for the transfer and management of the funds referred to under this condition, the matter may be referred to the Director-General for resolution, whose determination of the matter shall be final.

7.8 As part of the community consultation program for the development, the Applicant shall develop a plan for informing the local community of the works subject to MOD-115-9-2006-i. The plan shall be developed in consultation with the Rhodes Community Consultative Committee and shall be implemented during the carrying out of the MOD-115-9-2006-i works.

8. COORDINATION OF WORKS ON THE RHODES PENINSULA

Rhodes Environmental Monitoring and Management Committee

8.1 The Applicant shall participate in, and attend, the Rhodes Environmental Monitoring and Management Committee.

8.2 Prior to the commencement of commissioning of the development, or within such period as otherwise agreed by the Director-General, the Applicant shall develop, in consultation with the members of the Rhodes Environmental Monitoring and Management Committee, a Cumulative Remediation Impacts Protocol(s) to provide a framework for the coordinated and cooperative undertaking of major remediation and redevelopment works on the Rhodes Peninsula. The Cumulative Remediation Impacts Protocol(s) shall include, but not necessarily be limited to:

a) procedures for access to, and provision of, monitoring data from the respective remediation and redevelopment works;
b) measures to ensure a coordinated and cooperative approach to the undertaking of remediation and redevelopment works, including scheduling and locational considerations, to minimise cumulative impacts generated by the remediation and redevelopment works;
c) agreements relating to the scheduling of remediation and redevelopment works to minimise land use conflicts between sites the subject of the works;
d) arrangements for coordinated and cooperative monitoring of ambient environmental impacts, including agreements relating to sharing of monitoring networks/ infrastructure, coordinated interpretation of monitoring results and coordination dissemination of monitoring results to relevant parties;
e) provision for coordinated and cooperative participation of members of the Rhodes Environmental Monitoring and Management Committee on the Rhodes Community Consultative Committee, including agreements in relation to funding of an independent technical expert for that Committee and provisions to address the Committee's reasonable requirements in relation to meeting location, minutes etc;
f) arrangements for communication between the parties of the Committee, including designated contact persons and contact details;
g) notification procedures in the event of an incident at the remediation or redevelopment works;
h) any agreement for participation in the development of any of the management plans or monitoring programs required under this consent;
i) mechanism for review of the Protocol with the addition of future members to the Rhodes Environmental Monitoring and Management Committee;
j) such other matters as the Applicant and the party with whom the Agreement is developed may agree.

The Applicant shall provide a copy of the Cumulative Remediation Impacts Protocol(s) to the Director-General and the Rhodes Community Consultative Committee as soon as practicable

Coordination of Infrastructure

Sewerage Infrastructure

8.3 As part of the Section 73 Certificate application process (refer to condition 5.33 of this consent), the Applicant shall consult with the Department, Sydney Water Corporation, and relevant remediation or redevelopment proponents on the Rhodes Peninsula to establish any requirements for the reconstruction, replacement or relocation of existing sewerage or water infrastructure on the site and other relevant land on the Rhodes Peninsula. Should reconstruction, replacement or relocation of existing infrastructure be required, the Applicant shall, in consultation with the above parties, develop a coordinated program for the reconstruction, replacement or relocation, including:

a) design requirements for the reconstructed, replaced or relocated infrastructure;
b) scheduling of reconstruction, replacement or relocation;
c) locational requirements for any new or relocated sewerage infrastructure;
d) operational requirements for reconstructed, replaced or relocated infrastructure (eg monitoring of boreholes); and
e) agreement in relation to funding the cost of reconstruction, replacement or relocation, particularly costs associated with any damage of infrastructure during remediation works

Coordination of Health Studies

8.4 Should NSW Health undertake the proposed dioxin serum survey described in Appendix 9 of the Commission's Report into the proposal, the Applicant shall provide assistance to NSW Health, to the satisfaction of the Director-General. In particular the Applicant shall provide NSW Health with:

a) monitoring data associated with the environmental performance of the respective remediation works; and
b) such other matters as the Applicant and NSW Health may agree.

9. ENVIRONMENTAL MANAGEMENT

Environmental Representative

9.1 Prior to the commencement of site preparation or construction works associated with the development, the Applicant shall nominate a suitably qualified and experienced Environmental Representative(s). The Applicant shall employ the Environmental Representative(s) on a full-time basis during site preparation, construction, commissioning, proof of performance trials, operation and decommissioning. The Environmental Representative shall be:

a) the primary contact point in relation to the environmental performance of the development;
b) the primary interface with the Rhodes Community Consultative Committee, and shall attend Committee meetings;
c) the primary interface with the Rhodes Environmental Management and Monitoring Committee, and shall attend Committee meetings;
d) responsible for all Management Plans and Monitoring Programs required under this consent;
e) responsible for considering and advising on matters specified in the conditions of this consent, and all other licences and approvals related to the environmental performance and impacts of the development;
f) responsible for the management of procedures and practices for receiving and responding to complaints in accordance with condition 7.3 of this consent;
g) required to facilitate an induction and training program for relevant persons involved with the operation of the development (refer to condition 9.4 of this consent); and
h) given the authority and independence to require reasonable and feasible steps be taken to avoid or minimise unintended or adverse environmental impacts,

and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse impact on the environment be likely to occur.

The Applicant shall notify the Director-General, the EPA, the Rhodes Community Consultative Committee, the Rhodes Environmental Monitoring and Management Committee and the Independent Environmental Expert of the name and contact details of the Environmental Representative upon appointment, and any changes to that appointment that may occur from time to time.

Standard Operating Procedures

9.2 The Applicant shall develop Standard Operating Procedures (SOPs) for all plant items associated with the development, including but not necessarily limited to procedures for the handling of contaminated soils, operation of major process units and operation of pollution control equipment. The Procedures shall identify critical operating parameters for each item of plant, identifying appropriate operating levels for each parameter and indicating how these parameters will be monitored. The Procedures shall be subject to review by the Independent Environmental Expert and certified by the Expert prior to progress to remediation operation. Subject to confidentiality, copies of the Procedures shall be made available for inspection by the Director-General, the EPA and the Rhodes Peninsula Community Consultative Committee on request.

9.3 Operation of the development shall be conducted strictly in accordance with the SOPs referred to under condition 9.2 of this consent at all times. SOPs shall be updated to reflect any changes to operations that may occur from time to time. The Applicant shall notify the Director-General, the EPA and the Rhodes Peninsula Community Consultative Committee of any update to the SOPs, indicating the scope and nature of the update. The Director-General may require that any update to an SOP be reviewed by the Independent Environmental Expert.

Environmental Training

9.4 Prior to the commencement of commissioning and proof of performance activities permitted in accordance with an approved Commissioning and Proof of Performance Program (refer to condition 9.12 of this consent), the Applicant shall develop and submit for the approval of the Director-General, an **Environmental Training Program**. The Program shall establish a framework in which relevant employees will be trained in environmental management and the operation of major process components, including pollution control equipment for development, where relevant. The Program shall include, but not necessarily be limited to:

a) identification of relevant employment positions associated with the development that have an operational or management role related to environmental performance;
b) details of appropriate training requirements for relevant employees;
c) a program for training relevant employees in operational and/ or management issues associated with environmental performance; and
d) a program to confirm and update environmental training and knowledge during employment of relevant persons.

Pre-Construction Environmental Management Plans

Contaminated Materials Management Protocol

9.5 [65]Prior to the commencement of any site preparation or construction works on the site, the Applicant shall prepare and submit for the approval of the EPA, a **Contaminated Materials Management Protocol** to detail procedures and process for the on-site management of excavated contaminated materials. The Plan shall include, but not necessarily be limited to:

[65] Incorporates an EPA General Term of Approval (O3.1)

a) provision for management of excavated contaminated materials during all stages of the development, including excavation, transport, pre-treatment and on-site storage;
b) details of measures to be implemented to minimise the loss of scheduled chemical waste constituents, dioxins and furans, and other chemicals of concern, to the environment by volatilisation, dust or leachate generation and other significant emissions pathways that may occur as a result of activities on the site;
c) management systems, procedures, structure and equipment to be applied to ensure best environmental practice for all contaminated materials disturbance and handling activities on the site, including, but not necessarily limited to:
    i) excavation and related activities;
    ii) transport of materials along clean and dirty haul roads;
    iii) storage and handling of excavated contaminated materials during pre-treatment processes;
    iv) storage and handling of excavated contaminated materials for direct use without treatment, and for treatment on-site;
    v) pre-treatment activities;
d) procedures for the classification of excavated contaminated materials.

Once approved, the Applicant shall implement the Contaminated Materials Management Protocol for the duration of the development.

Air Quality Management Plan

9.6 Prior to the commencement of any site preparation or construction works on the site, the Applicant shall update the **Air Quality Management Plan** included in the document referred to under condition 1.2e) of this consent, to reflect the outcomes of detailed design of the development, the requirements of the EPA and the results of consultation with NSW Health.
a) identification of all major sources of particulate and gaseous air pollutants that may be emitted from the development, being both point-source and diffuse emissions, including identification of the major components and quantities of these emissions;
b) monitoring for gaseous and particulate emissions from the development, in accordance with any requirements of the EPA;
c) pro-active and reactive management and response mechanisms for particulates, odour and gaseous emissions, with specific reference to measures to be implement and actions to be taken to minimise and prevent potential elevated air quality impacts on surrounding land uses as a consequence of meteorological conditions, upsets within the development, or the mode of operation of the development at any time;
d) procedures and processes for monitoring ambient air quality impacts, including, but not necessarily limited to:
    i) high volume samplers and/ or other appropriate monitoring method, as may be established in consultation with NSW Health and the EPA, at four site boundaries to determine concentrations of particulates, semi-volatile organic compounds, volatile organic compounds, volatile organic compounds and dioxins;
    ii) dust deposition gauges at four site boundaries;
    iii) olfactory observation at the site boundaries and in residential areas surrounding the site by personnel specifically trained for odour level determination, and/ or the use of PID;
    iv) sampling pumps fitted with reactive tubes targeted to respond to volatile organic compounds, including chlorinated compounds;
    v) off-site dust monitoring, consistent with the conditions of this consent, and to meet the requirements of the EPA
e) provision for regular review of air quality monitoring data, with comparison of monitoring data with that assumed and predicted in the documents listed

under condition 1.2 of this consent, including verification of air quality modelling and predictions, as may be relevant;

f) details of measures to be implement to address any situation in which monitored air quality impacts exceed those assumed in the document listed under condition 1.2 of this consent;

g) procedures for the identification of situations in which the development may contribute to an ambient PM_{10} concentration (24-hour) of greater than 50 μgm^{-3} at any off-site residential receptor, with details of measures to be implemented (including alteration or cessation of works, as may be relevant) to prevent or minimise exceedance of this criterion, in so far as the exceedance may relate to activities associated with the development;

h) specific complaints management procedures in the event that air quality monitoring indicates elevated impacts off-site;

i) procedures for the minimisation of gaseous and particulate emissions from the development;

j) protocols for regular maintenance of process equipment to minimise the potential for leaks and fugitive emissions; and

k) a contingency plan should an incident, process upset or other initiating factor lead to elevated air quality impacts, whether above normal operating conditions or environmental performance goals/ limits.

Once updated, the Applicant shall provide a copy of the Plan to the Director-General, and shall implement the Plan to the satisfaction of the Director-General for the duration of the development.

Water Management Plan

9.7 [66]Prior to the commencement of any site preparation or construction works on the site, the Applicant shall prepare and submit for the approval of the EPA, a **Water Management Plan** to outline measures that will be employed to manage water and water on the site, to minimise soil erosion and the discharge of sediments and other pollutants to lands and/ or waters throughout the life of the development. The Plan shall be based on best environmental practice and shall address the requirements of the Department, the Waterways Authority and SWC. The Plan shall include, but not necessarily be limited to:

b) consideration of all reasonable and feasible options to avoid discharge to ground and/or ambient waters including methods to minimise the volume of contaminated water and effluent generated, recycling and reusing water and effluent (eg. covering excavated material and stockpiles awaiting treatment, diversion of 'clean' water away from contaminated areas, etc);

c) identification of clean and dirty water areas on site maps for different stages of the development;

d) identification of criteria for nomination of areas as clean or dirty;

e) details of water management measures to be implemented for clean and dirty waters;

f) calculations for a water balance for all waters generated on the site including potential volumes of groundwater, stormwater and process water for treatment on-site or off-site, proposed discharges, recycling or reuse;

g) details of the remedial actions to be taken by the Applicant and site operators in response to an exceedance of concentration limits or other performance criteria for the on-site or ambient water management controls, including:

   i) procedures and contingency actions associated with the installation, operation and removal of the coffer dams and silt curtains;

   ii) use of additional silt curtains as a contingency measure;

   iii) contingency actions for flood, heavy rainfall and storm-surges into remediation areas or damage to silt curtains;

   iv) contingency actions for failure of any sediment controls;

[66] Incorporates EPA General Terms of Approval (O7.1 and O7.6)

h) characterisation of wastewater qualities and quantities for reuse on-site shall be characterised and specification of irrigation management practices specified;
i) specification of wastewater reuse areas shall be specified on site maps for different stages of the development;
j) specific details shall be provided in relation to the times, locations, volumes and qualities of the water to be irrigated, including how the quality of water to be used for irrigation will be assessed;
k) details of contaminated wastewater detention basins(s), including sizing based on a design rainfall event nominated by the Applicant and agreed by the EPA; and
l) procedures for reviewing and updating of the Water Management Plan as works progress.

Once approved, the Applicant shall implement the Water Management Plan for the duration of the development.

Bay Remediation Management Protocol

9.7A Prior to commencement of bay remediation works, the Applicant shall prepare and submit for the approval of the DEC and the Director-General, a **Bay Remediation Management Protocol** to detail how excavation works and associated activities within Homebush Bay will be carried out and managed in practice. The Plan shall address the requirements of the DEC and NSW Maritime and shall include, but not necessarily limited to, the following:

a) monitoring points, frequencies, sample methods, operational trigger levels and responses, licence limits and contingency plans (refer to conditions 6.14A to 6.14D and 9.7B);
b) the number of movements of the excavator arm and impermeable 12x12 curtain necessary to complete each arc, the time to complete an arc and how the barge will be moved to each new position including what precautions are needed;
c) procedures for installation and removal of the piles required for the Works Encapsulation Barrier;
d) how the remediation area is separated into the three sections (southern, northern and central) and how the boundaries relate to the contamination;
e) locations and movement of turbidity monitors particularly in relation to the windows in the works encapsulation barrier and outer perimeter barrier, the two reference sites and the excavator;
f) procedures for the removal of fish which may become trapped inside the sediment barrier containment system and the release of these fish back into the Bay;
g) procedures and systems (eg. signage, watercraft speed limits, bay access restrictions, minimum distances, etc) to ensure that watercraft of the bay do not impact on the barrier containment system and remediation activities;
h) procedures and systems for the regular inspection and maintenance of the barrier containment system;
i) procedures for reviewing and updating the Protocol as works in the Bay progress. The Protocol, including the monitoring program, operational triggers, licence limits and contingency measures, shall be reviewed by the Applicant following the assessment of monitoring results from the trial of the sediment containment system (refer to condition 6.14E) and the commissioning-stage monitoring (refer to condition 6.14A).

Once approved, the Applicant shall implement the Protocol, or approved revisions of the Protocol, for the duration of the Bay remediation works. The responses to operational trigger levels and licence limit exceedances shall be approved by the DEC.

9.7B As part of the Bay Remediation Management Protocol required under condition 9.7A of this consent, the Applicant shall prepare and implement a **Bay Contingency Protocol** for use in response to exceedances of operational monitoring triggers and licence limits. Contingency approaches that shall be considered in development the Protocol shall include, but not necessarily limited to:

a) use of flocculants;
b) use of a second works encapsulation barrier;
c) use of a second works encapsulation barrier plus use of flocculants;
d) specified short timeframe to complete each cell;
e) land based excavation of shallow areas and stop work at low tides – already suggested depending on monitoring results;
f) pumping from the excavation working area barrier to land to create a net inflow of water to the excavation working area barrier during excavation;
g) reporting exceedances of operational trigger values and licence limits to the DEC, including actions taken and results of action taken upon exceedances;
h) stop work; and
i) depending on the results of the trail of the containment system (refer to condition 6.14E), contingencies shall be developed for unacceptable results from the trial including the use of alternative containment systems such as sheet piling.

Erosion and Sedimentation Protocol

9.8 [67]Prior to the commencement of site preparation or construction works, the Applicant shall develop and implement an **Erosion and Sedimentation Management Protocol** to ensure that all erosion and sediment controls associated with the development, including stormwater detention basin sizing, are consistent with the requirements for longer term developments as outlined in *Managing Urban Stormwater: Soils and Construction 1998,* available from the Department of Housing. The Plan shall address the requirements of the Department, the EPA and the Waterways Authority and shall include, but not necessarily be limited to:

a) demonstration of best practice methods to be applied for the on-site control of run-off, sediments and other pollutants;
b) identification of management responses to activities that could cause soil erosion or result in the discharge of sediments and/or other pollutants from the site;
c) specification of performance criteria for erosion, sediment, and pollution control including water sediment basin locations and discharge points (eg. parameters, testing frequency, duration and location and test methods);
d) details of steps to be implemented to minimise soil erosion and the discharge of sediments and/or other pollutants from the site;
e) actions and measures to be implemented to control sediments, and how they will be monitored during the works, clearly indicating who will conduct the monitoring, how the results of this monitoring will be recorded; and, if any non-compliance is detected, what corrective action will be taken;
f) details of water levels in the detention basin(s) at which point discharges will cease (i.e. to prevent the discharge of sediment mobilised by the discharge event);
g) procedures for the removal and management of any contaminated water or sediment detected in the detention basin(s); and
h) triggers for commencing monitoring in the detention basin(s) after rainfall events, including, but not limited to, defining a rainfall event for monitoring purposes (size and duration of rainfall event), the time period before monitoring commences after rainfall and what monitoring will occur during a series of rainfall events or in response to a long rainfall event.

[67] Incorporates Waterways Authority General Terms of Approval (5 and 6) and an EPA General Term of Approval (O7.3)

Waste Management Plan

9.9 [68]Prior to the commencement of any works on the site the subject of this consent, the Applicant shall prepare a **Waste Management Plan** to outline measures to minimise the production and impact of wastes handled, treated and produced at the development. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:

a) a list of all liquid and non-liquid wastes that may be generated at the site including, but not necessarily limited to:
   i) material that has undergone processing by the DHTD plant but requires off-site disposal;
   ii) materials that cannot be treated by the DHTD plant due to either its size and/ or physical or chemical nature;
   iii) building or demolition materials including those generated from the demolition of the seawall or other on-site structures;
   iv) spent activated carbon;
   v) baghouse dusts;
   vi) liquid waste treatment plant residues and sludges;
   vii) any other waste generated by the development;
b) procedures for the classification or the assessment (including sampling and testing and quality assurance and quality control protocols) and classification of all identified wastes in accordance with the *Protection of the Environment Operations Act 1997* and the EPA's Environmental Guidelines: *Assessment, Classification and Management of Liquid and Non-Liquid Wastes* (Waste Guidelines) as in force as at 1 July 1999;
c) procedures for handling, storage, tracking and transport of all wastes, as relevant;
d) procedures for the disposal of all wastes, ensuring that all wastes are disposed of in accordance with their respective classifications at a facility that can lawfully receive the wastes;
e) designation of waste storage areas, including stockpiles and bins, and designation of areas for segregation and storage of recyclable materials;
f) contingency plans for handling of any wastes that cannot be adequately handled/ treated on-site;
g) procedures for verifying that any material brought to the site for use as fill is equivalent to virgin excavated natural material (VENM);
h) procedures for identification and management of wastes where the contaminants of concern are not currently specified in the EPA's Environmental Guidelines: *Assessment, Classification and Management of Liquid and Non-Liquid Wastes* and classification criteria (contaminant limit values) must be obtained from the EPA; and
i) procedures for review and update of the Waste Management Plan.

The Plan shall be implemented for the duration of the development, to the satisfaction of the Director-General.

Site Establishment and Construction Noise Management Protocol

9.10 [69]Prior to the commencement of any site preparation or construction works on the site, the Applicant shall prepare and submit for the approval of the EPA, a **Site Establishment and Construction Noise Management Protocol** to detail measures to mitigate and manage noise during site establishment and construction works. The Protocol shall include, but not necessarily be limited to:

a) procedures to ensure that all reasonable noise mitigation measures are applied to site establishment and construction works;

[68] Includes an EPA General Term of Approval (O4.4)
[69] Incorporates an EPA General Term of Approval (O12.1)

b) site establishment and construction noise objectives for each relevant receiver commensurate with the noise limits and noise goals specified under this consent;
c) identification of the associated noise sources and activities that will be carried out during site establishment and construction;
d) assessment of site establishment and construction noise impacts against the noise limits and noise goals at all relevant receivers;
e) details of overall management methods and procedures that will be implemented to control noise from during site establishment and construction;
f) a pro-active and reactive strategy for dealing with complaints, with particular regard to verbal and written responses;
g) noise monitoring, reporting and response procedures;
h) internal compliance audits of all plant and equipment;
i) site establishment/construction timetabling to minimise noise impacts;
j) procedures for notifying residents of construction activities likely to affect their noise amenity; and
k) arrangements established with the Rhodes Environmental Monitoring and Management Committee in relation to noise.

Acid Sulfate Soil Management Protocol

9.11 [70]Prior to the commencement of any site preparation or construction works on the site, but only if potential or actual acid sulfate soils are identified on the site (refer to condition 5.48 of this consent), the Applicant shall prepare and submit for the approval of the EPA and the Waterways Authority, an **Acid Sulfate Soil Management Protocol**. The Protocol shall detail measures to be implemented in relation to the management and handling of any potential or actual acid sulfate soils on the site and shall be prepared in accordance with guidance provided in *Acid Sulfate Soil Manual* (Acid Sulfate Soil Management Advisory Committee, 1998).

Pre-Commissioning Environmental Management Plans

Commissioning and Proof of Performance Program

9.12 The Applicant shall prepare and implement a **Commissioning and Proof of Performance Program** to detail an environmental management framework, practices and procedures to be followed during the commissioning of all treatment technologies and contaminated soil handling and storage components of the development (including the soil drying enclosure and DHTD plant) and to demonstrate that the remediation technology is capable of meeting environmental criteria within a demonstrating operating range(s), prior to progression to full operation. The Program shall address the requirements of the EPA and shall include, but not necessarily be limited to:

Commissioning (Trials with None/Clean Soils)

a) operational range(s) for relevant plant and equipment, including temperatures, pressures, flowrates etc;
b) a schedule and procedures for testing all major process components, including all pollution control equipment, both in the absence of any soil load, and with the staged introduction of uncontaminated soils, with rational and justification for staging/ composition of the schedule and procedures;
c) monitoring requirements and verification mechanisms to ensure compliance with operating design parameters for the remediation technology, including pollution control equipment, and compliance with relevant environmental and safety criteria;
d) provision for the successful completion of a 24 hour clean soil shakedown without significant interruption to demonstrate that the DHTD is mechanically sound in accordance with best practice requirements;

[70] Incorporates a Waterways Authority General Term of Approval (8) and EPA General Terms of Approval (O13.2 and O13.3)

e) provision for review and certification of environmental and safety performance by the Independent Environmental Expert;

Proof of Performance (Demonstration of Contaminated Soils Performance)

a) a framework for the collection of information equivalent to that required by *National Protocol – Approval/ Licensing of Trials of Technologies for the Treatment/ Disposal of Schedule X Wastes*;

b) a framework for the collection of information to demonstrate that the remediation technology is capable of meeting:
   i) performance criteria outlined in the documents listed under condition 1.2 of this consent;
   ii) the technology assessment submitted in accordance with condition 1.9 of this consent;
   iii) relevant criteria specified in: *OCP National Management Plan; Chemicals Control Order in Relation to Dioxin Contaminated Wastes 1986; Scheduled Chemical Wastes Chemical Control Order 2004; Chemical Control Order in Relation to Materials and Wastes Containing Polychlorinated Biphenyl 1997* or, to the extent that it is impracticable to comply with the foregoing, best practice treatment levels (refer to condition 5.2 of this consent);

c) a testing regime and procedures for fully characterising contaminated feed materials, based on the contaminant constituents, contaminant concentrations and other physico-chemical characteristics, prior to processing within the development;

d) provision for a minimum of three full runs on the most difficult/contaminated feed having regard to contaminant constituents, contaminant concentrations and the range of soil matrices;

e) a schedule and procedures for testing all major process components, including all pollution control equipment with rational and justification for staging/ composition of the schedule and procedures;

f) monitoring requirements and verification mechanisms to ensure compliance with operating design parameters for the remediation technology, including pollution control equipment, and compliance with relevant environmental and safety criteria, with rational and justification for staging/ composition of the schedule and procedures;

g) emissions testing consistent with the operational monitoring requirements specified in this consent and the Environment Protection Licence for the development;

h) mechanisms for review stages, changes in operational modes, or changes in equipment to address non-compliances with any design specifications, treatment standards or limits in relation to environmental or safety performance;

i) provision for review and certification of environmental and safety performance by the Independent Environmental Expert;

Treatment Trials for Spent Activated Carbon Waste

a) a schedule and procedures for treatment trial(s) and/ or provision of an equivalent level of information through peer reviewed scientific literature from a credible source, to demonstrate (with supporting engineering and laboratory test data) that the contaminant concentration in spent activated carbon waste that may be generated on the site can be adequately and safely reduced by treatment through the DHTD plant to levels required by this consent and the Environment Protection Licence for the development, for reuse of materials on-site;

b) if undertaken, the treatment trials referred to under a) above shall include, but not necessarily be limited to:
   i) a detailed work program/ plan for assessment and review at least one month prior to the commencement of trials;
   ii) provision for the supervision of all trials by a suitably qualified person(s), and the carrying out of the trials in a fit and proper manner;

iii) details of trial apparatus, such as operational plant, pilot scale plant or benchtop laboratory scale (preferentially in that order), as may be agreed by the EPA;
iv) details of trial conditions representative of the combination of the expected worst case operating conditions and the type treatment technology;
v) subject to environmental, safety and operational constraints, the trial shall include treatment of spent activated carbon waste blended with carbon-free media (ie silicious sand);
vi) procedures for testing spent activated carbon waste for all contaminants of concern, before blending with soil and treatment;
viii) provision for testing spent activated carbon waste independently/ separately from soil (ie separation of treated soil and spent activated carbon before testing);
ix) provision for the submission of a report to the EPA and the Director-General, within one month of the completion of trials on spent activated carbon waste, including but not necessarily limited to:
- details of the treatment trial methodology used, conditions and rationale;
- details of operating conditions eg scale of trial, materials used, size of batches etc;
- trial results together with a discussion and interpretation of the results;
- comparison of treatment trial results against the treatment outcomes expected of the DHTD plant on other matrix types (ie excavated contaminated material in the absence of spent activated carbon waste);
- justification that the treatment trial was adequately representative of the expected treatment processes and conditions on the site;
- a review of scientific references and published research applicable to the relevant treatment processes and conditions, to support the conclusions of the treatment trial;

x) sufficient information for the Director-General and the EPA to establish whether approval for progression to full-scale operation of the treatment processes on the site, having consideration of whether:
- information from the trial demonstrates that the treatment of spent activated carbon waste from all expected sources through the DHTD plant would be successful;
- information from the trial demonstrates that the treatment of spent activated carbon waste as a percentage blend within the proof of performance trials was successful;

The Plan shall be submitted for the approval of the Director-General and the EPA, accompanied by a review of the Plan by the Independent Environmental Expert, prior to the commencement of commissioning. The Applicant shall make the Plan available to the public for inspection, on request.

9.13 [71]Prior to the commencement of excavation or remediation operation, the Applicant shall prepare and submit for the approval of the Director-General and the EPA, an **Operation Noise Management Protocol** to detail measures to mitigate and manage noise during commissioning, proof of performance trials and operation of the development. The Protocol shall include, but not necessarily be limited to:
a) as primary objectives:
i) attainment of the noise limits and noise goals specified under this consent at all times, or;

[71] Incorporates an EPA General Term of Approval (O12.2)

ii) where noise limits and noise goals cannot be met, to achieve best practice noise control, in terms of noise level and duration of noise emissions at affected receivers at all times; and
iii) where the use of best practice noise control cannot substantially achieve the noise limits or noise goals (ie exceedances greater than 2dB(A)), that agreement(s) with affected stakeholders be negotiated (refer to Chapter 8 of the EPA's *Industrial Noise Policy*);

a) procedures to ensure that all reasonable and feasible noise mitigation measures are applied during commissioning, proof of performance and operation of the development;
b) procedures to generate suitable documentation for the EPA to audit, that demonstrates that the noise limits and noise goals specified under this consent, or best practice noise control operations, are being met;
c) regular input/ feedback mechanisms to improve the Protocol, where relevant, so that best practice noise control operation is met continually during the life of the development;
d) development of an holistic, coordinated approach to any noise mitigation and management measures that may be developed between the Applicant and other noise generating works and noise-sensitive receptors on surrounding land, with the aim of achieving the best overall outcome in terms of received noise at any noise-sensitive receptor (ie the attainment of best practice noise control on the site may be enhanced by coordination with other works and receptors to produce a superior noise impact outcome);
e) identification of all relevant receivers and the applicable criteria at those receivers commensurate with the noise limits and noise goals specified under this consent;
f) identification of activities that will be carried out in relation to the development and the associated noise sources;
g) assessment of site remediation noise impacts at the relevant receivers against the noise limits and noise goals specified under this consent;
h) details of all management methods and procedures that will be implemented to control individual and overall noise emissions from the site during excavation operation and remediation operation;
i) development of reactive and pro-active strategies for dealing promptly with any noise complaints, including documentation of a fast response (eg within one hour), the completed action on a complaint and feedback from the complainant (eg within 24 hours). The strategies shall also:
    i) provide for a 24-hour staffed response telephone line, with the telephone number prominently displayed at the Walker Street frontage of the site;
    ii) give authority for the person responding to complaints to take direct action to resolve the complaint, such as shutting down equipment or permitting urgent repairs and expenditure to address any significant issue;
    iii) provide for summary reporting to the EPA of complaints and key issues;
    iv) include an internal management mechanism to identify emerging deficiencies with the noise management of the operation or impacts above the noise goals, and documentation of the Applicant's response, which shall be directed at improving the overall Protocol as a result of the issues reported;
j) noise monitoring and reporting procedures;
k) regular internal audits of compliance of all plant and equipment with the noise levels established in the Protocol for those specific items of plant and equipment (e.g. quarterly, subject to negotiation with EPA);
l) scheduling/timetabling of remediation work to minimise noise impacts;
m) procedures for notifying residents of forthcoming remediation activities likely to affect their noise amenity; and
n) arrangements established with the Rhodes Environmental Monitoring and Management Committee in relation to noise.

Once approved, the Applicant shall implement the Operation Remediation Noise Management Plan.

Pre- Operation Environmental Management Plans

9.14 [72]Prior to the commencement of operation of the development, the Applicant shall prepare and submit for the approval of the EPA, an **Operation Environmental Management Plan** detailing the works proposed in preparation of commercial treatment of contaminated materials within the development. The Protocol shall include, but not necessarily be limited to:

a) details of pre-treatment of contaminated material prior to processing, including the storage, handling and management of wastes and emissions resulting from pre-treatment;
b) determination of the operating range of the development in treating contaminated material based on the results of proof of performance trials;
c) details of the operating range of the development in treating contaminated materials, based on the results of initial proof of performance trials and any subsequent treatment trials;
d) details of the introduction of contaminated material (scheduled waste, dioxin and PCBs) into the treatment facility, having regard to:
    i) the range of matrices, which may have different handling and pre-treatment requirements;
    ii) the range of contaminant concentrations;
    iii) the potential for air emissions ;
e) rationale and justification for the testing and staging of the treatment process;
f) monitoring and verification tests to demonstrate compliance with all relevant criteria; and
g) emissions testing in accordance with the relevant conditions of this consent.

Once approved by the EPA, the Applicant shall implement the Plan for the duration of commercial treatment operations.

Pre-Decommissioning Environmental Management Plans

Decommissioning Environmental Management Plan

9.15 The Applicant shall prepare a **Decommissioning Environmental Management Plan** to detail an environmental management framework, practices and procedures to be followed during the decommissioning, deconstruction and rehabilitation of the development and the site. The Plan shall address the requirements of the EPA and shall include, but not necessarily be limited to:

a) procedures for treatment of residual waste products and plant/ equipment from the development;
b) a program to verify that all storage and processing areas of the development are appropriately decontaminated;
c) procedures for the deconstruction of the development, including a schedule for deconstruction activities; and
d) [73]a stormwater management scheme for the remediated site, consistent with the Stormwater Management Plan for the catchment, or in the absence of such a Plan, consistent with guidance in *Managing Urban Stormwater: Council Handbook*.

The Plan shall be submitted for the approval of the Director-General no later than six months prior to the conclusion of operation of the development, or within such period otherwise agreed by the Director-General. The Plan shall be implemented after the conclusion of operation of the remediation process. A copy of the Plan shall be made available for public inspection on request.

[72] Incorporates an EPA General Term of Approval (G3.2)
[73] Incorporates an EPA General Term of Approval (O7.10)

Revision of Environmental Management Plans

9.16 The Applicant shall revise all relevant management plans and documents required under this consent in order to incorporate and address, as required, the modifications to the development described in modification application MOD-115-9-2006-i. Management plans and documents to be revised shall include, but not necessarily limited to, the following:

a) relevant Standard Operating Procedures (condition 9.2);
b) Environmental Training Program (condition 9.4);
c) Contaminated Materials Management Protocol (condition 9.5);
d) Air Quality Management Plan (condition 9.6);
e) Water Management Plan (condition 9.7);
f) Erosion and Sediment Protocol (condition 9.8);
g) Waste Management Plan (condition 9.9);
h) Site Establishment and Construction Noise Management Protocol (condition 9.10);
i) Acid Sulfate Soil Management Protocol (condition 9.11);
j) Commissioning and Proof of Performance Program (condition 9.12);
k) Operation Noise Management Protocol (condition 9.13);
l) Operation Environmental Management Plan (condition 9.14); and
m) Decommissioning Environmental Management Plan (condition 9.15).

The revision of the Operation Noise Management Protocol shall be undertaken following consultation with local residents most likely effected by the development modification and shall incorporate the controls included in the design of the DHTD resulting from the investigations required under condition 5.57A. Revised Management Plans and documents shall be submitted for Director-General and/or DEC for approval in accordance with the requirements of the relevant condition, or as otherwise required by the Director-General.

10. ENVIRONMENTAL REPORTING

Incident Reporting

10.1 [74]The Applicant shall notify the EPA and the Director-General of any incident with actual or potential significant off-site impacts on people or the biophysical environment within 12 hours of becoming aware of the incident. The Applicant shall provide full written details of the incident to the EPA and the Director-General within seven days of the date on which the incident occurred. The Applicant shall provide a copy of the written report to the Rhodes Community Consultative Committee, and shall make a copy of the report available for public inspection, on request.

10.2 The Applicant shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this consent, reported in accordance with condition 10.1 of this consent, within such period as the Director-General may require.

Note: Condition 10.2 of this consent does not limit or preclude the EPA from requiring any action to address the cause or impact of any incident, in the context of the EPA's statutory role in relation to the development.

10.3 [75]Notwithstanding condition 10.1 of this consent, if the Applicant identifies, through monitoring or otherwise, environmental or safety performance of the development outside the environmental or safety limits specified in this consent or the Environment Protection Licence for the site, operation of the relevant components of the development shall cease immediately (subject to safe shut-down procedures). The Applicant shall notify the Director-General and the EPA of the cause of the

[74] Incorporates an EPA General Term of Approval (R1.2)
[75] Incorporates an EPA General Term of Approval (G3.4)

required shut-down and identify additional measures to be applied to address the cause of the shutdown. Operation of the development shall only recommence with written confirmation of the acceptability of additional measures and approval from the Director-General and the EPA.

Monthly Performance Reporting

10.4 [76]The Applicant shall, throughout the life of the development, prepare and submit to the Director-General and the EPA, a **Monthly Performance Report**. The Report shall review the performance of the development against the requirements of this consent and the Environment Protection Licence, and shall include:

a) all monitoring data collected for the development during the month, in accordance with this consent and the EPL;
b) a copy of the Complaints Register (refer to condition 7.3 of this consent) for the month and details of how theses complaints were addressed and resolved;
c) identification of any non-compliance with the conditions of this consent and the EPL; and
d) details of additional measures to be implemented to address any non-compliance with the conditions of this consent and the EPL;

The first report shall be submitted within one month of the commencement of operation, and every month thereafter, or as otherwise agreed by the Director-General. The Applicant shall provide copies of Monthly Performance Reports to the Rhodes Community Consultative Community, and to the public on request.

10.5 The Director-General may require the Applicant to address certain matters in relation to the environmental performance of the development, in response to review of each Monthly Performance Report, and any advice from the Independent Environmental Expert or the EPA. Any action required to be undertaken shall be completed within such period as the Director-General may require.

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[76] Incorporates an EPA General Terms of Approval (R1.1)

ATTACHMENT A – NOTES ON RHODES PENINSULA COORDINATION

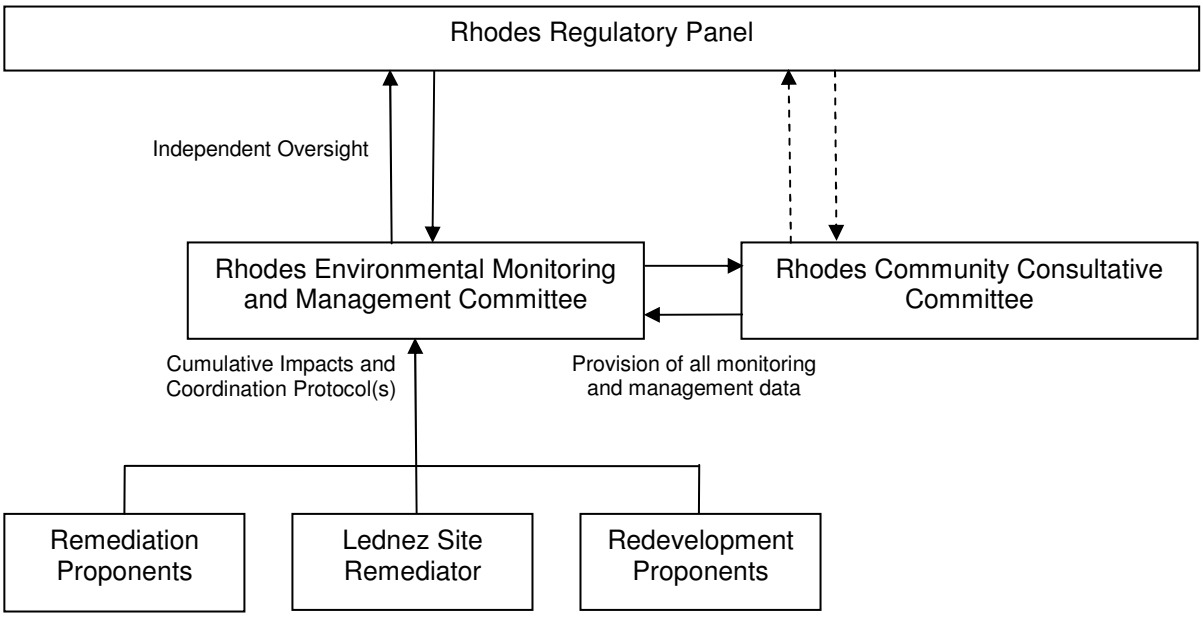
The Department of Infrastructure, Planning and Natural Resources (DIPNR) recognises the potential for cumulative impacts from concurrent remediation and redevelopment proposals on the Rhodes Peninsula, and the need to ensure that these impacts are addressed in a coordinated, cooperative manner. The Department intends, therefore, to establish a coordinated framework under which relevant proponents and affected members of the community (or their nominated representatives) can be involved in the coordinated management of environmental issues that may be generated by works on the Rhodes Peninsula. The interrelation of parties under this framework is provided as Figure 1, with a general description of each role summarised below.

Rhodes Regulatory Panel – the Panel is to be convened by the Department of Infrastructure, Planning and Natural Resources and would include representatives from relevant regulatory bodies, including integrated approval bodies (Environment Protection Authority, Waterways Authority and NSW Fisheries). The purpose of the Panel is to receive information in relation to the environmental and safety performance of remediation works, and relevant redevelopment works, as coordinated by the Rhodes Environmental Monitoring and Management Committee. In relation to information associated with remediation proposals, an independent person will provide additional comment/ advice to the Panel on technical remediation matters. The Panel will also receive comment from, and respond to, the Rhodes Community Consultative Committee, on an as needs basis. The Panel will provide a "whole of Government" response to matters of environmental and safety performance, but will not restrict the respective regulatory roles or powers of its constituent members.

Rhodes Environmental Monitoring and Management Committee – the Committee is to provide a coordinated approach to the environmental monitoring and management of remediation works and relevant redevelopment works on the Rhodes Peninsula. Proponents of the redevelopment works may be involved in the Committee, as required by the Director-General, given that redevelopment works have the potential to be impacted by remediation works, as well as contributing to cumulative impacts (such as dust, traffic and noise). The operation of the Committee would be governed by Cumulative Impacts and Coordination Protocol(s) between the parties. The Committee would be responsible for reporting to the Rhodes Regulatory Panel, and provided consolidated environmental management and monitoring data to the Rhodes Community Consultative Committee. Expenses of the Committee would be shared appropriately among its constituent members, as agreed in Cumulative Impacts and Coordination Protocol(s).

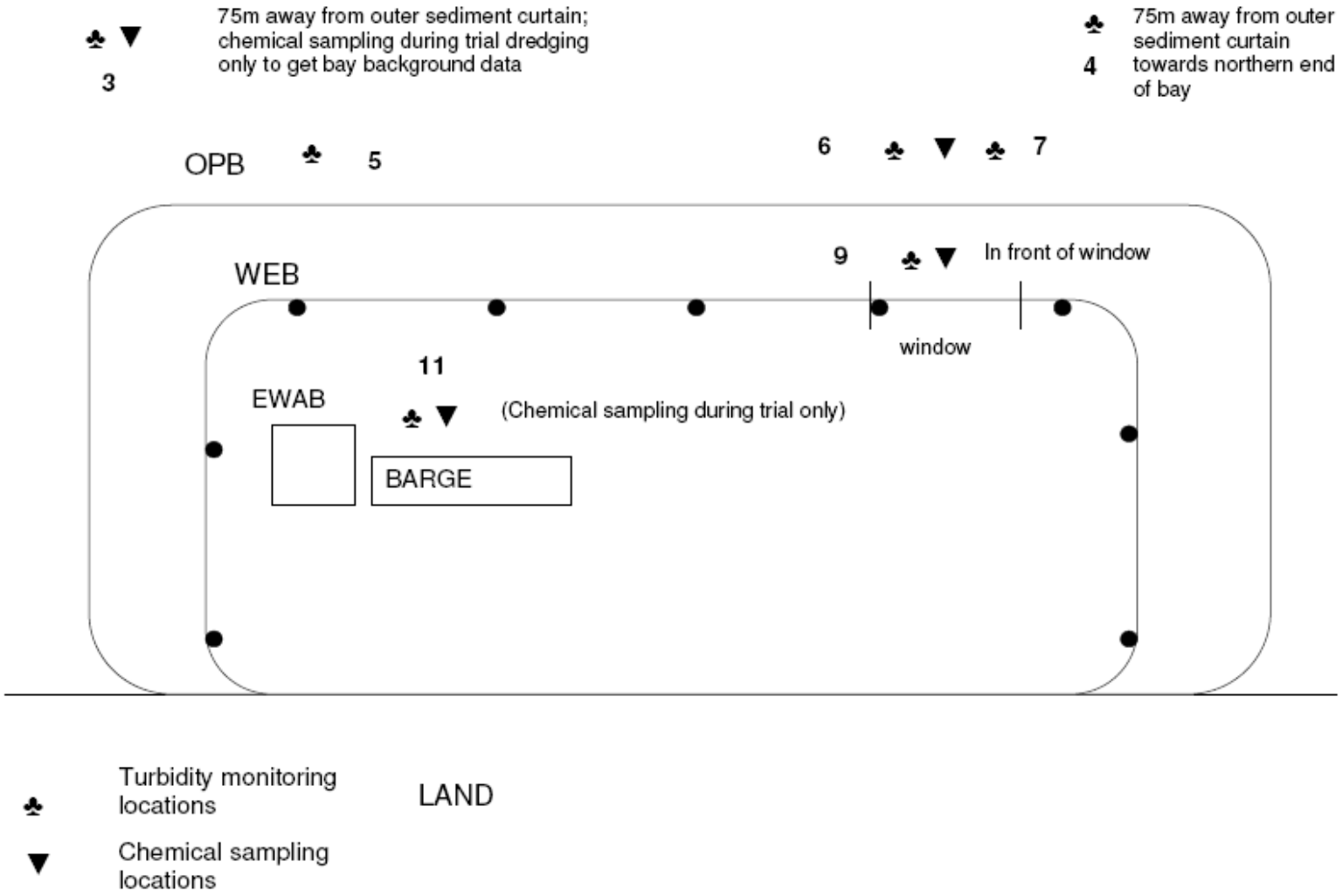
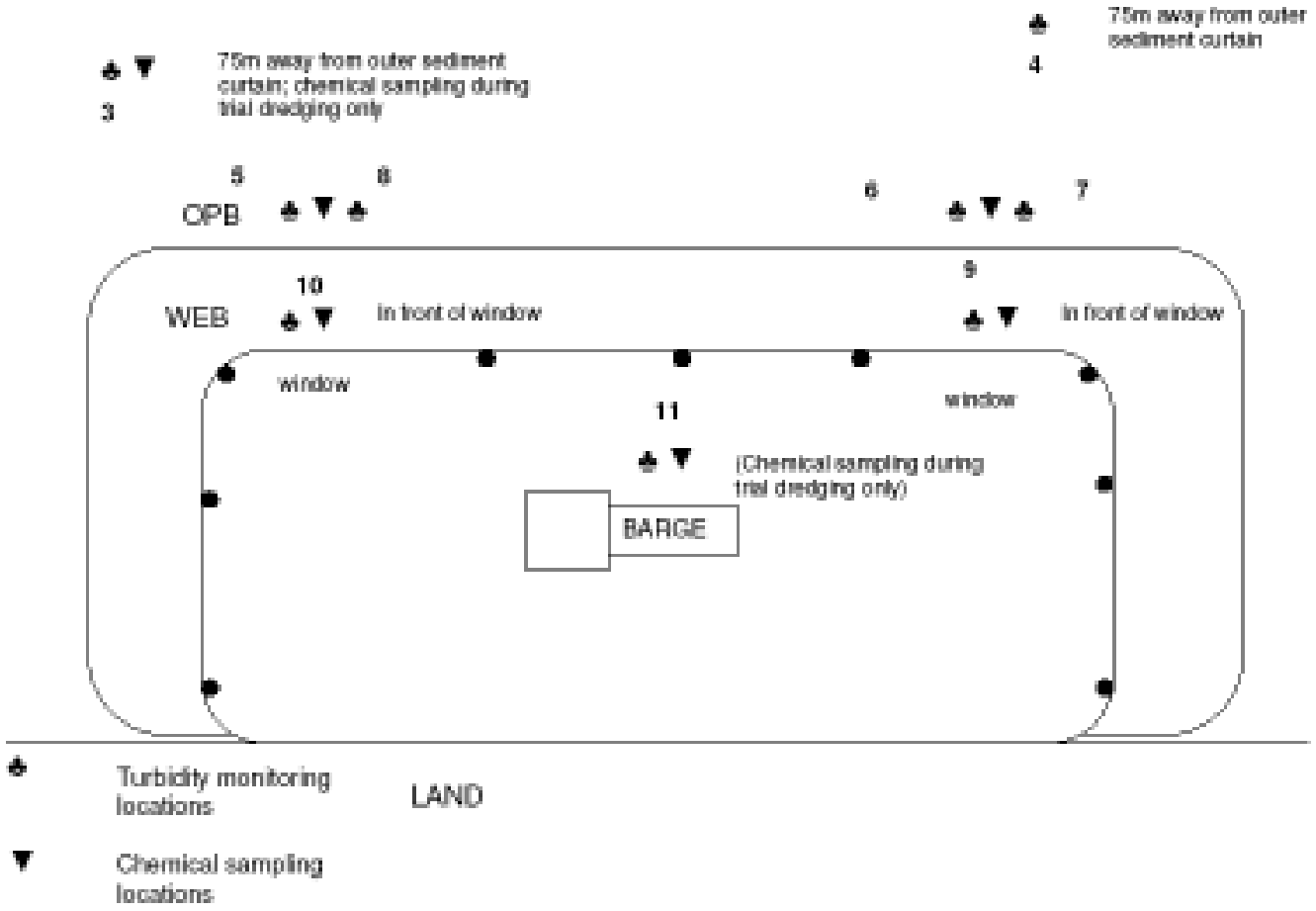
Rhodes Community Consultative Committee – the Committee is to provide a single point of reference for the local community in relation to remediation and redevelopment works on the Rhodes Peninsula. The Committee would receive all environmental and safety management and monitoring data, in a coordinated and consolidate manner, from the Rhodes Environmental Monitoring and Management Committee. The Committee would also provide feedback to the Rhodes Environmental Monitoring and Management Committee, highlighting community concerns, requests or queries.

Figure 1 – Rhodes Environmental Management Coordination Framework



ATTACHMENT B – FIGURES

Indicative bay sampling locations when one window section is open



Indicative bay sampling locations when two window sections are open