

Project Approval

Section 75J of the *Environmental Planning and Assessment Act 1979*

I, the Minister for Planning, approve the project referred to in Schedule 1, subject to the conditions in Schedule 2.

These conditions are required to:

- prevent, minimise, and/or offset adverse environmental impacts;
- set standards and performance measures for acceptable environmental performance;
- require regular monitoring and reporting; and
- provide for the ongoing environmental management of the project.

Frank Sartor MP
Minister for Planning

Sydney

2007

File No: 9036299

SCHEDULE 1

Application No:	06_0184
Proponent:	Pasminco Cockle Creek Smelter Pty Ltd (subject to Deed of Company Arrangement)
Approval Authority:	Minister for Planning
Land:	Lot 201 DP 805914, Lot 21 DP 253122, Lot 1 DP 523781 and Lot 23 DP 251322. 13a Main Road, Boolaroo, NSW 2284, Lake Macquarie Local Government Area
Project:	Remediation of Pasminco Cockle Creek Smelter Site
Major Project:	The project is declared a Major Project under section 75B(1)(a) of the <i>Environmental Planning and Assessment Act 1979</i> , because it is development of a kind described in clause 28(b) of Schedule 1 to <i>State Environmental Planning Policy (Major Projects) 2005</i>

KEY TO CONDITIONS

Error! Hyperlink reference not valid.	
Terms of Approval	5
Error! Hyperlink reference not valid.	
1995 Development Consent: Surrender and Continuing Provisions	5
Error! Hyperlink reference not valid.	
Statutory Requirements	7
Error! Hyperlink reference not valid.	
2. STAGING AND COORDINATION OF REMEDIATION WORKS	7
Error! Hyperlink reference not valid.	
3. PROJECT DESIGN AND PERFORMANCE	9
Error! Hyperlink reference not valid.	
Water Quality Impacts	12
Error! Hyperlink reference not valid.	
Noise Impacts	14
Error! Hyperlink reference not valid.	
5. ENVIRONMENTAL MONITORING AND AUDITING	15
Error! Hyperlink reference not valid.	
Surface Water and Groundwater Monitoring	15
Error! Hyperlink reference not valid.	
Environmental Auditing	17
Error! Hyperlink reference not valid.	
Provision of Electronic Information	17
Error! Hyperlink reference not valid.	
7. REMEDIATION ENVIRONMENTAL MANAGEMENT	18
Error! Hyperlink reference not valid.	
Interim Groundwater Remedial Plan	18
Error! Hyperlink reference not valid.	
8. COMPLETION OF REMEDIATION WORKS	21
Error! Hyperlink reference not valid.	
Environmental Management of Containment Cell(s)	21
Error! Hyperlink reference not valid.	
Munibung Hill Environmental Management Protocol	23
Error! Hyperlink reference not valid.	
Incident Reporting	24

SCHEDULE 2

Act, the	<i>Environmental Planning and Assessment Act 1979</i>
Conditions of Approval	The Minister's conditions of approval for the project.
Containment Cell(s)	Component of the remediation project involving an engineered on-site cell(s) structure designed to contain contaminated material in accordance with the document <i>Pasminco Cockle Creek Smelter Site Conceptual Containment Cell Design and Management Plan</i> prepared by Maunsell and dated September 2005 or as may be modified by detailed design. In this approval, the definition of the containment cell also includes environmental controls such as capping, drainage system, groundwater management system, effluent treatment plant and the containment cell's storage dam.
Council	Lake Macquarie City Council
DEC	Department of Environment and Conservation
Department, the	Department of Planning
Director-General, the	Director-General of the Department of Planning (or delegate).
Director-General's Approval	<p>A written approval from the Director-General (or delegate).</p> <p>Where the Director-General's Approval is required under a condition the Director-General will endeavour to provide a response within one month of receiving an approval request. The Director-General may ask for additional information if the approval request is considered incomplete. When further information is requested the time taken for the Proponent to respond in writing will be added to the one month period.</p> <p>Note: The DEC has advised that where its approval is required under a condition, the DEC will endeavour, as far as possible, to provide a response within one month of receiving the approval request. Similarly, the DEC advised that when further information has been requested the time taken for the Proponent to respond in writing will be added to the one month period.</p>
Dust	any solid material that may become suspended in air or deposited
EA	<i>Environmental Assessment Report Pasminco Cockle Creek Smelter Site Remediation Project</i> , prepared by Fitzwalter Group Pty Limited dated August 2006
EPA	Environment Protection Authority as part of the Department of Environment and Conservation
EPL	Environment Protection Licence issued under the <i>Protection of the Environment Operations Act 1997</i>
HDPE	High density polyethylene
Minister, the	Minister for Planning
Project, the	The remediation of the PCCS lands and associated works the subject of Major Projects Application 06_0184
Proponent	Pasminco Cockle Creek Smelter Pty Ltd (subject to Deed of Company Arrangement)
Remediation Order, the	Remediation Order Number 23008 issued to Pasminco Cockle Creek Smelter Pty Limited in July 2003 by the EPA under

	Section 21 of the <i>Contaminated Land Management Act 1997</i> , and as may be amended from time to time
Site	Land to which Major Projects Application 06_0184 applies.
Site Auditor	Independent expert accredited by the DEC as a Site Auditor under Part 4 of the <i>Contaminated Land Management Act 1997</i>
VENM	Virgin Excavated Natural Material

1. GENERAL

Terms of Approval

- 1.1 The Proponent shall carry out the project generally in accordance with:
- a) Major Projects Application 06_0184;
 - b) *Environmental Assessment Report Pasmenco Cockle Creek Smelter Site Remediation Project*, prepared by Fitzwalter Group Pty Limited dated August 2006, and appendices;
 - c) *Submissions Report* prepared by Fitzwalter Group Pty Limited and dated 21 November 2006; and
 - d) the conditions of this approval.
- 1.2 In the event of an inconsistency between:
- a) the conditions of this approval and any document listed from condition 1.1a) to 1.1c) inclusive, the conditions of this approval shall prevail to the extent of the inconsistency; and
 - b) any document listed from condition 1.1a) to 1.1c) inclusive, and any other document listed from condition 1.1a) to 1.1c) inclusive, the most recent document shall prevail to the extent of the inconsistency.

Limits of Approval

- 1.3 This project approval shall lapse five years after the date on which it is granted, unless the works the subject of this approval are physically commenced on or before that time.
- 1.4 The project shall be undertaken in a maximum period of five years from the date of commencement of the works the subject of this approval. If, however, justifiable delays occur in the remediation project, then the Proponent may apply to the Director-General for an extension to this deadline. This application shall be submitted to the Director-General as early as possible from the time the Proponent is aware of such delays. The application must outline the new timeframe, justify any delays, and describe measures that will be implemented to minimise environmental impacts and achieve compliance with this approval. After reviewing this application, the Director-General, in consultation with the DEC, may approve an extension to the above deadline, and may require the Proponent to carry out further investigations or works to mitigate impacts as considered necessary.

1995 Development Consent: Surrender and Continuing Provisions

Surrender of Consent

- 1.5 The Proponent shall, upon acceptance in writing by the DEC and the Director-General of the terms of the Lead Abatement Program identified in condition 1.6, surrender the Development Consent (DA No. 29/94) granted by the then Minister for Urban Affairs and Planning in November 1995 and modified in February 1999 and March 2005.

Continuation of Lead Abatement at Nominated Properties

- 1.6 The Proponent shall develop and implement a **Lead Abatement Program** at nominated properties (as identified in conditions 42, 43 and 44 and Figure 1 of the 1995 consent (DA No. 29/94)) to the satisfaction of the DEC for an agreed period of time during the remediation of the site, and shall include, but not necessarily be limited to:
- a) consideration of comments provided by the DEC, NSW Health, Council and the Department on the document titled "Lead Abatement Strategy Implementation Documentation" dated November 2006;
 - b) timeframes and detailed methods for the following general program components
 - i) consultation;
 - ii) soil analysis;
 - iii) development and undertaking of lead abatement measures;
 - iv) preparation of documentation for the property owners identifying the property status following the implementation of the program;
 - v) the management of the strategy;

- c) procedures and systems to manage and maintain information and records generated by the implementation of the program;
- d) application, on a voluntary basis, to properties with lead levels in soil above 300 ppm, or as otherwise agreed by the DEC;
- e) endorsement by technical advisers including, but not necessarily limited to, a Site Auditor and a lead specialist;
- f) a goal to commence the program by 1 March 2007, including a plan for the successful agreement of the program arrangements by all relevant parties and for program approval prior to 1 March 2007;
- g) definition of the role of the Environmental Health Centre (EHC) or an alternative method for fulfilling the role of the EHC should the EHC cease to exist; and
- h) a long term community education program and management plan, and means for funding this program/plan in order to assist residents in nominated properties in managing any residual risk associated with lead contamination

Remediation works on the site shall not commence until the terms of the program has been accepted in writing by the DEC and the Director-General. Implementation of the Program may be staged with the agreement of the DEC and the Director-General.

- 1.7 To avoid any doubt, nothing in this approval permits works to be undertaken on any land in the pursuance of the Lead Abatement Program referred to under condition 1.6 if separate environmental and/ or planning approvals are required for works to be undertaken on that land and such approvals have not been granted. Nothing in this approval removes the need for the Proponent to obtain approval of the relevant landowner prior to commencing works in pursuance of the Program.

Continuation of Lead Slag Processing Jig

- 1.8 The lead slag processing jig shall continue to operate on the site, in accordance with the Land and Environment Court Order No. 50126 (of 2002 as amended), the Environment Protection Licence (5042) for the site, the Remediation Order applying to the site and the conditions of this approval, until no later than 31 December 2009.
- 1.9 All slag material to be processed by the jig, any open areas of the slag stockpile, roads and vehicle manoeuvring areas shall be maintained in a wet or damp condition at all times to suppress the generation of dust.
- 1.10 Lead concentrate generated by the slag jig shall be stored in a concrete-floored, bunded area and maintained in a wet or damp condition until loaded for transport off-site. Lead concentrate shall only be transported from the site in sealed, fully-enclosed transport trucks or rail wagons.
- 1.11 Operation of the slag jig shall not adversely affect the integrity of the containment and management of any slag stockpile on the site.
- 1.12 The Proponent shall operate the slag jig with a closed-circuit recycled water system. The slag jig, associated material conveyor and handling systems and access ramp to the material loading hopper shall be mounted on a durable concrete surface that is graded and drained to the closed-circuit recycled water system. The Proponent shall not permit any waste water generated by the slag jig to be discharged directly from the site, unless permitted by and in accordance with the Environment Protection Licence for the site.
- 1.13 The Proponent shall install and maintain measures to ensure that all surface water run-off from the northern area slag stockpiles is directed to stormwater detention dams.

Subdivision of Land

- 1.14 To avoid any doubt, the consent authority for any application for the subdivision of land within the site that has been remediated in accordance with this approval is the local council.

- 1.15 The Proponent shall provide such information as may be required by the subdivision consent authority with respect to the assessment of the subdivision of land within the site or with respect to the notation of the certificate(s) applying under section 149 of the *Environmental Planning and Assessment Act 1979*.
- 1.16 Land within the site that has been subdivided shall not be occupied (in accordance with the provisions of Section 109H of the EP&A Act) until remediation activities involving handling of contaminated materials in adjacent lots or in a buffer zone of at least 200 metres in the adjacent lot, whichever is the greatest, have been completed, unless otherwise agreed by the Director-General and the DEC.

Statutory Requirements

- 1.17 The Proponent shall ensure that all licences, permits and approvals are obtained and maintained as required throughout the life of the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licences, permits or approvals. The Proponent shall ensure that a copy of this approval and all relevant environmental approvals are available on the site at all times during the project.
- 1.18 The Proponent shall engage an independent Site Auditor accredited under Part 4 of the *Contaminated Land Management Act 1997* to provide advice throughout the remediation project and on completion of the project as required in this approval and as required by the DEC.

Compliance

- 1.19 The Proponent shall ensure that employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.
- 1.20 The Proponent shall be responsible for environmental impacts resulting from the actions of all persons on site, including contractors, sub-contractors and visitors.
- 1.21 The Proponent 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 approval, and general consistency with the documents listed under condition 1.1. 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 approval, within such time as the Director-General may agree.
- 1.22 The Proponent shall inform the Department and the DEC in writing as soon as practicable and within seven days of the Proponent becoming aware of any information or data indicating a material change in conditions at the site or in its surrounding environment which could adversely affect the prospects of successful investigation or remediation of the site, or result in harm to the environment.
- 1.23 The Proponent shall inform the Department and the DEC in writing as soon as practicable and within seven days of the Proponent becoming aware of any failure, either by the Proponent or any other person, to comply with any component or aspect of the proposal.

2. STAGING AND COORDINATION OF REMEDIATION WORKS

- 2.1 The Proponent shall undertake the project in a staged and orderly manner, subject to the following provisions:
- a) remediation and validation of the 11 separate development areas identified in the documentation referred to in condition 1.1, shall be carried out in an orderly sequence generally in accordance with the EA and supporting documents, or as modified by any approved detailed design carried out in accordance with conditions 2.2, 2.3, 3 and 7.3;

- b) construction of the containment cell(s) shall be staged in conjunction with the staged remediation of the site generally in accordance with the EA and supporting documents, or as modified by the conditions of this approval;
- c) excavation and/or earthworks involving contaminated material shall not occur simultaneously in more than three development areas identified in the EA (excluding the containment cell(s) development areas) unless approved by the Director-General; and
- d) demolition of buildings (not including concrete slabs and underground services) shall be completed prior to commencement of remediation.

Remediation Master Plan and Remedial Action Works Plans

2.2 Within six months of the date of this approval and prior to the commencement of any works on the site, or as otherwise agreed by the Director-General, the Proponent shall prepare and submit for the approval of the Director-General and the DEC a **Remediation Master Plan** detailing how remediation works will be staged and coordinated on the site. The Plan shall be generally consistent with the staging proposed and outlined in the documents referred to under condition 1.1 and shall include, but not necessarily be limited to, the following:

- a) the overall strategy for remediation of the site, including proposed staging, timing and coordination of the remediation works;
- b) a framework for the preparation, implementation and coordination of Remedial Action Works Plans for various stages and/ or areas of the site (refer to condition 2.3), with particular reference to how these plans will be co-ordinated to achieve an integrated remediation outcome for the whole site;
- c) the order or sequence of remediation of the various parts of the site, and estimated timeframes for each stage; and
- d) location of major environmental controls, infrastructure and other key design parameters of the remediation works, as relevant for each stage and/ or area of the site.

The Master Plan shall be reviewed and endorsed by the Site Auditor prior to submission to the Director-General and the DEC for approval.

2.3 The Proponent shall prepare and submit for the approval of the Director-General and the DEC, detailed **Remedial Action Works Plans** (RAWPs) specific to the relevant stages and/ or areas of the site to be remediated (including the area of the containment cell(s)). For each RAWP, the Proponent shall carry out the necessary investigations in order to develop robust remediation options to address the “significant risk of harm” and to ensure that each part of the site is suitable for the proposed end use prior to the identification of the preferred option. The RAWPs shall:

- a) address the “significant risk of harm” issues on the area to be remediated;
- b) be developed specifically for the proposed and approved end use of each part of the site to be remediated;
- c) include the remedial goals, a discussion on the extent of the remediation required and the remediation options;
- d) include a listing of all selected remedial criteria and the rationale for their selection;
- e) be consistent with the requirements of the Environment Protection Authority’s *Guidelines for Consultants Reporting on Contaminated Sites* (1997) as they relate to remedial action plans and validation reports;
- f) include a validation plan;
- g) include all reasonable measures to ensure that there is minimal recontamination from on-site remediation activities that would affect the proposed use of the already remediated areas of the site;
- h) include environmental management plans specific to the stage in accordance with conditions 7.3 and 7.4;
- i) include details of environmental performance measures and monitoring to be used for the evaluation of all remediation and monitoring works, and what contingencies will be taken to address any identified adverse environmental impacts; and

- j) include the requirements of relevant Site Audit Reports and Site Audit Statements issued to date by the Site Auditor for the site.

Each RAWP shall be reviewed and by the Site Auditor, who shall prepare a Site Audit Statement(s) and a Summary Site Audit Report(s) on the suitability of each RAWP to address the remediation objectives for the site, prior to submission of the RAWPs to the Director-General and the DEC for approval. Remedial works in a stage and/or area shall not commence until the RAWP specific to that area/stage has been approved by the Director-General and the DEC. Nothing in this approval precludes the combination of RAWPs and/ or the Remedial Master Plan into one or more documents.

3. PROJECT DESIGN AND PERFORMANCE

- 3.1 Unless otherwise modified through an approved Containment Cell Detailed Design and Construction Report required under condition 3.2, the containment cell(s) associated with the project shall be located and sized in accordance with the following general parameters:
 - a) the cell(s) shall be constructed within the boundaries of Lot 201 DP 805914 in a location consistent with Figure 3.1 of the EA and the recommendations made in the document *Pasminco Cockle Creek Smelter Site Conceptual Containment Cell Design and Management Plan* prepared by Maunsell and dated September 2005;
 - b) the cell(s) shall cover an area no larger than (and within) the footprint bounded by the white line on Figure 3.1 of the EA ;
 - c) unless otherwise agreed by the DEC, the cell(s) shall contain no more than 1, 200,000 m³ of waste material (excluding capping and encapsulation material) sourced only from the site and the nominated properties identified in condition 1.6; and
 - d) the cell(s) shall be shaped generally in accordance with the document *Visual Assessment of Proposed Cell Structure* prepared by Conybeare Morrison International and dated June 2005, with an upper height limit of the top surface (including capping) of RL 34 metres.
- 3.2 Prior to commencement of construction of the containment cell(s), or parts of it, that does not have material emplaced in it prior to the commencement of this approval, the Proponent shall prepare, submit and obtain approval from the DEC for the **Containment Cell Detailed Design and Construction Report** prepared in accordance with the recommendations made by the Site Auditor in the reports titled *Summary Site Audit Report Review of Stage 2 groundwater investigations Pasminco Cockle Creek Smelter Sites, Boolaroo NSW* dated 28 May 2006 and the *Site Audit Report Review of Site-Wide Remediation Action Plan Pasminco Cockle Creek Smelter Sites, 13a Main Road, Boolaroo NSW* (including attachment 2) dated 17 November 2005, or as otherwise recommended in writing by the Site Auditor. The Containment Cell Detailed Design and Construction Report shall address the recommendations made in the *Pasminco Cockle Creek Smelter Site Conceptual Containment Cell Design and Management Plan* prepared by Maunsell and dated September 2005, and shall include, but not necessarily be limited to, the following:
 - a) the cell(s) technical specifications including details such as final footprint, cell(s) size and containment volumes, capping materials, thickness and permeability details, source of capping material and transportation method, specifications for cut-off wall and up-gradient subsurface interception drain, specifications for subsurface down-gradient collection trench, and specifications for the leachate collection, conveyance system and dam storage;
 - b) design of the cell(s) drainage layer in accordance with the specifications detailed in benchmark technique 2 of *Environmental Guidelines: Solid Waste Landfills* (EPA, 1996), unless it can be demonstrated to the satisfaction of the DEC that a different design is equivalent or better in performance;
 - c) information on the existing and proposed effluent treatment plants including details such as plant capacity, treatment quality, maintenance and monitoring requirements, and timeframes for decommissioning of the existing plant and installation of the new plant;

- d) construction methodology, including construction quality assurance procedures, and timeframes;
- e) measures to ensure that the waste in the cell(s) is securely contained and that there is no migration of contaminants from the cell(s) that could pose a significant risk of harm to human health or the environment (eg. volatilisation to air or entering the surface or groundwater);
- f) information and/ or measures that demonstrate that the placement of the cell(s) over an inferred geological fault and other surfaces beneath the cell(s) will not result in contamination of the deep aquifer, to a level that could result in a significant risk of harm to the environment or humans on the site, or off the site;
- g) a comprehensive characterisation of materials that will be placed into the cell(s) (including asbestos), to determine that they will be compatible for long term storage, noting that different types of waste require different treatment/ management systems and treatment. This shall include a detailed assessment of the potential for chemical interaction, aggressivity and the potential risks associated with sulfurous/ sulfidic/ sulfur processes of materials that are proposed to go into the containment cell(s) (e.g. gas generation, fire and acid generation);
- h) measures to co-locate, to the extent practicable, materials of like classes;
- i) a revised fate and transport model for the major contaminants of concern, as agreed to by the site auditor, which are intended to be contained, having regard to the recommendations made by the Site Auditor in *Site Audit Report Review of Site Wide Remediation Action Plan, Pasmenco Cockle Creek Smelter Site 13a Main Road, Boolaroo, NSW* dated 17 November 2005, *Contaminated Sites: Draft Guidelines for the Assessment and Management of Groundwater Contamination* (DEC, December 2004) and *Murray Darling Basin Commission Groundwater Flow Modelling* (March 2000). Based on the revised fate and transport model, the containment cell(s) shall be designed as to take into account the occurrence of settlement characteristics as noted in condition 3.4 from possible underground mining activities.
- j) a waste tracking system to ensure that materials placed within the cell(s) can be easily located or relocated as required. The system shall include measures for documenting the classification, location, volumes and any treatment of the deposited waste,
- k) a strategy to manage any hot spots found during the remediation of the site, including but not limited to, separate phase hydrocarbons, drums and unexpected finds;
- l) a water balance on which to base the sizing of a containment cell(s)' storage dam to contain all leachate removed from the collection and conveyance system, polluted groundwater removed from the up-gradient and down-gradient collection trenches and surface run-off from which has come into contact with contaminated materials in the cell(s). The water balance shall be run using monthly time steps, taking into account the discharges for dust control and discharges via the existing and proposed effluent treatment plants. The dam shall be sized to contain the 90th percentile wet year in year 1 and then onwards average monthly rainfall without overflowing. The Proponent shall liaise with the DEC in the development of the water balance, to reach agreement on infiltration rates and other assumptions. Unless otherwise agreed in writing by the DEC, a freeboard shall be added to the dam to contain the 1 in 25 year ARI of 24-hour duration storm event; and
- m) assessment/ monitoring programs to ensure that the objectives of the containment cell(s) are achieved (Note: performance monitoring measures shall be incorporated into the on-going assessment of the performance of the cell(s)).

All models that are developed for the detailed design of the cell(s), including the model required under condition 3.2i), shall be reviewed for technical appropriateness by specialists in contamination migration processes.

- 3.3 Prior to submission to the DEC for approval, the Containment Cell Detailed Design and Construction Report, or consecutive parts of it, shall be reviewed by a Site Auditor who shall issue a Site Audit Statement(s) and a Site Audit Report (s) on the suitability of the proposed containment cell(s) and associated infrastructure to meet the remediation objectives for the site, taking into account the proposed land-use above the containment cell(s).

- 3.4 Prior to the commencement of construction of the containment cell(s), the Proponent shall arrange for the preparation and submission for the approval of the Mine Subsidence Board of final detailed design drawings for the containment cell(s), certified by a qualified structural or geotechnical engineer to the effect that the containment cell(s) has been designed so as not to be damaged by the following predicted levels of mine subsidence:
- maximum vertical subsidence of 200mm;
 - maximum ground strains of $\pm 2\text{mm/m}$; and
 - maximum tilt of 2 mm/m.
- 3.5 As-constructed drawings shall be prepared from field surveys which depict the basal elevation of the containment cell(s), slag stockpiles, the upper surface of the liners, pipe grades in the leachate collection and conveyance systems, geotextiles, engineered liners and each layer of the cap. Copies of these drawings shall be provided to the Director-General and the DEC.
- 3.6 Prior to placing any material in the containment cell(s), the Proponent shall seek and obtain approval from the DEC for each part of the containment cell(s), providing a report to confirm that the cell's infrastructure including the construction and lining of any dams, has been installed in accordance with the approved design and construction specifications. To obtain this approval, the Proponent shall submit a report(s) to the DEC and include the 'as constructed drawings', the construction quality control results and written advice from the person(s) overseeing the works to advise whether or not they were installed in accordance with the approved design and construction specifications. Documentation shall be provided to the DEC, for approval in writing by the DEC, within three months of constructing the up-gradient and down-gradient shallow aquifer works surrounding the containment cell(s), to confirm that these works were installed in accordance with the approved design and construction specifications.
- Note: The DEC has advised that it will endeavour, as far as possible, to provide the approval(s) required under this condition within two weeks of receiving the Proponent's approval request and the necessary and adequate information.
- 3.7 Sludge from the existing and proposed effluent treatment plants shall be disposed of in a containment cell(s) in accordance with an approved Containment Cell Detailed Design and Construction Report (refer to condition 3.2) and, after the containment cell(s) is capped shall be lawfully disposed of off-site.
- 3.8 Prior to placing any shipping container(s) into the containment cell(s), the Proponent shall demonstrate to the satisfaction of the DEC that the structural integrity of the shipping container(s) will not fail in future in a manner that would compromise the integrity of the containment cell(s).
- 3.9 The Proponent shall not reuse existing HDPE liner(s) covering stockpiles on the site without the prior approval of the DEC. In seeking the DEC's approval to reuse the HDPE liner(s), the Proponent shall provide evidence to the satisfaction of the DEC that the liner(s) has not been damaged by UV light and/or does not have holes in it.
- 3.10 The Proponent shall ensure that all materials placed in the containment cell(s) do not contain any free liquids as defined in the *Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Waste* (DEC, 1999).
- 3.11 All materials used in the cap of the containment cell(s) shall be VENM, unless otherwise approved by the DEC.

4. SPECIFIC ENVIRONMENTAL CONDITIONS

Water Quality Impacts

- 4.1 Except as may be expressively provided by an Environment Protection Licence for the project, the Proponent shall comply with section 120 of the *Protection of the Environment Operations Act 1997* which prohibits the pollution of waters.
- 4.2 The Proponent shall ensure that contaminated and potentially contaminated water is only used for dust suppression in areas of the site that are yet to be remediated and that drain to the contaminated water storage dams and/or the containment cell(s)' storage dam on site.

General Water Management Infrastructure Design and Performance

- 4.3 Prior to commencement of construction of the containment cell(s), the Proponent shall, unless otherwise approved by the DEC, ensure that a storage dam is in place to contain all:
- leachate removed from the collection and conveyance system for the cell(s);
 - polluted/ contaminated groundwater removed from the up-gradient and down-gradient collection trenches for the cell(s); and
 - surface run-off from which has come into contact with contaminated materials in the containment cell(s).

The dam, designed in accordance with the requirements of condition 3.2i), shall be lined with a minimum 1.5 millimetre-thick HDPE liner, or as otherwise approved by the DEC.

- 4.4 Unless otherwise approved by the DEC, the Proponent shall install a suitably-designed geotextile material:
- surrounding the drainage layer in the cap of the cell(s); and
 - over the entire surface of the leachate drainage layer of the cell(s).

Design and installation of the geotextile material shall be to the satisfaction of the DEC.

- 4.5 The Proponent shall operate the containment cell(s)' storage dam to maximise the dam's available storage capacity by optimising the use or treatment of water from the dam.
- 4.6 Unless otherwise approved by the DEC, the Proponent shall ensure that all contaminated water contained in the containment cell(s)' storage dam is only discharged in the following manner:
- via either the existing or proposed effluent treatment plant(s); or
 - through overflow of the dam only if rainfall on the site has exceeded 1093 millimetres in the preceding twelve-month period and the Proponent can demonstrate compliance with condition 4.5 to the satisfaction of the DEC.

Groundwater Management

- 4.7 The Proponent shall ensure that the up-gradient cut-off wall(s) and up-gradient collection trench(es) for the containment cell(s) are installed and operational within three months of the approval of the Containment Cell Detailed Design and Construction Report, or the relevant part(s) of that Report (refer to condition 3.2), unless otherwise agreed by the DEC. This condition applies to the shallow aquifer surrounding the containment cell.
- 4.8 Groundwater collected in the shallow up-gradient groundwater interception trench(es) shall be discharged directly to the containment cell(s)' storage dam or the effluent treatment plant, unless otherwise approved by the DEC.
- 4.9 The Proponent shall ensure that the down-gradient collection trench(es) for the containment cell(s) are installed and operational within three years of the approval of the Containment Cell Detailed Design and Construction Report, or the relevant part(s) of that Report refer to

condition 3.2), unless otherwise approved by the DEC. This condition applies to the shallow aquifer surrounding the containment cell.

- 4.10 Unless otherwise approved by the DEC, groundwater collected in the shallow down-gradient groundwater interception trench(es) shall be discharged directly to the containment cell(s)' storage dam or the effluent treatment plant.
- 4.11 Unless otherwise approved by the DEC, the elevation of shallow groundwater in the up-gradient and down-gradient collection trenches shall be maintained at levels approved by the DEC by a system of automatic pumping to the containment cell(s)' storage dam. The pump(s) shall be configured to cut out if the dam's freeboard capacity is exceeded. A high level visual alarm shall also be installed to indicate if the groundwater elevation is greater than the level approved by the DEC.

Leachate Management

- 4.12 The Proponent shall ensure that leachate extracted from the leachate collection and conveyance systems in the containment cell(s) is not discharged into the shallow groundwater collection trenches, and is instead discharged into the containment cell(s)' storage dam or the effluent treatment plant, unless otherwise approved by the DEC.
- 4.13 Unless otherwise approved by the DEC, the elevation of leachate on the base of cell(s) shall be maintained at levels approved by the DEC by a system of automatic pumping to the containment cell(s)' storage dam. The pump(s) shall be configured to cut out if the dam's freeboard capacity is exceeded. A high level visual alarm shall also be installed to indicate if the leachate level in the cell(s) is greater than the level approved by the DEC.

Surface water and Stormwater Management

- 4.14 Unless otherwise approved by the DEC, the Proponent shall ensure that contaminated stormwater contained on the site for up to average monthly rainfall conditions is only discharged from the premises via either the existing or proposed effluent treatment plant.
- 4.15 Where practicable, any new and/or enlarged stormwater containment dam (excluding the containment cell's storage dam) that collects contaminated water from the site shall be lined with a minimum 1.5 millimetre nominal thickness HDPE liner prior to commencement of its use, unless otherwise approved by the DEC.
- 4.16 Unless otherwise approved by the DEC, all surface water and stormwater storage dams shall have sediment basin markers installed to identify the upper level of contaminated sediment storage to assist in triggering action to de-silt the dams.
- 4.17 Pumped discharges to Cockle Creek from any dam that collects stormwater run-off shall contain total suspended solids at a concentration of no greater than 50 mgL^{-1} where the run-off originates from:
- unvegetated areas of the site where the only contaminant which can be released is VENM; and/or
 - those areas which have been remediated to the approved landuse and before revegetation or construction.
- 4.18 Unless otherwise approved by the DEC, contaminated and potentially contaminated run-off, other than from the containment cell(s) and run-off contaminated only with VENM, shall be contained on the site for up to average monthly rainfall conditions without overflowing, in accordance with the water balance required under condition 7.4b). The capacity of the dams for containment of this run-off shall be subject to the approval of the DEC. The Proponent shall ensure that run-off water containment is in place prior to the commencement of remediation works on the site.

Sewer Discharges

- 4.19 Prior to the commencement of any discharges of wastewater/leachate from the cell system into the sewer, the Proponent shall:
- a) seek agreement from Hunter Water Corporation to discharge wastewater/ leachate from the cell to the sewer;
 - b) report to the Department as to whether Hunter Water Corporation has agreed to a Trade Waste Agreement; and
 - c) if Hunter Water Corporation agrees with the Trade Waste Agreement, implement the Agreement in accordance with Hunter Water Trade Wastewater Policy and the conditions of the Agreement.

Air Quality Impacts

- 4.20 The Proponent shall ensure that the project is undertaken in a manner that minimises or prevents dust emissions from the site, including wind-blown and traffic generated dust.
- 4.21 All vehicles associated with the project that are carrying material that may generate dust, shall be covered at all times, except during loading and unloading. Such vehicles shall be covered or enclosed in a manner that will prevent emissions of dust from the vehicles at all times.
- 4.22 The Proponent shall ensure that no offensive odour, as defined under section 129 of the *Protection of the Environment Operations Act 1997*, is emitted beyond the boundary of the site.
- 4.23 The Proponent shall install, operate and maintain during a meteorological station at the site for the duration of the project, in accordance with requirements of AS2922 1987 "Ambient Air Guide for Siting of Sampling Units or its most contemporary version. The Proponent shall use the monitoring station to monitor parameters in accordance with condition 5.2.

Noise Impacts

- 4.24 The Proponent shall only undertake works associated with the project that may generate an audible noise at the closest residential receptor during the following hours:
- a) 7:00 am to 6:00 pm, Mondays to Fridays;
 - b) 7:00 am to 1:00 pm on Saturdays; and
 - c) at no time on Sundays or public holidays.

This condition does not apply under direction from a relevant authority for safety reasons, or in the event of an emergency where works are required to avoid the loss of lives, property and/or to prevent environmental harm.

- 4.25 The Proponent may seek the Director-General's approval to alter the hours referred to under condition 4.24 for a specific work or class/ group of works. In seeking the Director-General's approval, the Proponent shall provide details of the expected timing, duration, anticipated impacts and mitigation measures to be applied to the works. In granting approval to alteration of the hours of works, the Director-General may require the Proponent to notify any affected receptors of the works prior to their commencement.
- 4.26 The Proponent shall design and undertake all works to ensure that the noise contributed from the project to the background acoustic environment in any residential area does not exceed 5dB(A) above background noise levels
- 4.27 The Proponent shall hold, and maintain for the duration of remediation, contingency for the placement of noise attenuation barriers along the boundaries of Areas 2, 5 and 8 (as shown in the EA) immediately opposite residences in Boolaroo. The erection of such barriers shall be determined by the results of liaison with the potentially affected residents and monitoring of noise levels during the remediation works.

4.28 Notwithstanding condition 4.25, the Director-General may require the Proponent to install noise attenuation barriers if noise monitoring results submitted to the Department as part of any project progress reporting or provided as a result of a request by the Department indicate significant exceedance of the criteria caused by noise generated from the project.

Heritage Impacts and Management

4.29 The Proponent shall prepare a **Conservation Management Plan** to include measures to be employed for the ongoing use and preservation of the Old Laboratory and the collection of historical archives and artefacts accumulated during the pre-demolition heritage investigations. The Plan shall be prepared in consultation with the Department's Heritage Office and shall include provisions for the ongoing management and funding of the implementation of the plan. The plan shall be submitted to the Department prior to completion of remediation.

5. ENVIRONMENTAL MONITORING AND AUDITING

Air Quality and Meteorological Monitoring

- 5.1 The Proponent shall prepare and implement an **Air Quality Monitoring Program** for the remediation works as part of the Air Quality Management Plan required under condition 7.4a) . The Program shall include dust deposition, ambient monitoring and continuous monitoring in accordance with a real time/ reactive dust management strategy prepared for the remediation works. The location and operation of monitoring stations shall be conducted in accordance with the requirements of *Approved Methods for the Sampling and Analysis of Air Pollutants in New South Wales* (DEC, August 2005) or its contemporary version. The Program shall specify the number and location of continuous sampling points for fine particulate (PM₁₀) complying with Approved Method 22 (AM-22) and lead during each stage of the works, to ensure sufficient representation of the relevant sensitive receptors at each stage of the remediation works. The location of these sampling points shall be reviewed and amended as the location and scope of remediation changes.
- 5.2 From the commencement of any works on the site, the Proponent shall continuously monitor, utilising the meteorological monitoring station referred to under condition 4.23 of this approval, each of the parameters listed in Table 1, utilising the sampling method indicated and applying the averaging period and units specified in the Table.

Table 1 – Meteorological Monitoring

Parameter	Units of measure	Averaging Period	Sampling Method
Rainfall	mm	1-hour	AM-4
Wind speed @ 10 metres	ms ⁻¹	15-minute	AM-2 & AM-4
Wind direction @ 10 metres	°	15-minute	AM-2 & AM-4
Temperature @ 2 metres	°C	15-minute	AM-4
Temperature @ 10 metres	°C	15-minute	AM-4
Sigma theta @ 10 metres	°	15-minute	AM-2 & AM-4
Solar radiation	Wm ⁻²	15-minute	AM-4

Surface Water and Groundwater Monitoring

5.3 The Proponent shall prepare and implement **Groundwater Monitoring Program** for the remediation works and post remediation activities as part of the environmental management plans required under conditions 7.4 and 8.6. The Program shall be submitted to the DEC for approval prior to the commencement of remediation. The Program shall be developed to assess trends over an appropriate timeframe and measurement of seasonal variation. The Program shall include, but not necessarily be limited to:

- a) requirements to monitor both the shallow and deep aquifer in and around the containment cell(s) commencing no later than six months after the date of this approval;
 - b) an aim of determining the connectivity between the shallow and deep aquifers, and use of the data for the fate and transport model required under condition 3.2, which will inform the consideration and approval of the cell(s) design);
 - c) groundwater quality monitoring parameters, including also parameters that modify toxicity;
 - d) construction details and location of monitoring bores and frequency of sampling; and
 - e) reporting requirements.
- 5.4 Groundwater interception and monitoring shall be continued until it is demonstrated to the satisfaction of the DEC that there is no longer a significant risk of harm posed by the contamination on or moving off the site.
- 5.5 The groundwater monitoring in the shallow and deeper aquifer around the containment cell(s), outside the groundwater interception system, shall be continued until such time as the DEC agrees that it is no longer required.
- 5.6 The Proponent shall prepare a **Surface Water Monitoring Program** for the remediation works as part of the Water Management Plan required under condition 7.4. The Program shall include, but not necessarily be limited to:
- a) water quality monitoring parameters
 - b) applicable criteria;
 - c) monitoring locations and frequency of sampling; and
 - d) reporting requirements.
- 5.7 Within 14 months of commencement of the placement of materials in the containment cell(s) above the leachate collection system a report shall be provided to the DEC to validate the water balance used to size the containment cell(s)' storage dam. The volume of each input and output of liquid into the dam shall be monitored daily together with the daily rainfall depth measured at the premises for the first 12 months of operation of the containment cell(s). The report shall advise on the accuracy or otherwise of the water balance used to size the dam and the circumstances for which the dam could overflow.
- 5.8 Within two months of this approval, or within such period otherwise agreed by the DEC, the Proponent shall report to the DEC the leakage rate of all unlined dams on the site that contain contaminated water. This condition does not apply to dams that collect water from uncontaminated areas of the site.

Noise Monitoring and Assessment

- 5.9 The Proponent shall prepare a **Noise Monitoring Program** for the remediation works as part of the Noise and Vibration Management Plan required under condition 7.4. The Program shall meet the requirements of the DEC, and shall include, but not necessarily be limited to:
- a) noise monitoring, consistent with the recommendations of the Noise and Vibration Management Plan prepared by Vipac Engineers & Scientists Ltd dated 11 April 2006;
 - b) methodologies for noise monitoring;
 - c) location of noise monitoring;
 - d) frequency of noise monitoring, which shall include at least quarterly monitoring; and
 - e) monitoring requirements in response to complaints.
- 5.10 Prior to the commencement of remediation, the Proponent shall submit to the Director-General and the DEC an **Updated Noise Assessment**, based generally on the documents referred to under condition 1.1 and updated to reflect the final detailed design of the project. The Assessment shall demonstrate that the final detailed design is capable of meeting the requirements of this approval, and shall be used as a basis for the development of the Noise Management Plan required under condition 7.4.

Environmental Auditing

- 5.11 Within twelve months of the commencement of works on the site and every year thereafter for the duration of the remediation works, or as otherwise agreed or required by the Director-General, the Proponent shall commission an independent, qualified person or team to undertake an Environmental Audit of the project. 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 within one month of the completion of the Audit. The Audit shall:
- a) be carried out in accordance with *ISO 19011:2003 - Guidelines for Quality and/ or Environmental Management Systems Auditing*;
 - b) assess compliance with the requirements of this approval, and other licences and approvals that apply to the project;
 - c) assess the environmental performance of the project against the predictions made and conclusions drawn in the documents referred to under condition 1.1 of this approval; and
 - d) review the effectiveness of the environmental management of the project, including any environmental impact mitigation works.

The Director-General may require the Proponent to undertake works to address the findings or recommendations presented in the Report. Any such works shall be completed within such time as the Director-General may require.

6. COMMUNITY INFORMATION, CONSULTATION AND INVOLVEMENT

- 6.1 Subject to confidentiality, the Proponent shall make the documents required under this approval available for public inspection on request and free of charge.

Provision of Electronic Information

- 6.2 Prior to the commencement of any works associated with the project, the Proponent shall establish and maintain a new website, or dedicated pages within its existing website for the provision of electronic information associated with the project. The Proponent shall publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to:
- a) status of the remediation works and planned activities;
 - b) general public information on the health effects of lead, or a link to relevant external public information;
 - c) a copy of this approval and related regulatory instruments applying to the site;
 - d) details of the monitoring programs and management plans required under this approval;
 - e) summary results of monitoring undertaken as part of this approval; and
 - f) details of a contact point(s) to which community complaints or inquiries may be directed, including a telephone number, a postal address and an email address.

Complaints Procedure

- 6.3 Prior to the commencement of any works associated with the project, the Proponent shall ensure that the following are available for community complaints during the project:
- a) a telephone complaints line, which must be operated during construction and operating hours, for the purpose of receiving any complaints from members of the public in relation to activities conducted at the site;
 - b) a postal address to which written complaints may be sent; and
 - c) an email address to which electronic complaints may be transmitted.

The Proponent must notify the public of the complaints line telephone number, postal address and email address on the website/dedicated pages referred under condition 6.3 prior to the commencement of works. The telephone number, the postal address and the email

address shall be displayed on a sign near the entrance to the site, in a position that is clearly visible to the public, and which clearly indicates the purposes of the sign.

- 6.4 The Proponent shall record details of all complaints received through the means listed under condition 6.3 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 Proponent in relation to the complaint, including any follow-up contact with the complainant; and
 - f) if no action was taken by the Proponent in relation to the complaint, the reason(s) why no action was taken.

The Complaints Register shall be made available for inspection by the Director-General upon request.

- 6.5 Prior to the commencement of works associated with the project, the Proponent shall develop and implement 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 incorporated in the Remediation Environmental Management Plan prepared under condition 7.3.

7. REMEDIATION ENVIRONMENTAL MANAGEMENT

Environmental Representative

- 7.1 Within three months of the date of this approval, or as otherwise agreed by the Director-General, the Proponent shall nominate a suitably qualified and experienced Environmental Representative(s). The Proponent shall employ the Environmental Representative(s) on a full-time basis during the remediation works and post-remediation for a period agreed in consultation with the Director-General. The Environmental Representative shall be:
- a) the primary contact point in relation to the environmental performance of the remediation activities;
 - b) the primary interface with the Community;
 - c) responsible for all Management Plans and Monitoring Programs required under this approval;
 - d) responsible for considering and advising on matters specified in the conditions of this approval, and all other licences and approvals related to the environmental performance and impacts of the project;
 - e) responsible for the management of procedures and practices for receiving and responding to complaints in accordance with condition 6.4 of this approval;
 - f) responsible for facilitating an induction and environmental training program for relevant persons involved with the project; and
 - g) 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 Proponent shall notify the Director-General, the DEC, NSW Health and Council and 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.

Interim Groundwater Remedial Plan

- 7.2 The Proponent shall prepare and implement an **Interim Groundwater Remedial Plan** in accordance with Site Audit Statement No. WRR127/3 dated 16 December 2005. The Interim

Groundwater Remedial Plan, reviewed by the Site Auditor, and any associated Site Audit Report and Site Audit Statement shall be submitted to the DEC.

Remediation Environmental Management Plan

- 7.3 The Proponent shall prepare and implement a **Remediation Environmental Management Plan** to detail environmental management practices and procedures to be followed during remediation. The Plan shall be consistent with *Guideline for the Preparation of Environmental Management Plans* (DIPNR 2004) and shall include, but not necessarily be limited to:
- a) a description of all remediation activities to be undertaken on site;
 - b) statutory and other obligations that the Proponent is required to fulfil during remediation including all approvals, consultations and agreements required from authorities and other stakeholders, and key legislation and policies;
 - c) details of environmental controls to manage predicted environmental impacts;
 - d) details of how the environmental performance of the remediation works will be monitored, and what actions will be taken to address identified adverse environmental impacts;
 - e) a description of the roles and responsibilities for all relevant employees or contractors involved in the remediation project;
 - f) reporting requirements to the Site Auditor and relevant agencies;
 - g) the additional studies listed under condition 7.4 of this approval;
 - h) a complaints handling and response protocol as required under condition 6.4; and
 - i) mechanisms to ensure the on-going consistency of the Plan with the RAWPs referred to under condition 2.3.

The Plan shall be submitted to the Director-General and the DEC no later than one month prior to the commencement of any remediation works, or within such period otherwise agreed by the Director-General. Remediation works shall not commence until written approval of the Remediation Environmental Management Plan has been received from the Director-General and the DEC. Unless otherwise agreed to by the DEC, the Plan shall be reviewed annually and the reviews of the Plan shall be notified to the Department and the DEC no later than two months after the yearly anniversary of the previous version of the Plan. Annual reviews of the Plan shall be submitted for the approval of the DEC. Nothing in this approval precludes the Applicant from preparing the Remediation Environmental Management Plan in one or more parts as it may be convenient to the relevant stage of the project and subject to compliance with this condition.

- 7.4 As part of the Remediation Environmental Management Plan required under condition 7.3, the Proponent shall prepare and implement the following:
- a) an **Air Quality Management Plan** to detail procedures and measures to minimise impacts from the remediation activities on local air quality and human health. The Plan, which shall be prepared in consultation with the DEC and shall be endorsed by the Site Auditor prior to submission to the Director-General and the DEC, shall include, but not necessarily be limited to:
 - i) identification of all major sources of dust that may be emitted from the project, including identification of the major components and quantities of these emissions;
 - ii) an air quality monitoring program as required under condition 5.1;
 - iii) pro-active and reactive management and response mechanisms for dust emissions, with specific reference to measures to be implemented 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 project, or the mode of operation of the project at any time;
 - iv) the development and identification of PM₁₀ and lead concentration trigger levels at which:
 - dust management actions shall be taken, and specification of the relevant actions; and

- works at the site must cease, to ensure no adverse impact would occur at receiver locations;
 - v) 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 1.1 of this approval, including verification of air quality modelling and predictions, as may be relevant.
- b) a **Contaminated Water Management Plan** to detail procedures and measures to manage contaminated waters on site and prevent the discharge of contaminated waters off-site. The Plan shall include, but not necessarily limited to:
- i) a water balance model to determine the volume of contaminated run-off needing to be stored to prevent an overflow for monthly (January to December inclusive) average rainfall conditions. The water balance shall be run using monthly time steps and include all inputs and outputs to determine the size requirements for the storage dams. The run-off collected and stored shall be from those areas on the site to be and being remediated;
 - ii) details of storage dams designed in accordance with the water balance models including location, capacity, lining requirements, operation and construction details such as timing and construction quality assurance procedures;
 - iii) procedures, including construction quality assurance procedures, to de-silt dams in a manner not to damage any installed liner;
 - iv) a plan for the automation of the pumping of contaminated surface water from the storage dams to ensure that the dams' storage capacities are maximised and available to contain run-off;
 - v) description of the operation of the installed pumping wells and water treatment system;
 - vi) methods to manage any contaminated groundwater encountered during construction;
 - vii) water quality monitoring requirements during and after remediation including, but not necessarily limited to, deep and shallow groundwater monitoring;
 - viii) any measures to manage contaminated groundwater entering the site from the Incitec-Pivot site; and
 - ix) systems to regularly review, and correct as necessary, the efficiency of the surface water containment, groundwater interception and water treatment systems used during remediation.
- c) an **Erosion and Sedimentation Management Protocol** prepared in accordance with the Landcom's *Managing Urban Stormwater: Soils and Construction* (Landcom, 2004) using the 90th percentile five-day event to contain stormwater run-off from the following areas of the site:
- i) any unvegetated areas of the premises where the only contaminant which can be released is VENM; and/or
 - ii) those areas which have been remediated to the approved landuse and before they are revegetated or constructed upon.
- d) a **Noise and Vibration Management Plan**. The Plan shall incorporate the recommendations of the Noise and Vibration Management Plan prepared by Vipac Engineers & Scientists Ltd and dated 11 April 2006, but not necessarily limited to them, and adequately address the following to the satisfaction of the DEC:
- i) compliance standards or criteria in accordance with condition 4.26;
 - ii) community consultation, including notification;
 - iii) complaints handling monitoring/system;
 - iv) site contact person to follow up complaints in accordance with condition 7.1;
 - v) mitigation measures;
 - vi) the design/orientation of the proposed mitigation methods demonstrating best practice;
 - vii) construction times;
 - viii) contingency measures where noise complaints are received; and
 - ix) a noise monitoring program as required under condition 5.9;
- e) a **Traffic and Transport Management Protocol** to detail procedures and measures to manage traffic generated during remediation, with a particular focus on managing

traffic movements associated with the importation of fill/ capping material to the site. The Plan shall address the requirements of Council and the Roads and Traffic Authority and shall include, but not necessarily be limited to:

- i) details of traffic routes for heavy vehicles, including any necessary route or timing restriction for oversized loads;
- ii) proposed access(es) of heavy vehicles to the site;
- iii) consideration of alternative methods of transportation of fill to the site, including rail transportation;
- iv) measures to be employed to ensure traffic volume, acoustic and amenity impacts along the heavy vehicle routes are minimised;
- v) timing of traffic movements;
- vi) plan of internal roads and routes to be used during remediation;
- vii) training requirements to drivers; and
- viii) demonstration that all statutory responsibilities with regard to road traffic impacts have been complied with.

8. COMPLETION OF REMEDIATION WORKS

Validation of Remedial Works

- 8.1 Upon completion of the remediation works within each stage and/ or area of the site, final validation reports on the remediation, including the results of any groundwater monitoring program, shall be prepared by an appropriately qualified and experienced consultant on behalf of the Proponent. These reports shall be consistent with guidelines made or approved by the DEC under Section 105 of the *Contaminated Land Management Act 1997*.
- 8.2 Validation reports prepared under condition 8.1 shall be reviewed by the Site Auditor. Site Audit Statement(s) and Summary Site Audit Report(s) shall be prepared by the Site Auditor certifying whether the remedial works within each stage and/ or area of the site have been carried out in accordance with the approved RWAPs, the conditions of this approval and any recommendations made the Site Auditor, and whether the remediated part of the site is suitable for its intended land use.
- 8.3 Validation reports and associated Site Audit Statements and Summary Audit Reports prepared under conditions 8.1 and 8.2, shall be submitted to the Director-General and the DEC. Land within the site shall not be sold or released for development unless approval of the validation report and associated Site Audit Report and Statement for that land have been obtained from the Director-General and the DEC.
- 8.4 Upon completion of containment cell(s), a certificate(s) prepared by a suitably qualified structural engineer or a compliance certificate(s) issued by an accredited certifier, is to be submitted to the Principal Certifying Authority certifying that the cell(s) structure, where relevant, has been completed in accordance with plans and specifications approved in the Containment Cell Detailed Design and Construction Report.
- 8.5 Upon completion of the containment cell(s) a qualified structural or geotechnical engineer shall certify that all relevant works have been constructed in compliance with the plans approved by the Mine Subsidence Board under condition 3.4.

Environmental Management of Containment Cell(s)

- 8.6 The Proponent shall prepare and implement a **Containment Cell Environmental Management Plan** to detail an environmental management framework, practices and procedures to be followed during operation of the containment cell (s). The Plan shall be consistent with *Guideline for the Preparation of Environmental Management Plans* (DIPNR 2004) and shall include, but not necessarily be limited to:
 - a) identification of all statutory and other obligations that the Proponent is required to fulfil in relation to operation of the cell (s), including all approvals, licences, approvals and consultations;

- b) a description of the roles and responsibilities for all relevant employees involved in the operation of the cell (s);
- c) requirements for the ongoing management of the plan and for funding the implementation of the plan
- d) environmental controls and measures to be applied to the operation of the containment cell (s);
- e) means by which environmental performance can be periodically monitored, reviewed and improved, where appropriate;
- f) operational requirements prescribed by the Site Auditor and the accredited certifier; and
- g) the additional studies listed under condition 8.7 of this approval.

The Plan shall be submitted for the approval of the Director-General and the DEC no later than one month prior to the completion of the remediation works, or within such period otherwise agreed by the Director-General. Any reviews of the plan shall be submitted to the Director-General for approval.

8.7 As part of the Containment Cell Environmental Management Plan for the project, required under condition 7.1 of this approval, the Proponent shall prepare and implement the following Management Plans:

- a) a **Containment Cell Integrity Management Plan**. The Plan shall detail measures to manage the integrity of the cap and other cell(s) structures during the life of the cell(s). The Plan shall include, but not necessarily be limited to:
 - ii) maintenance requirements for the cap and other containment cell's structures;
 - iii) measures to monitor the effectiveness of the cell (s) structure; and
 - iv) site limitations for future development on site.
- b) a **Water Management Plan**. The Plan shall detail measures that will be employed to manage water on the site, and to minimise the discharge of pollutants to lands and/ or waters throughout the life of the project. The Plan shall be based on best environmental practice and shall address any requirements of the Department and the DEC. The Plan shall include, but not necessarily be limited to:
 - i) details of the operation of the effluent treatment plant;
 - ii) details of surface water, groundwater and leachate management controls;
 - iii) maintenance requirements for groundwater pumping systems and other water management systems in place;
 - iv) surface water, groundwater and leachate quality monitoring requirements for the operation of the containment cell (s); and
 - v) corrective actions to any recorded exceedance to adopted criteria.
- c) a **Landscaping Management Plan**. The Plan shall be prepared in consultation with Council and shall include, but not necessarily limited to:
 - i) species selected in consultation with Council for revegetation on and around the cell(s);
 - ii) revegetation timeframes; and
 - iii) vegetation maintenance requirements after remediation.

Imposition of Covenant for Containment Cell(s)

8.8 Prior to the conclusion of construction of the containment cell(s), the Proponent shall demonstrate to the satisfaction of the Director-General and the DEC that a public positive covenant under section 88E of the *Conveyancing Act 1919* in accordance with the provisions of section 29 of the *Contaminated Land Management Act 1997* has been applied to the containment cell(s). The covenant shall require the ongoing maintenance, funding and monitoring of the containment cell(s) after completion of construction. The covenant shall address, but not necessarily limited to, the following matters, as relevant:

- a) requirements for long term management, operation, maintenance and monitoring the containment cell(s) after the conclusion of remediation in accordance with the approved Containment Cell Environmental Management Plan prepared under condition 8.6;

- b) the preparation and keeping of documentation that records the details of the contaminated materials under the cell(s);
- c) requirements 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;
- d) requirements for future developments to consult the Mine Subsidence Board for the design of buildings and structures;
- e) arrangements for the funding by the Proponent of the ongoing maintenance and monitoring of the containment cell(s) until the sale of the land;
- f) framework for funding the cost of ongoing maintenance of the containment cell (s) either as the 'common property' of a strata scheme or the 'community property' of a community scheme;
- g) details of constructor's warranty and defects liability protection negotiated before the commencement of works;
- h) provisions for managing any long term potential liability of the cell(s), including appropriate level of insurance for failure of the containment cell(s) supplemented with a security bond, or other financial surety;
- i) incorporation of terms agreed with by the DEC and the Director-General; and
- j) if required by the DEC 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 Proponent shall commence consultation with the Director-General and the DEC as soon as practicable after the date of operation of this approval, or within such period otherwise agreed with the Director-General and the DEC, with the aim of establishing the scope and content of any covenant that may be applied to the containment cell(s). Unless otherwise agreed or required by the Director-General and the DEC, the scope and content of any such covenant shall be developed to the satisfaction of the Director-General and the DEC prior to the commencement of remediation excavation.

Munibung Hill Environmental Management Protocol

- 8.9 The Proponent shall prepare and implement an **Environmental Management Protocol** for Munibung Hill and those areas of the Main Site not subject to excavation, and for the reserve/conservation zone to be established on the south and south-west boundary of the Cardiff West Estate. The Protocol, to be prepared in consultation with Council and the Hunter-Central Rivers Catchment Management Authority, shall detail an environmental management framework, practices and procedures to be followed after remediation of this area. The Protocol shall be consistent with *Guideline for the Preparation of Environmental Management Plans* (DIPNR 2004) and shall include, but not necessarily be limited to:
- a) clear definition and delineation of the area covered by this plan;
 - b) identification of all statutory and other obligations that the Proponent is required to fulfil in relation to managing this area, including any approvals, licences, approvals and consultations;
 - c) contamination status of the area;
 - d) environmental measures and controls to be applied to this area;
 - e) means by which environmental performance can be periodically reviewed and improved, where appropriate;
 - f) systems for the ongoing management of the plan and for funding the implementation of the plan;
 - g) Site Audit Statement and Site Audit Reports prepared by the Site Auditor for this land;
 - h) environmental monitoring requirements;
 - i) details of how public health will be protected in the area the subject of the Protocol, including with respect to any residual contamination that may remain following remediation; and
 - j) specific measures to manage surface water, erosion and sedimentation, and vegetation and landscaping.

The Protocol shall be submitted for the approval of the Director-General no later than one month prior to the commencement of any works in the area subject to this Protocol, or within such period otherwise agreed by the Director-General.

9. ENVIRONMENTAL REPORTING

Incident Reporting

- 9.1 The Proponent shall notify 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 Proponent shall provide full written details of the incident to the Director-General within seven days of the date on which the incident occurred.
 - 9.2 The Proponent shall meet the requirements of the Director-General to address the cause or impact of any incident, as it relates to this approval, reported in accordance with condition 9.1 of this approval, within such period as the Director-General may require
 - 9.3 All overflow events from dams containing contaminated water and materials shall be reported to the DEC within 48 hours of an overflow, together with data on the rainfall at the site in the preceding 12 month period.
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