

# 1st Annual Environmental Management Report for Kerosene Vale – Stage 2 Ash Repository Area

October 2010

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Delta Electricity

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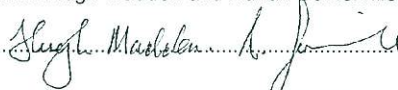
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## List of Acronyms

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AEMR	Annual Environmental Management Report
CoA	Condition of Approval (also known as MCoA – Minister’s CoA)
DECCW	Department of Environment, Climate Change and Water
DoP	Department of Planning
EPL	Environment Protection Licence
KVAD	Kerosene Vale Ash Dam
KVAR	Kerosene Vale Ash Repository
KVAR2	Kerosene Vale Ash Repository Stage 2
mAHD	metres Australian Height Datum
MES	Malfroy Environmental Strategies Pty Ltd
OEMP	Operation Environmental Management Plan
PB	Parsons Brinckerhoff Australia Pty Ltd
RL	Relative Level
SSCAD	Sawyers Swamp Creek Ash Dam

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## Executive Summary

In March 2010, Parsons Brinckerhoff Australia Pty Ltd (PB) was engaged by Delta Electricity to prepare the first Annual Environmental Management Report (AEMR) for the Kerosene Vale Stage 2 Ash Repository Area for the twelve-month period of April 2009 to March/April 2010.

The AEMR has been prepared to address Condition 7.3 of the Project Approval.

Based on the site observations made, information reviewed and the assessment of compliance undertaken, it is considered that the project has been carried out generally in accordance with the requirements of the Conditions of Approval and the OEMP. In addition, it is considered that the project is complying with the relevant requirements of Delta Electricity's Environment Protection Licence (No. 766 – Wallerawang Power Station).

The project's Environmental Assessment made the following assessment (ref: Chapter 16 – Justification and Residual Risk) *'Against the benefit of ongoing electricity production the following key potential environmental impacts have been identified in association with the proposal':*

- *Noise impacts on the local community.*
- *Aquatic ecology impacts associated with the realignment of Sawyers Swamp Creek.*
- *Water quality impacts.*
- *Dust and air emission impacts.*

*The EA and design process has identified proposed mitigation and management measures to mitigate these impacts'.*

Based on the site observations made and the information reviewed, the potential noise, water and dust/air impacts from the operation of the Kerosene Vale Stage 2 Ash Repository have been effectively mitigated and managed.

It should be noted, that Delta Electricity has advised that there are no longer any plans to realign Sawyers Swamp Creek. As such, the aquatic ecological impacts associated with the creek re-alignment will not eventuate.

A number of non-compliances/non-conformances were identified by the review undertaken against the Conditions of Approval and requirements of the OEMP. In preparing this Annual Environmental Management Report, recommendations to address the non-compliances/non-conformances have been presented to Delta Electricity for their consideration. In addition, Delta Electricity has engaged a number of specialist consultants to prepare specialist reports that have been sighted and reviewed in preparing this Annual Environmental Management Report. These specialist reports also provide recommendations for Delta Electricity's consideration.

Based on the findings and recommendations of this report, Delta Electricity has developed an action plan titled *"KVAR EMR Audit – Actions Relating To Partial Compliances and Non-Conformances"*. A copy of this action plan is provided in Appendix C.



# 1. Introduction

On 26 November 2008, Delta Electricity received Project Approval from the Minister of Planning for the Extension of the existing Kerosene Vale Ash Repository Area to permit the continued disposal of ash generated by the Wallerawang Power Station under Section 75J of the *Environmental Planning and Assessment Act 1979*. The project is commonly known as the Kerosene Vale Stage 2 Ash Repository Area.

Condition of Approval 7.3 reads as follows *'The Proponent shall, throughout the life of the project, prepare and submit for the approval of the Director-General, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the project against the Operation Environmental Management Plan and the conditions of this approval. The AEMR shall include, but not necessarily be limited to:*

- a. details of compliance with the conditions of approval;*
- b. a copy of the Complaints Register for the proceeding twelve-month (exclusive of personal details), and details of how these complaints were addressed and resolved;*
- c. identification of any circumstances in which the environmental impacts and performance of the project during the year have not been generally consistent with the environmental impacts and performance predicted in the documents listed under condition 1.1 of this approval, with details of additional mitigation measures applied to the project to address recurrence of these circumstances;*
- d. results of all environmental monitoring required under conditions 3.3 to 3.8 of this approval, including interpretations and discussion by a suitably qualified person; and*
- e. a list of all occasions in the preceding twelve-month period when environmental goals/objectives/impact assessment criteria for the project have not been achieved, indicating the reason for failure to meet the criteria and the action taken to prevent recurrence of that type of failure.*

*The Proponent shall submit a copy of the AEMR to the Director-General every year, with the first AEMR to be submitted no later than twelve months after the commencement of operation of the project. The Director-General may require the Proponent to address certain matters in relation to the environmental performance of the project in response to review of the Annual Environmental Management Report. Any action required to be undertaken shall be completed within such period as the Director-General may require. The Proponent shall make copies of each AEMR available for public inspection on request.*

Operations at the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009.

In March 2010, Parsons Brinckerhoff Australia Pty Ltd (PB) was engaged by Delta Electricity to prepare the first AEMR for the Kerosene Vale Stage 2 Ash Repository Area for the twelve-month period of April 2009 to March/April 2010.

## 2. Purpose of AEMR

The purpose of the AEMR is to provide an annual report to the Director-General of the Department of Planning (DoP) detailing the environmental performance of the Kerosene Vale Stage 2 Ash Repository Area project against the Operation Environmental Management Plan (OEMP) and the conditions of the project approval issued by the Minister of Planning.

### 2.1 Project Setting

Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash in the Stage 2 area as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises existing facilities.

It should also be noted that the project has not experienced an emergency situation which has warranted operations to take place outside standard operational hours. In addition, Delta Electricity representatives advised that they no longer plan to realign Sawyers Swamp Creek.

In preparing this AEMR, PB had access to key Delta Electricity personnel such as Environment Manager Western, Asset Manager External Plant as well as their supporting staff and Bilfinger Berger Services who have conducted the ash placement operations on behalf of Delta Electricity since the commencement of Stage 2 operations.

### 2.2 Site Characteristics

The following information has been sourced from a report prepared by Aurecon (2010) *KVAD Stage II Water Quality Assessment October 2007 to March 2010* as it is considered to provide a good description of the site and its complexity given past and present activities as well as the mineralised nature of the catchment.

*The original ash placement operations were at the Kerosene Vale Ash Dam (KVAD) which was built around a former coal mine void which had deposits of coal waste known as chitter. The void was filled with ash transported from the Wallerawang power station as slurry (i.e. wet ash placement). When the KVAD was full, it was capped with a clay capping. The next ash placement operation was at the Sawyers Swamp Creek Ash Dam (SSCAD) which saw wet ash placement take place from 1980 to 2003. At this time ash placement operations were converted to dry ash placement.*

*The first dry ash placement area was at Kerosene Vale Ash Repository Stage 1, which was located on top of the clay capping of the KVAD. The Kerosene Vale Ash Repository Stage 1 placement works were completed in January 2010. The Kerosene Vale Ash Repository Stage 2 placement works commenced in April 2009. It is this operation that is the focus of this Annual Environmental Management Report.*



## 2.3 Methodology

To prepare this AEMR the following methodology was followed:

**Task 1:** Off site review of key project documentation and the creation of a series of compliance checklists. Key project documentation reviewed included the following:

- ▶ Project Approval and associated conditions of approval.
- ▶ Operation Environmental Management Plan (OEMP).
- ▶ Environmental Assessment and Submissions Report.
- ▶ Pre-Operational Compliance Report.

**Task 2:** On site review/audit and data collection. A two day on site review/audit of ash placement operations within the Stage 2 area and compliance assessment was undertaken on the 25 and 26 March 2010.

**Task 3:** Off site review of data and/or supplied documentation. As with any review/audit process there is typically a quantity of documentation supplied during Task 2 and post Task 2 that can be more efficiently reviewed off site in order to complete the assessment of compliance and environmental performance.

**Task 4:** Preparation of the AEMR.

### 3. **Assessment of Compliance with Conditions of Approval**

In assessing compliance with the conditions of approval the following compliance categories were used:

- Complies
- Partial Compliance
- Non-Compliance
- Not Applicable

Detailed review checklists for each condition of approval are presented in Appendix A. The checklists are presented in groups based on their compliance category and in the following order (Non-Compliance, Partial Compliance, Compliance and Not Applicable).

The Project Approval consists of 70 conditions of approval. The following is a summary of the compliance assessment findings against the 70 conditions of approval:

- Compliance Findings – 25
- Not Applicable Findings – 33
- Partial Compliance Findings – 8
- Non-Compliance Findings - 4

The majority of the review findings were Not Applicable due to the fact that the associated trigger event or date has not eventuated. A number of Partial Compliances and Non-Compliances were identified and are detailed in the following sections.

#### 3.1 **Partial Compliances**

The following is a summary of the specific details which resulted in Partial Compliance findings for Conditions of Approval 2.19, 2.20, 3.4, 3.5, 3.8, 5.1, 5.2 and 6.1:

- Condition 2.19 – Unable to assess compliance with respect to ongoing operational noise monitoring and associated compliance with respect to the criterion as specified under condition 2.18. Reference should be made to the non-conformance identified with respect to condition 2.18.
- Condition 2.20 – Unable to assess compliance with respect to ongoing operational noise monitoring. Reference should be made to the non-conformance identified with respect to condition 2.18.
- Condition 3.4 – Compliance with respect to monthly groundwater monitoring for the first 12 months of project operation. Non-conformance with respect to additional bores not installed as per the OEMP. It should be noted that a specialist report prepared by Aurecon (2010) provides recommendations for Delta's consideration in relation to the use of existing bores.



- Condition 3.5 – Compliance with respect to monthly surface water monitoring for the first 12 months of project operation. Non-conformance with respect to the establishment and monitoring of surface water at two sites in Sawyer Swamp Creek as per OEMP. However, a specialist report prepared by Aurecon (2010) indicated that the existing receiving water site in Sawyers Swamp Creek (WX7) is sufficient.
- Condition 3.8 – Compliance with respect to the establishment of an air quality management/monitoring plan. Non-conformance with respect to establishment of two new dust deposition gauges as per the requirement of the OEMP. It should be noted that a specialist report prepared by Malfroy Environmental Strategies (2010) “*Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 – March 2010*” provides a number of recommendations with respect to air quality management for Delta’s consideration.
- Condition 5.1 – Delta’s project web site informs that a copy of the Environmental Assessment and the Submissions Report are available at the Department of Planning web site – KV project, however no direct link to these reports is located on Delta’s project web site. In addition, Delta’s project web site does not provide current information on operational progress and construction activities.
- Condition 5.2 – As per the partial compliance finding for Condition 5.1.
- Condition 6.1 – At this point in time Delta/Environmental Representative have yet to establish an internal auditing schedule against the specific requirements of the approval OEMP, in particular Environmental Inspections (Section 3.7.1 and Table 3-2), Environmental Audits (Section 3.8), Environmental Monitoring Program (Table 5-1), Environmental Targets and Performance Indicators (Table 6-1) and Environmental Management Sub-Plans (Section 6.2).

## 3.2 Non-Conformances

The following non-conformances were identified with respect to the Conditions of Approval:

- Condition 2.1 – A report (i.e. long-term ash management strategy) has not been submitted to the Director-General of DoP by the required date of October 2009.
- Condition 2.9 – A report (i.e. review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation) has not been prepared and submitted to the Director-General of DoP by the required date of October 2009.
- Condition 2.18 – No evidence that the requirement of MCoA3.3 to undertake ongoing operational noise monitoring has taken place.
- Condition 3.3 – No evidence that the requirement to undertake ongoing operation noise monitoring has taken place.

In addition, as detailed in Section 3.1 (Partial Compliances) a number of non-conforming aspects were identified with respect to the Conditions of Approval.

## 4. Compliance with other Licences, Permits and Approvals that Apply to the Project

The project is located within the operating area of Delta Electricity's Wallerawang Power Station, which holds an Environment Protection Licence (EPL) No. 766.

The following sections of the EPL are relevant with respect to the operations of the Kerosene Vale Stage 2 Ash Repository Area:

- L5 Waste
- L6 Noise Limits
- L7 Hours of Operation

**Table 4-1 EPL Compliance Assessment**

EPL requirements	Finding	Relevant Section of AEMR
L5 Waste	Compliance	Section 6.2.7 Waste Management and detailed waste management sub plan review checklist (Appendix B)
L6 Noise Limits	Compliance *	Detailed review checklist for MCoA3.2 (Appendix A), Section 5 Complaints Register and Section 6.1.1 Ongoing Operational Noise Monitoring
L7 Hours of Operation	Compliance	Detailed review checklists for MCoA2.8 and MCoA2.10 (Appendix A) and detailed noise and vibration management sub plan review checklist (Appendix B)

“\*” Since the completion of the operational noise review (September 2009) no ongoing operational noise monitoring has been undertaken.

Based on the above observations and findings, the project is complying with the relevant requirements of Delta Electricity's Environment Protection Licence (No. 766).



## **5. Complaints Register (April 2009 to March-April 2010)**

Delta Electricity operates a centralised database system for complaints. The system was inspected as part of the onsite review and found to address the requirements as specified by Condition of Approval 5.4.

One noise complaint was attributable to the operation of the Kerosene Vale Stage 2 Ash Repository. Two dust related complaints were received by Delta Electricity with respect to the Kerosene Vale Stage 2 Ash Repository, one of which following investigation was not attributable to the operation of the Kerosene Vale Stage 2 Ash Repository. Details of the complaints are provided in the following sections.

### **5.1 Noise Complaint - 29 May 2009**

On 29 May 2009, Delta received adverse response from a resident in relation to day time noise from Stage 2 fly ash operations on the haul road. Upon investigation by Delta personnel it was determined that on 29 May 2009 only, the new fly ash trucks were temporarily replaced with the previously used twin trailer Stage 1 trucks due to short term fly ash loading issues. On 30 May 2009, normal fly ash truck operations resumed (i.e. new fly ash trucks back in operation) and the complaint was satisfactorily resolved with no further complaint or adverse comment from the resident. No noise investigations to measure or otherwise determine potential received noise influence from Stage 2 operations at the complainant property were considered necessary.

### **5.2 Dust Complaint – May 2009**

In May 2009, Delta Electricity received a complaint regarding ash trucks operating on the coal haulage road with ash uncovered and therefore a potential source of dust in the ambient environment. Delta's complaint register noted that "one of these trucks had a faulty cover but was required for use as no other trucks were available". Complainant satisfied with explanation of situation.

### **5.3 Dust Complaint – December 2009**

A dust complaint dated 4 December 2009 (re: fly ash on car) was investigated by DECCW, which confirmed that the material was fly ash. Delta Electricity reviewed operational conditions at the time, and found that the likely source of ash was WW Unit 8 Boiler, where a fuel trip caused the precipitators to de-energise at the time of the complaint. Based on Delta's investigation, this complaint does not appear to be associated with the Stage 2 Kerosene Vale Ash Repository operations.

## 6. Project Environmental Performance

In reviewing the environmental performance of the project, the requirements of the environmental monitoring (as specified in the conditions of approval) as well as the OEMP management sub-plans were assessed.

### 6.1 Environmental Monitoring

The AEMR is required to include the results of all environmental monitoring required under conditions of approval 3.3 to 3.8, including interpretations and discussion by a suitably qualified person. The environmental monitoring associated with conditions of approval 3.3 to 3.8 includes the following:

- Condition of Approval 3.3 – Ongoing Noise Monitoring.
- Condition of Approval 3.4 – Groundwater Monitoring.
- Condition of Approval 3.5 – Surface Water Quality Monitoring.
- Condition of Approval 3.6 – Hydrological Monitoring with respect to Sawyers Swamp Creek realignment.
- Condition of Approval 3.7 – Ecological Monitoring with respect to the Sawyers Swamp Creek realignment.
- Condition of Approval 3.8 – Air Quality Monitoring.

In addition, the AEMR is required to present all occasions in the preceding twelve-month period when environmental goals/objectives/impact assessment criteria for the project have not been achieved as well as indicating the reason for the failure and the action taken to prevent the recurrence of that type of failure.

#### 6.1.1 Ongoing Operational Noise Monitoring (CoA 3.3)

Since the completion of the Stage 2 Kerosene Vale Ash Repository Operational Noise Review, no further noise monitoring has been undertaken, which does not comply with the requirement for ongoing operational noise monitoring.

Condition of Approval 3.3 relates to the preparation and implementation of an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in Condition of Approval 2.15, throughout the life of the project. It is noted that the Operational Noise Monitoring Program shall form part of the Operational Noise Management Plan which is a requirement of the OEMP.

The project's approved OEMP provides guidance as to the required Operational Noise Monitoring Program in the following sections:

- Section 5.2 Environmental Monitoring Program (Table 5-1, Noise – Normal Conditions).
- Appendix A: KVAR Stage 2 Operations, Operational Noise and Vibration Management Plan.
- Section 7.2 Ongoing Operational Noise Monitoring (CoA 3.3).

The Stage 2 Kerosene Vale Ash Repository Operational Noise Review made the following recommendations with respect to ongoing operational noise monitoring:



- *To minimise potential for noise impact creep and to preserve acoustic amenity at the nearest receivers, noise management measures have been recommended, including – ‘as required by CoA 3.3 and as part of due diligence practice, routine monitoring of ambient noise levels will be undertaken in the surrounding environment at a 6 monthly frequency or when peak Stage 2 fly ash operations are increased from typical existing daily movement’.*

Given that no ongoing operation noise monitoring has been undertaken it is not possible to present the following as required for this Annual Environmental Management Report:

- Results of all environmental monitoring required under Condition of Approval 3.3 including interpretations and discussion by a suitably qualified person.
- List of all occasions in the preceding twelve-month period when environmental goals/objectives/impact assessment criteria for the project have not been achieved, indicating the reason for failure to meet the criteria and the action taken to prevent recurrence of that type of failure.

### **6.1.2 Groundwater Monitoring (CoA 3.4)**

In preparing this report, an Aurecon report titled *KVAD Stage II Water Quality Assessment October 2007 to March 2010* (ref: Final Draft, 18 June 2010, report ref: 208562) was sighted and reviewed. The purpose of the assessment undertaken by Aurecon was to assess the effects of a) the initial Stage II dry ash placement, in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.

The following text has been extracted from the Aurecon (2010) report in relation to groundwater (reference Section 6 Conclusions):

*The effects of the ongoing dry ash placement at KVAR Stage II and the SSCAD seepage on local ground water and surface water quality have been assessed.*

*The current, Stage II, water quality in receiving waters and changes from pre-Stage I to the initial Stage II placement were examined in terms of the likely effects of the groundwater beneath Stage II and seepage from the SSCAD on water quality in Sawyers Swamp Creek. These effects were put into the context of poor water quality in the area, which is unrelated to the dry ash placement. From this, the following conclusions were drawn on the overall effects of the groundwater beneath Stage II and the SSCAD seepage on receiving water quality.*

*With respect to the effects of the groundwater beneath Stage II:*

- *Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to:*
  - ▶ *Limited rainfall infiltration into the groundwater due to the dry ash itself and compaction by machinery.*
  - ▶ *Placement of the dry ash on the clay capping of the KVAD and its limited permeability.*
  - ▶ *The highly mineralised nature of the catchment and effects of the blocked KVAD toe drains.*
  - ▶ *Attenuation of selenium in ash leachate by uptake by local soils or mine spoil.*

The Aurecon (2010) report also indicated the following:

*The dry ash placement management has mainly involved limiting rainfall infiltration and reducing seepage from the KVAD into the local groundwater. The effectiveness of these activities has been demonstrated by improved water quality in the local groundwater during the Stage I placement from 2003 to 2006, before the toe drains (of the Kerosene Vale Ash Dam) became blocked. Examination of the processes determining groundwater quality showed that the improved water quality was due to reduced KVAD seepage relative to background groundwater flows.*

It should be noted that the blocked toe drains of the KVAD were unblocked in 2010 and it can be reasonably expected improved water quality in the local groundwater will be evident as monitoring continues in during the operational phase of the project.

Based on the preliminary assessment undertaken by Aurecon (2010), it appears that the quality of the groundwater underlying the site is not impacted by the Stage 2 operations.

It is noted that the Aurecon (2010) report provides a number of recommendations with respect to groundwater management for Delta Electricity's consideration.

### **6.1.3 Surface Water Quality Monitoring (CoA 3.5)**

In preparing this report, an Aurecon report titled *KVAD Stage II Water Quality Assessment October 2007 to March 2010* (ref: Final Draft, 18 June 2010, report ref: 208562) was sighted and reviewed. The purpose of the assessment undertaken by Aurecon was to assess the effects of a) the initial Stage II dry ash placement, in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.

The following text has been extracted from the Aurecon (2010) report in relation to surface water (reference Section 6 Conclusions):

*The current, Stage II, water quality in receiving waters and changes from pre-Stage I to the initial Stage II placement were examined in terms of the likely effects of the groundwater beneath Stage II and seepage from the SSCAD on water quality in Sawyers Swamp Creek. These effects were put into the context of poor water quality in the area, which is unrelated to the dry ash placement. From this, the following conclusions were drawn on the overall effects of the groundwater beneath Stage II and the SSCAD seepage on receiving water quality.*

*With respect to the effects of the groundwater beneath Stage II:*

- *Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to:*
  - ▶ *Limited rainfall infiltration into the groundwater due to the dry ash itself and compaction by machinery.*
  - ▶ *Placement of the dry ash on the clay capping of the KVAD and its limited permeability.*
  - ▶ *The highly mineralised nature of the catchment and effects of the blocked KVAD toe drains.*
  - ▶ *Attenuation of selenium in ash leachate by uptake by local soils or mine spoil.*



While not the focus of this AEMR, the Aurecon (2010) report provided the following conclusions regarding the effects of Sawyers Swamp Creek Ash Dam seepage on local groundwater and water quality in Sawyers Swamp Creek:

*Effects of the Sawyers Swamp Creek Ash Dam seepage on local groundwater and water quality in Sawyers Swamp Creek:*

- *No significant effects on the water quality in the local groundwater other than an increase in boron at bore WGM1/D4, which remained below the local goal.*
- *High concentrations of iron and manganese in the local groundwater, that did not originate from the ash dam, but which could have been mobilised from the highly mineralised local soils by the ash dam seepage flows under the dam wall.*
- *An increase in boron concentration in the Sawyers Swamp Creek, which is already elevated above the local goal due to the mineralised conditions of the catchment.*
- *An increase in salinity in Sawyers Swamp Creek, which remained below ANZECC (2000) guidelines.*
- *No significant selenium effects on receiving waters of the Sawyers Swamp Creek Ash Dam.*

*The increase in salinity and boron in the creek are expected to be reversed following the installation of the Sawyers Swamp Creek Ash Dam seepage pump-back system.*

*Salinity increases and trace metal decreases in the ash dam pond were due to the change in ash placement process from wet to dry. The salinity increased due to concentration in the residual pond with the unavoidable reduction in flushing following the cessation of wet ash placement and the diversion of freshwater inflows to minimise overflows. Conversely, trace metals and elements in the pond decreased because there was no more leaching of these elements from slurred ash.*

Based on the Aurecon (2010) assessment it appears that the water quality within Sawyers Swamp Creek is not impacted by Stage 2 operations.

It is noted that the Aurecon (2010) report provides a number of recommendations with respect to surface water management for Delta Electricity's consideration

#### **6.1.4 Hydrological Monitoring (CoA 3.6)**

Delta representatives have advised that there are no longer any plans to realign Sawyers Swamp Creek. As such, hydrological monitoring as required by Condition of Approval 3.6 is not required.

#### **6.1.5 Ecological Monitoring (CoA 3.7)**

Delta representatives have advised that there are no longer any plans to realign Sawyers Swamp Creek. As such, ecological monitoring as required by Condition of Approval 3.7 is not required.

#### **6.1.6 Air Quality Monitoring (CoA 3.8)**

Malfroy Environmental Strategies Pty Ltd (MES) was engaged by Delta Electricity to review the air quality monitoring data collected during the first year of Kerosene Vale Stage 2 Ash Repository operations (April 2009 – March 2010) and to report on the results against the requirements of the OEMP.

The following information has been extracted from the MES (2010) report *Kerosene Vale Ash Repository Stage 2 – Air Quality Review – April 2009 – March 2010*.

### **OEMP Dust Gauge Locations**

*The approximate distances of the existing OEMP dust gauges from the nearest Kerosene Vale Ash Repository Stage 2 boundary are as follows:*

- Gauge 5, 1000m from Kerosene Vale Stage 2 Ash Repository.
- Gauge 27, 1500m from Kerosene Vale Stage 2 Ash Repository.
- Gauge 28, 1900m from Kerosene Vale Stage 2 Ash Repository.
- Gauge 29, 50m from Kerosene Vale Stage 2 Ash Repository.
- Gauge 30, 800m from Kerosene Vale Stage 2 Repository.

*The OEMP specifies 5 existing dust gauges and 2 new gauges. The 2 new gauges have yet to be installed.*

*While not required by the OEMP, the contractor undertaking the ash placement works (Bilfinger Berger Services) maintains a network of 9 dust gauges located on the perimeter of Kerosene Vale Stage 2 Ash Repository, inside the working area of the repository and at the silo at Wallerawang Power Station where ash is conditioned and transferred to truck for transport to the repository.*

### **Results**

*During late September 2009 and particularly on the 23 and 26, much of eastern Australia experienced severe dust storms and the impact of these storms are evident in the September and October dust gauge data. The dust gauges were serviced on the 25 September, so the event of the 26 of September is included in the October dust gauge data.*

*With the September and October dust storm data excluded, only Gauge 27 recorded an annual average depositional rate exceeding the criteria of 4 (and 6) g/m<sup>2</sup>/month. Gauge 27 is located about 1,500 m from the Kerosene Vale Stage 2 Ash Repository, on Wallerawang Power Station land and in close proximity to a live coal storage area – which is located between Kerosene Vale Stage 2 Ash Repository and the dust gauge. The elevated results recorded at Gauge 27 are most unlikely to be significantly affected by remissions (sic – emissions) from Kerosene Vale Stage 2 Ash Repository.*

*The OEMP also requires the data to be assessed against the baseline data provided in Table D of Appendix C. Excluding the September and October dust storm data, the average dust levels at OEMP gauges vary from year-to-year, as expected. For 4 of the 5 gauges, deposition rates in the first year of Kerosene Vale Stage 2 Ash Repository operations were within the range recorded in previous years. The results do not indicate any change due to Kerosene Vale Stage 2 Ash Repository operations, particularly at Gauge 29 which is closest to Kerosene Vale Stage 2 Ash Repository. Results from Gauge 29 during the first year of Kerosene Vale Stage 2 Ash Repository were the third lowest of the 8 years 2002-2009-10.*

*It is considered that OEMP gauges 5, 27, 28 and 30 are too far away to provide data relevant to assessing Kerosene Vale Stage 2 Ash Repository impacts. Gauge 5 might be considered to provide “background” data but the only use for Gauge locations 27 and 28 should be to monitor potential dust deposition from Wallerawang Power Station’s coal stack.*



*The data from the depositional dust gauges maintained by Bilfinger Berger Services are considered to provide a more comprehensive assessment of potential dust impacts from Kerosene Vale Stage 2 Ash Repository. The results demonstrate that gauges located at the perimeter of the Kerosene Vale Stage 2 Ash Repository and to the west of the site (1, 4, 7) nearer residential areas recorded annual average deposition rates below  $4\text{g/m}^2/\text{month}$  (as an average and with September 2009 data excluded i.e. dust storm event). Excluding the September data, only two monthly results from these gauges exceeded  $6\text{g/m}^2/\text{month}$ .*

## 6.2 Operation Environmental Management Plan

The project's approved OEMP incorporates seven topic specific management sub plans covering the following as well as sections covering inspection and audits:

- Ash Delivery and Placement.
- Operational Noise and Vibration.
- Surface Water Quality.
- Groundwater Management.
- Air Quality.
- Landscape and Revegetation.
- Waste Management.

Each topic specific management sub plan consists of overarching target(s) and a series of management and mitigation measures. In reviewing the environmental performance of the project an assessment was undertaken to determine whether the overarching target(s) were being met and whether the management and mitigation measures were being implemented.

Detailed review checklists for each management sub plan are presented in Appendix B.

### 6.2.1 Ash Delivery and Placement

Based on the information reviewed and the site observations made, the operations of the Stage 2 Kerosene Vale Ash Repository are meeting the following targets of the Ash Delivery and Placement Sub Plan of the OEMP:

- Compliance with the normal hours of operation condition for at least 98% of the year and its stretch target of 100% of the year.
- Reduction in the number of days operating under emergency conditions (less than 5 days/year and its stretch target of 0 days/year).
- Compliance with the ash placement and compaction procedures.

At this point in time, it is not possible to determine whether or not Delta is on track to achieve an ash re-use target of 20% or its stretch target of 40% by 2013.

With respect to the management and mitigation measures specified in the approved OEMP, the majority of the OEMP requirements were found to be complied with. Two non-conformances were identified.

The first non-conformance relates to the requirement for Delta to undertake a review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation. The review is to be undertaken and lodged with the Director-General DoP following the commencement of operations. Reference should be made to the observations made with respect to Condition of Approval 2.9.

The second non-conformance relates to the requirement for Delta to prepare a long-term ash management strategy and submit it to the Director-General DoP within six months of the commencement of operations. Reference should be made to the observations made with respect to Conditions of Approval 2.1.

## 6.2.2 Operational Noise and Vibration

Based on the findings of the Stage 2 Kerosene Vale Ash Repository Operational Noise Review (dated September 2009) the operations of the Stage 2 Kerosene Vale Ash Repository were found to meet the OEMP target of achieving compliance with the noise criterion of  $L_{Aeq}$  of 40dB(A) at the nearest most affected receiver during normal operations.

This AEMR covers the first year of ash placement operations (April 2009 to March/April 2010). During this period there have been no emergency operations as defined by the Project Approval and associated Conditions of Approval. As such, the operations of the Stage 2 Kerosene Vale Ash Repository were found to meet the OEMP target of achieving a significant reduction in the number of noise-related complaints during emergency operations (less than 5 per year, stretch target = zero).

With respect to the management and mitigation measures specified in the approved OEMP, the majority of the OEMP requirements were found to be complied with.

One non-conformance was identified. This non-conformance relates to the need for ongoing operational noise monitoring to be undertaken in accordance with OEMP requirements (Section 5.2 Environmental Monitoring Program & Section 6.4 Noise and Vibrations Management Plan) as well as the recommendations made in the Stage 2 Kerosene Vale Ash Repository Noise Review (Section 9 Recommendations).

## 6.2.3 Surface Water Quality

Based on the information reviewed and the site observations made, the operations of the Stage 2 Kerosene Vale Ash Repository are meeting the target of zero environmental incidents that relate to pollution of waters at Sawyers Swamp Creek.

The Aurecon (2010) report titled *KVAD Stage II Water Quality Assessment October 2007 to March 2010* indicates that their *preliminary assessment of the Stage II placement effects showed that rainwater had infiltrated beneath the Stage II dry ash and had leached some trace metals and elements from the flyash. However, the groundwater was apparently held above the Kerosene Vale Ash Dam clay capping due to its relatively low permeability. This effectively limited the movement of the groundwater off-site, so that the assessment of effects on receiving water quality, including selenium, shown no significant effects, or that the effects were undetectable against the highly modified catchment conditions*".

Based on the Aurecon (2010) assessment it appears that the water quality within Sawyers Swamp Creek is not impacted by Stage 2 operations.



With respect to the management and mitigation measures specified in the approved OEMP, the majority of the OEMP requirements were found to be complied with. Two non-conformances were identified in relation to OEMP requirements. The first non-conformance was that the 25 ML Storage Pond has not been established. The second non-conformance was that two surface water monitoring sites in Sawyers Swamp Creek had not been established. It should be noted that the Aurecon (2010) report was able to use an existing surface water monitoring site in Sawyers Swamp Creek (WX7) in lieu of the two additional surface water monitoring sites.

It is noted that the Aurecon (2010) report provides a number of recommendations with respect to surface water quality management for Delta Electricity's consideration.

#### 6.2.4 Groundwater Management

The Aurecon (2010) report titled *KVAD Stage II Water Quality Assessment October 2007 to March 2010* indicates that:

*The dry ash placement management has mainly involved limiting rainfall infiltration and reducing seepage from the KVAD into the local groundwater. The effectiveness of these activities has been demonstrated by improved water quality in the local groundwater during the Stage I placement from 2003 to 2006, before the toe drains (of the Kerosene Vale Ash Dam) became blocked. Examination of the processes determining groundwater quality showed that the improved water quality was due to reduced KVAD seepage relative to background groundwater flows.*

*The current, Stage II, water quality in receiving waters and changes from pre-Stage I to the initial Stage II placement were examined in terms of the likely effects of the groundwater beneath Stage II and seepage from the SSCAD on water quality in Sawyers Swamp Creek. These effects were put into the context of poor water quality in the area, which is unrelated to the dry ash placement. From this, the following conclusions were drawn on the overall effects of the groundwater beneath Stage II and the SSCAD seepage on receiving water quality.*

*With respect to the effects of the groundwater beneath Stage II:*

- *Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to:*
  - ▶ *Limited rainfall infiltration into the groundwater due to the dry ash itself and compaction by machinery.*
  - ▶ *Placement of the dry ash on the clay capping of the KVAD and its limited permeability.*
  - ▶ *The highly mineralised nature of the catchment and effects of the blocked KVAD toe drains.*
  - ▶ *Attenuation of selenium in ash leachate by uptake by local soils or mine spoil.*

Based on the preliminary assessment undertaken by Aurecon (2010), it appears that the quality of the groundwater underlying the site is not impacted by the Stage 2 operations. It is noted that the Aurecon (2010) report provides a number of recommendations with respect to groundwater management for Delta Electricity's consideration.

The majority of the OEMP requirements with respect to groundwater quality were found to be complied with. With respect to non-conformances, this review has identified that the OEMP requirement that two new groundwater monitoring bores down-gradient to the north of the ash repository and one new up-gradient well shall be constructed has not been complied with. However, the Aurecon (2010) report provides recommendations for Delta's consideration in relation to the use of existing bores.

### **6.2.5 Air Quality**

Based on the MES Report (Draft, June 2010) titled Kerosene Vale Ash Repository Stage 2 – Air Quality Review – April 2009 – March 2010, the dust gauge data from the first year of KVAR2 operations do not indicate that KVAR2 operations have resulted in dust deposition above the OEMP levels that trigger the requirement to implement additional control measures. A comparison (undertaken by MES) of dust data from the first year of operation of KVAR2 with data collected in previous years showed no indication of an increase in dust deposition levels, particularly at Gauge 29, the closest to KVAR2.

Based on the information reviewed, there was only one dust related complaint associated with the operations of the Stage 2 KVAR. This complaint was addressed to the satisfaction of the complainant.

The majority of the OEMP requirements with respect to air quality were found to be complied with.

With respect to non-conformances, this review has identified that the OEMP requirement for the two additional dust depositional gauges has yet to be enacted. It is noted that the MES (2010) report provides a number of recommendations with respect to air quality management for Delta Electricity's consideration.

### **6.2.6 Landscape and Revegetation**

It should be noted that the Stage 2 Kerosene Ash Repository has been in operation for just over 12 months and as such the placement of ash has yet to reach the design RL (940 mAHD) required for the commencement of extensive rehabilitation (i.e. landscaping and revegetation).

Based on the information reviewed and the site observations made, the interim landscaping/revegetation activities undertaken are considered in line the OEMP target given the project's progress to date.

The majority of the OEMP requirements with respect to landscaping/revegetation were found to be not applicable given that the placement of ash has yet to reach the design RL (940 mAHD). No non-conformances were identified.

### **6.2.7 Waste Management**

Based on the information reviewed and site observation made, the operations of the Stage 2 Kerosene Vale Ash Repository meet the OEMP targets for waste management.

The majority of the OEMP requirements with respect to waste management were found to be complied with. No non-conformances were identified with respect the OEMP requirements relating to waste management.



### 6.2.8 Inspections and Audits

Delta representatives have advised that they have not yet established their internal auditing schedule.

The project OEMP provides guidance on inspections and audits to be undertaken during the operation of the Stage 2 Kerosene Vale Ash Repository. The specific sections of the OEMP that deal with inspections and audits are:

- Section 3.7.1 Environmental Inspections
- Section 3.8 Environmental Audits

Inspections and reviews currently undertaken by Delta include the following:

- Daily Inspection undertaken by the Delta's Contract Administrator. This daily inspection covers the following aspects of operations:
  - ▶ Weather conditions
  - ▶ People and Safety
  - ▶ Dust Suppression
  - ▶ Compaction
  - ▶ Surface Water Run-off
  - ▶ Corrective Actions
- Monthly review of the project's overall progress and performance based on the Monthly Client Service Report prepared by Bilfinger Berger Services. The Monthly Client Service reports includes a section addressing environmental matters which covers the following aspects of operations:
  - ▶ Ash placement
  - ▶ Hours of operation
  - ▶ Ash reuse
  - ▶ Noise
  - ▶ Sawyers Swamp Creek
  - ▶ Groundwater levels
  - ▶ Dust
  - ▶ Ash moisture
  - ▶ Field compaction and Compaction
  - ▶ Daily checklist (as performed by Delta's Contract Administrator)
  - ▶ Surface water management
  - ▶ Wind – dust suppression

- ▶ Site areas
- ▶ Site water usage
- ▶ Catchment water quality (within ash placement area only)
- ▶ Surface water, ash conditioning water and sprinkler water quality (pH and EC)
- ▶ Revegetation
- ▶ Stack stability
- ▶ Survey
- ▶ Site management

### **6.3 Environmental Assessment Impacts and Performance Predictions**

Chapter 16 of the Environmental Assessment (Justification and Residual Risk) made the following assessment *“Against the benefit of ongoing electricity production the following key potential environmental impacts have been identified in association with the proposal:*

- *Noise impacts on the local community.*
- *Aquatic ecology impacts associated with the realignment of Sawyers Swamp Creek.*
- *Water quality impacts.*
- *Dust and air emission impacts.*

*The EA and design process has identified proposed mitigation and management measures to mitigate these impact”.*

#### **6.3.1 Noise Impacts**

Based on the site observations made and the information reviewed the potential noise impacts from the operation of the Kerosene Vale Stage 2 Ash Repository have been effectively mitigated and managed.

#### **6.3.2 Aquatic Ecology Impacts**

As previously noted, Delta Electricity have advised that there are no longer any plans to realign Sawyers Swamp Creek. As such the aquatic ecological impacts associated with the creek re-alignment will not eventuate.

#### **6.3.3 Water Quality Impacts**

Based on the site observations made and the information reviewed the potential water (i.e. groundwater and surface water) impacts from the operation of the Kerosene Vale Stage 2 Ash Repository have been effectively mitigated and managed.

#### **6.3.4 Dust and Air Impacts**

Based on the site observations made and the information reviewed the potential dust/air impacts from the operation of the Kerosene Vale Stage 2 Ash Repository have been effectively mitigated and managed.

## 7. Conclusions

Based on the site observations made, information reviewed and the assessment of compliance undertaken, it is considered that the project has been carried out generally in accordance with the requirements of the Conditions of Approval and the OEMP. In addition, it is considered that the project is complying with the relevant requirements of Delta Electricity's Environment Protection Licence (No. 766 – Wallerawang Power Station).

The project's Environmental Assessment made the following assessment (ref: Chapter 16 – Justification and Residual Risk) *"Against the benefit of ongoing electricity production the following key potential environmental impacts have been identified in association with the proposal"*:

- *Noise impacts on the local community.*
- *Aquatic ecology impacts associated with the realignment of Sawyers Swamp Creek.*
- *Water quality impacts.*
- *Dust and air emission impacts.*

*The EA and design process has identified proposed mitigation and management measures to mitigate these impacts".*

Based on the site observations made and the information reviewed, the potential noise, water and dust/air impacts from the operation of the Kerosene Vale Stage 2 Ash Repository have been effectively mitigated and managed.

As previously noted, Delta Electricity has advised that there are no longer any plans to realign Sawyers Swamp Creek. As such, the aquatic ecological impacts associated with the creek re-alignment will not eventuate.

A number of non-compliances/non-conformances were identified by the review undertaken against the Conditions of Approval and requirements of the OEMP. In preparing this Annual Environmental Management Report, recommendations to address the non-compliances/non-conformances have been presented to Delta Electricity for their consideration. In addition, Delta Electricity has engaged a number of specialist consultants to prepare specialist reports that have been sighted and reviewed in preparing this Annual Environmental Management Report. These specialist reports also provide recommendations for Delta Electricity's consideration.



## 8. Recommendations

The following recommendations are provided for Delta Electricity's consideration based on the observations made and the information reviewed in preparing this Annual Environmental Management Report.

It should be noted that in response to the findings and the recommendations of this report, Delta Electricity has developed an action plan titled *KVAR EMR Audit – Actions Relating To Partial Compliances and Non-Conformances*. A copy of this action plan is provided in Appendix C.

**Recommendation** – (ref MCoA 2.1) Delta Electricity to formally advise Director-General DoP as to the status of its long-term ash management strategy in accordance with the requirements of MCoA 2.1.

At this point in time, it is not possible to determine whether or not Delta is on track to achieve an ash re-use target of 20% by 2013 or its stretch target of 40% by 2013.

**Recommendation** – (ref MCoA 2.8) Time entries on BBS Daily Operational Timesheets should be in a standardised format eg 7.00am and 10.00pm or 0700 and 2200.

**Recommendation** – (ref MCoA 2.9) A report (ie review of logistical arrangements for ash haulage and placement to determine the feasibility of reducing hours of operations) needs to be prepared and submitted to Director-General DoP as it was not submitted by the required date of October 2009.

**Recommendation** – (ref MCoA 3.3) Delta to make arrangements for ongoing operational noise monitoring as per the OEMP requirements and recommendations made in the Stage 2 Kerosene Vale Ash Repository Operational Noise Review. This recommendation has linkages to MCoAs 2.18, 2.19 and 2.20.

**Recommendation** - (ref waste management) Delta to consider conducting security patrols of the Stage 2 KVAR outside of the normal operational hours to deter persons from illegally dumping waste at the Kerosene Vale Ash Repository area.

**Recommendation** – (ref environmental inspections) Consideration should be given to expanding the scope of the daily inspection performed by Delta's Contract Administration to address all of the specific potential impacts detailed in Table 4.8 of the OEMP.

**Recommendation** – (ref: tracking of OEMP requirements) Delta to create an internal compliance tracking and reporting process for OEMP specifics in particular the following:

- Environmental Inspection - Section 3.7.1 and Table 3-2.
- Environmental Audits – Section 3.8.
- Table 5-2 Environmental Monitoring Programs.
- Table 6-1 Environmental Targets and Performance Indicators.
- Environmental Management Sub-Plans (Section 6.2).

This tracking and reporting should be performed at a frequency of monthly or every second month.

This recommendation is to ensure the approved OEMP is implemented. It is noted that the BBS Monthly Client Service Report will/may address some aspects of the above listed OEMP sections but they may not be responsible for others aspects which are Delta's responsibility.



**Recommendation** – (ref MCoA 5.1) – The Delta Electricity web site for the Kerosene Vale Stage 2 Ash Repository to provide a direct link to the DoP project page:

[http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=826](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=826)

Or alternatively, provide downloadable versions of the following documents on the Delta Electricity web site:

- Major Project Application 07\_0005.
- Kerosene Vale – Stage 2 Ash Repository Area (two volumes) – Environmental Assessment prepared by Parsons Brinckerhoff and dated 1 April 2008.
- Kerosene Vale – Stage 2 Ash Repository Area – Submissions Report prepared by Parsons Brinckerhoff and dated 30 May 2008.
- Project Approval (Conditions of Approval) File S07/00001, dated 26 November 2008.

Annual Environmental Management Report (April 2009 – April 2010) when completed and approved by the Director-General DoP be provided on the Delta Electricity web site.

Delta Electricity web site to provide a regular update on operational progress of KVAR Stage 2 and construction activities (if any).

This recommendation has linkage to MCoA 5.2.

**Recommendation** (ref: MCoA7.3d) – Delta Electricity to provide a copy of the Aurecon (2010) and Malfroy Environmental Services (2010) reports to DoP as supporting documentation to this AEMR to comply with the requirement to provide “results of all environmental monitoring required under conditions 3.3 to 3.8 of this approval, including interpretations and discussion by a suitably qualified person”.

#### **Recommendation - Specialist Reports**

Delta Electricity has engaged a number of consultants to prepare specialist reports that have been sighted and reviewed in preparing this Annual Environmental Management Report.

These reports provide a number of recommendations for Delta Electricity's consideration. To facilitate future Annual Environmental Management Reports, Delta Electricity should document those recommendations it adopts as well as documenting reasons for those recommendations not adopted.

A number of the project's Conditions of Approval require the provision of periodic reporting of results to various government agencies, in particular:

- Noise – Condition of Approval 6.5a(vii) – provisions for the periodic reporting of results to DECC.
- Groundwater – Condition of Approval 6.5b(vi) – provisions for the periodic reporting of results to the SCA.
- Surface Water – Condition of Approval 6.5c(viii) – provisions for the periodic reporting of results to the DPI (Fisheries) and the SCA.
- Air – Condition of Approval 6.5d(ix) – provisions for the periodic reporting of results to the DECC.
- In accordance MCoA 7.3d which states “results of all environmental monitoring required under conditions 3.3 to 3.8 of this approval, including interpretations and discussion by a suitably qualified person” must be included as part of the Annual Environmental Management Report.

Given the above requirements, it is recommended that Delta Electricity forward the following reports to the nominated government agencies:

- Aurecon (2010) report titled *KVAD Stage II Water Quality Assessment October 2007 to March 2010* ref: 208652 – this report should be submitted to SCA and DPI (Fisheries).
- Malfroy Environmental Strategies (2010) report titled *Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 – March 2010* – this report should be submitted to DECC.

In addition, both reports should be provided to the Department of Planning as supporting documentation for the Annual Environmental Management Report in accordance with Condition of Approval 7.3d.

#### **Recommendation – Overarching**

Given that the Kerosene Vale Stage 2 Ash Repository has been in operation for at least one year, it provides Delta Electricity the opportunity to review and revise the project's approved OEMP against the following:

- Activities and management systems employed by the Contractor (Bilfinger Berger Services) and those of Delta Electricity.
- The findings and recommendations of specialist reports such as the Aurecon (2010) report titled *KVAD Stage II Water Quality Assessment October 2007 to March 2010* and Malfroy Environmental Strategies (2010) report titled *Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 – March 2010*.
- Observations and recommendations provided in this Annual Environmental Management Report.

It should be noted that any revision of the OEMP and its management sub plans will require consultation with the Department of Planning and other government agencies as detailed in the Project Approval.

If such a review is undertaken, it may also assist Delta Electricity to identify possible amendments to the Conditions of Approval for discussion with the Department of Planning.



## **9. Statement of Limitations**

### **9.1 Scope of services**

This Annual Environmental Management Report (the report) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and PB (scope of services). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

### **9.2 Reliance on data**

In preparing the report, PB has relied upon data, surveys, analyses, designs, plans, specialist reports and other information provided by the client and other individuals and organisations, most of which are referred to in the report (the data). Except as otherwise stated in the report, PB has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (conclusions) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. PB will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to PB.

### **9.3 Environmental conclusions**

In accordance with the scope of services, PB has relied upon the data and has not conducted any environmental field monitoring or testing in the preparation of the report. The conclusions are based upon the data and visual observations and are therefore merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of contaminants or emissions.

Within the limitations imposed by the scope of services, the preparation of this report has been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

### **9.4 Report for benefit of client**

The report has been prepared for the benefit of the client and no other party. PB assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of PB or for any loss or damage suffered by any other party in relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

## 9.5 Other limitations

PB will not be liable to update or revise the report to take into account any events, emergent circumstances or facts occurring or becoming apparent after the date of the report.

The scope of services did not include any assessment of the title to nor ownership of the properties, buildings and structures referred to in the report, nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

## **Appendix A**

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Detailed review checklist for  
Conditions of Approval



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.1</b>
<i>The Proponent shall prepare a long-term ash management strategy including a program for investigation and assessment of alternative ash management measures with a goal of 40% reuse of ash by 31 December 2012. The report shall be submitted to the Director-General within six months of the commencement of operations. The Proponent shall report on the status and outcomes of its investigations to the Director-General every two years from the commencement of the operation of the project, unless otherwise agreed by the Director-General.</i>
<b>Compliance Assessment Observations and Comments</b> <p>The project commenced in April 2009. A long-term ash management strategy (i.e. a report) was required to be submitted to the Director-General DoP within six months of the commencement of operations (ie by October 2009). Delta Electricity advised that no formal strategy (i.e. a report) exists or has been submitted to the Director-General DoP.</p> <p>Delta Electricity Representative (Asset Manager – External Plant) was able to provide the following commentary regarding their long-term ash management strategy:</p> <ul style="list-style-type: none"><li>• The responsibility for the development of a long term ash management strategy has recently been assigned to Delta Electricity's General Manager Development, which is a corporate position as opposed to a project/facility based role.</li><li>• In January 2010 Delta Electricity received a proposal from DMC Advisory Pty Ltd regarding a proposed strategy development of aggregates and other bulk use applications of fly ash. Delta has engaged DMC Advisory Pty Ltd to undertake their proposed work.</li><li>• Delta Electricity is supporting a research program being conducted by Curtin University regarding ash reuse.</li><li>• Delta Electricity is currently assessing whether to support a research program proposed by the University of Wollongong which will look at fly ash reuse in cement products.</li><li>• Delta is currently in partnership with Vecor as part of a preliminary assessment of a block making plant within the grounds of Wallerawang Power Station, that would use ash as a key input.</li><li>• On 1 December 2009 Delta Electricity was represented at Power Station Ash Management conference held in the Hunter Valley.</li></ul> <p>At this point in time the project been in operation for approximately one year and as such the two yearly update required by the Director-General DoP is not yet required.</p>
<b>Compliance Assessment Finding</b> <p><b>Non-Compliance</b> – A report (ie long-term ash management strategy) has not been submitted to the Director-General of DoP by the required date of October 2009.</p>

## Project Approval - (Minister's Conditions of Approval) Checklist

### MCoA 2.9

*Within six months of commencement of operation of the project, the Proponent shall prepare and submit to the Director-General a review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation. If, as a result of the review, it is determined that ash haulage and placement times can commence later and/or finish earlier, the Proponent shall aim to observe the reduced hours whenever possible.*

#### **Compliance Assessment Observations and Comments**

The project commenced in April 2009. A review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation was required to be submitted to the Director-General of DoP within six months of the commencement of operations (ie by October 2009). Delta Electricity advised that no formal review has been undertaken since the commencement of operations.

After project approval was obtained (ie 26 November 2008) and prior to the commencement of operations (ie April 2009), Delta Electricity engaged Australia Cost Planners Pty Ltd to undertake a review of ash haulage operations at the Wallerawang Power Station. The report prepared is dated 30 January 2009 (ref: File Reference: 1933). The report assessed the current haulage of furnace and fly ash, in particular the capacity constraints of the haulage operations. The report concluded that *"any reduction in the operational hours would have the effect of initially delaying the transport of ash at the expense of slightly higher truck movements after the hour of 8am. Effectively any change in time will concentrate truck movements and associated noise over a later time frame"*.

Delta have also built a second silo to increase fly ash storage capacity in order to ensure that truck movements associated with ash haulage and placement comply with the approved working hours.

It should be noted that the Environment Protection Licence (No. 766) held by Delta Electricity for the Wallerawang Power Station specifies (re: cause L7.1) that operational activities associated with the Kerosene Vale Ash Repository must only be carried out between the hours of 0700 and 2200 Monday to Sunday.

#### **Compliance Assessment Finding**

**Non-Compliance** – A report (i.e. review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation) has not been prepared and submitted to the Director-General of DoP by the required date of October 2009.



**Project Approval - (Minister's Conditions of Approval) Checklist**

**MCoA 2.18**

*Where noise monitoring (as required by conditions 3.2 or 3.3 of this approval) identifies any non-compliance with the operational noise criterion specified under condition 2.15 of this approval the Proponent shall prepare and submit to the Director-General for approval a report including, but not limited to:*

- a) An assessment of all reasonable and feasible physical and other mitigation measures for reducing noise at the source including, but not limited to –*
  - i. Construction of a noise barrier along the haulage routes,*
  - ii. Alternative ash haulage routes, and*
  - iii. Alternative methods of ash conveyance to the repository; and*
- b) Identification of the preferred measure(s) for reducing noise at the source;*
- c) Feedback from directly affected property owners and the DECC on the proposed noise mitigation measures; and*
- d) Location, type, timing and responsibility for implementation of the noise mitigation measure(s).*

*The report is to be submitted to the Director-General within 60 days of undertaking the noise monitoring which has identified exceedances of the operational noise criterion specified under Condition 2.15, unless otherwise agreed to by the Director-General. The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Director-General.*

**Compliance Assessment Observations and Comments**

**Condition 3.2** relates to the requirement for an Operational Noise Review. The noise criterion associated with the Operational Noise Review is specified in Condition 2.15. The Operational Noise Review demonstrated compliance with the operational noise criterion.

In assessing compliance with this condition of approval, the findings of the Stage 2 Kerosene Vale Ash Repository Operational Noise Review (ref: Parsons Brinckerhoff, 2116987A, PR\_0805, September 2009) have been drawn upon. The statement of compliance from the operational noise review is as follows:

*Measured noise levels during May and August 2009 indicate Stage 2 operations are generally compliant with the operational noise criteria. Potential exceedance by up to 2.5 dB(A) has been identified at Location B Skelly Road during 3 discrete 15-minute monitoring events. Measured Stage 2 noise levels are influenced by all ambient noise sources.*

*During neutral meteorological conditions full compliance with the operational noise criteria has been determined during the day time and evening periods at all nearest receiver locations.*

*Compliance with the operational noise goal is achieved at all receivers during neutral and potential prevailing noise enhancing meteorological conditions where peak day time and evening period fly ash truck movements do not exceed 5 trucks per 15-minute period.*

*During worst case operational conditions of day time or evening peak day time fly ash truck movements greater than 5 trucks per 15-minute period:*

- *potential operational criteria exceedance up to 0.5 dB(A) at Location B Skelly Road and 1.5 dB(A) at Location C Neubeck Street for day time operations of prevailing source to receiver wind speed 3m/s or greater, or temperature inversions where source to receiver prevailing*



*wind speed exceeds 1m/s*

- *potential operational criteria exceedance up to 0.5 dB(A) at Location C Neubeck Street of prevailing source to receiver wind speeds of 3m/s or greater, or temperature inversions inclusive of prevailing source to receiver wind speed of 2m/s.*
- *In accordance with the NSW INP, analysis of meteorological data has determined, prevailing source to receiver noise enhancing wind gradient and temperature inversion conditions are not considered to be a feature for the area.*

Delta Electricity representatives advised that they have not entered into any negotiated agreement in regard to noise with any potentially affected landowner.

Delta Electricity representatives advised that since the Stage 2 Kerosene Vale Ash Repository Operational Noise Review no further noise monitoring has been undertaken.

**Condition 3.3** relates to the preparation and implementation of an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in condition 2.15, throughout the life of the project. It is noted that the Operational Noise Monitoring Program shall form part of the Operational Noise Management Plan which is a requirement of the Operational Noise Management Plan (OEMP).

The Project's approved OEMP provides guidance as to the required Operational Noise Monitoring Program in the following sections:

- Section 5.2 Environmental Monitoring Program (Table 5-1, Noise – Normal Conditions).
- Appendix A: KVAR Stage 2 Operations, Operational Noise and Vibration Management Plan Section 7.2 Ongoing Operational Noise Monitoring (COA 3.3).

The Stage 2 Kerosene Vale Ash Repository Operation Noise Review made the following recommendation with respect to ongoing operational noise monitoring:

- *To minimise potential for noise impact creep and to preserve acoustic amenity at the nearest receivers, noise management measures have been recommended, including – “as required by CoA 3.3 and as part of due diligence practice, routine monitoring of ambient noise levels will be undertaken in the surrounding environment at a 6 monthly frequency or when peak Stage 2 fly ash operations are increased from typical existing daily movements”.*

As the Stage 2 Kerosene Vale Ash Repository Operation Noise Review was completed in September 2009, it can be reasonable expected that the first 6 monthly operational noise monitoring event would have been undertaken in March 2010.

At the time that this AEMR was being prepared, there was no evidence of ongoing operational noise monitoring being undertaken.

#### **Compliance Assessment Finding**

Complies with respect to the requirements of MCoA 3.2 – Operational Noise Review.

**Non-conformance** with respect to the requirement of MCoA3.3 to undertake ongoing operational noise monitoring.

Project Approval - (Minister's Conditions of Approval) Checklist

<p><b>MCoA 3.3</b></p> <p><i>The Proponent shall prepare and implement an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in condition 2.15 of this approval, throughout the life of the project. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the DECC.</i></p> <p><i>The noise monitoring program shall be prepared in accordance with the requirements of the New South Wales Industrial Noise Policy (EPA, 2000) and must include, but not be limited to:</i></p> <ul style="list-style-type: none"> <li><i>a) Monitoring during ash placement in the far western area of the site adjacent to the haul road; and</i></li> <li><i>b) Monitoring of the effectiveness of any noise mitigation measures implemented under condition 2.18 of this approval, against the noise criterion specified in condition 2.15 of this approval.</i></li> </ul> <p><i>Noise from the project is to be measures at the most effected point on or within the residential boundary, or at the most affected point within 30 m of a dwelling where the dwelling is more than 30 meters from the boundary, to determine compliance with the noise criterion stipulated in conditions 2.15 of this approval. Where it can be demonstrated that direct measurement of noise from the project is impractical, the DECC may accept alternative means of determining compliance (see chapter 11 of the NSW Industrial Noise Policy). The modification factors in Section 4 of the NSW Industrial Noise Policy shall also be applied to the measured noise levels where applicable. The proponent shall forward to the DECC and the Director-general a report containing the results of an non-compliance within 14 days of conducting a noise assessment.</i></p> <p><i>Where monitoring indicates noise levels in excess of the operational noise criterion specified in condition 2.15 of this approval, the Proponent shall prepare a report as required by condition 2.18 of this approval.</i></p> <p><i>The monitoring program shall form part of the Operation Noise management Plan referred to in condition 6.5a) of this approval.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Delta Electricity representatives advised that since the Stage 2 Kerosene Vale Ash Repository Operational Noise Review no further noise monitoring has been undertaken.</p> <p><b>Condition 3.3</b> relates to the preparation and implementation of an Operational Noise Monitoring Program to assess compliance against the operational noise criterion stipulated in condition 2.15, throughout the life of the project. It is noted that the Operational Noise Monitoring Program shall form part of the Operational Noise Management Plan which is a requirement of the Operational Noise Management Plan (OEMP).</p> <p>The Project's approved OEMP provides guidance as to the required Operational Noise Monitoring Program in the following sections:</p> <ul style="list-style-type: none"> <li>▪ Section 5.2 Environmental Monitoring Program (Table 5-1, Noise – Normal Conditions).</li> <li>▪ Appendix A: KVAR Stage 2 Operations, Operational Noise and Vibration Management Plan Section 7.2 Ongoing Operational Noise Monitoring (COA 3.3).</li> </ul> <p>The Stage 2 Kerosene Vale Ash Repository Operation Noise Review made the following recommendation with respect to ongoing operational noise monitoring:</p> <ul style="list-style-type: none"> <li>▪ <i>To minimise potential for noise impact creep and to preserve acoustic amenity at the nearest</i></li> </ul>



*receivers, noise management measures have been recommended, including – “as required by CoA 3.3 and as part of due diligence practice, routine monitoring of ambient noise levels will be undertaken in the surrounding environment at a 6 monthly frequency or when peak Stage 2 fly ash operations are increased from typical existing daily movements”.*

As the Stage 2 Kerosene Vale Ash Repository Operation Noise Review was completed in September 2009, it can be reasonable expected that the first 6 monthly operational noise monitoring event would have been undertaken in March 2010.

At the time that this AEMR was being prepared, there was no evidence of ongoing operational noise monitoring being undertaken.

#### **Compliance Assessment Finding**

**Non-Conformance.**

Project Approval - (Minister's Conditions of Approval) Checklist

<p><b>MCoA 2.19</b></p> <p><i>If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 at:</i></p> <ul style="list-style-type: none"> <li><i>a) Any sensitive receiver in existence at the date of this approval; or</i></li> <li><i>b) Any sensitive dwelling for which an approval has been sought or obtained under the Environmental Planning and Assessment Act 1979 no later than six months after the conformation of operational noise levels;</i></li> </ul> <p><i>Upon receiving a written request from an effected landowner (unless that landowner has acquisition rights under condition 2.20 of this approval and has requested acquisition) the Proponent shall implement additional noise mitigation measures such as double glazing, insulation, air conditioning and or other building acoustic treatments at any residence on the land, in consultation with the landowner</i></p> <p><i>For the purpose of this condition and condition 2.20, confirmation of operational noise levels means:</i></p> <ul style="list-style-type: none"> <li><i>a) Completion of the operational noise review under condition 3.2 of this approval; and</i></li> <li><i>b) Implementation of any source controls, as required under condition 2.18 of this approval, should the operational noise review indicate noise levels in excess of the operational noise criterion specified in condition 2.15; and</i></li> <li><i>c) Monitoring of operational noise levels, as required under condition 3.3b) of this approval, following the implementation of any source controls</i></li> </ul> <p><i>The additional mitigation measures must be reasonable and feasible. If within three months of receiving this request from the landowner the Proponent and landowner cannot agree on the measures to be implemented, or there is a dispute about the implementation of these measures, then either party may refer the matter to the Director-General for resolution, whose decision shall be final.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Following the completion of the Stage 2 Kerosene Vale Ash Repository Operational Noise Review, no additional noise control or mitigation measures were required.</p> <p>Since the completion of the Stage 2 Kerosene Vale Ash Repository Operational Noise Review no ongoing operation noise monitoring has been undertaken to ascertain ongoing compliance or otherwise with respect to the operational noise criterion as specified under condition 2.15.</p>
<p><b>Compliance Assessment Finding</b></p> <p><b>Partial Compliance.</b></p> <p>Unable to assess compliance with respect to ongoing operational noise monitoring and associated compliance with respect to the criterion as specified under condition 2.15.</p> <p>Reference should be made to the <b>Non-Conformance</b> associated with MCoA 2.18.</p>



Project Approval - (Minister's Conditions of Approval) Checklist

<p><b>MCoA 2.20</b></p> <p><i>If, after the implementation of all reasonable and feasible source controls, as identified in the report required by condition 2.18, the noise generated by the project exceeds the criterion stipulated in condition 2.15 by more than 5dB(A):</i></p> <ul style="list-style-type: none"> <li><i>a) At a sensitive received in existence at the date of this approval; or</i></li> <li><i>b) At any residential dwelling for which an approval has been sought or obtained under the Environmental Planning and Assessment Act 1979 prior to the landholder receiving written notification that they are entitled to land acquisition rights, as per condition 2.25 of this approval; or</i></li> <li><i>c) Over 25% or more of the area of a vacant allotment in existence at the date of this approval, and where a dwelling is permissible under the Environmental Planning and Assessment Act 1979 at that date, with the exception of land that is currently used for industrial or mining purposes;</i></li> </ul> <p><i>The Proponent shall, upon receiving a written request for acquisition from the landowner, acquire the land in accordance with the procedures in condition 2.22 to 2.24 of this approval</i></p> <p><i>Any landowner that has agreed to, or property that has been the subject of, the application of additional noise measures under condition 2.19 of this approval waives that right to land acquisition</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Delta representatives advised that they have not received any written requests from landowners for the acquisition of their land.</p> <p>With respect to Condition 2.18 as referred to in this Condition, attention is drawn to the compliance assessment finding of made against Condition 2.18 which was as follows:</p> <ul style="list-style-type: none"> <li>▪ Compliance with respect to the requirements of MCoA3.2 – Operational Noise Review.</li> <li>▪ Non-conformance with respect to the requirement of MCoA3.3 to undertake ongoing operational noise monitoring.</li> </ul>
<p><b>Compliance Assessment Finding</b></p> <p><b>Partial Compliance.</b></p> <p>Unable to assess compliance with respect to the ongoing operational noise monitoring.</p> <p>Reference should be made to the <b>Non-Conformance</b> associated with MCoA 2.18.</p>

Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 3.4**

*The Proponent shall prepare and implement a Groundwater Monitoring Program to monitor the impacts of ash placement activities on local groundwater quality and hydrology. The Program shall be developed in consultation with, and to the satisfaction of, the SCA, and shall describe the location, frequency, rationale and procedures and protocols for collecting groundwater samples as well as the parameters analysed and methods of analysis. The monitoring program shall be ongoing for the life of the project and include, but not be limited to:*

- a) Monitoring at established bore sites (or placement bore sites in the event that existing sites are damaged or lost) as described in the document referred to under condition 1.1b) of this approval; and*
- b) A schedule for periodic monitoring of groundwater quality, depth and flow at all monitoring sites, at an initial frequency of no less than once every month for the first 12 months of operation.*

*This monitoring program shall form part of the Groundwater Management Plan referred to in condition 6.5b) of this approval.*

**Compliance Assessment Observations and Comments**

Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.

The following text is an extract from the Aurecon Report:

*Groundwater was monitored quarterly in bores located up-and down-gradient of the Kerosene Vale Ash Dam, Kerosene Vale Ash Repository Stage I and Stage II dry ash placement area and Sawyers Swamp Creek Ash Dam and then, except for one sample in June 2009, monthly from April, 2009, as required by the OEMP for Stage II.*

*The bore location descriptions are:*

- WGM1/D1 – head waters of Sawyers Swamp Creek
- WGM1/D2 – up-gradient of toe of Kerosene Vale Ash Dam Southern Wall
- WGM1/D3 – base of Sawyers Swamp Creek Ash Dam Left Abutment
- WGM1/D4 – base of Sawyers Swamp Creek Ash Dam Right Abutment
- WGM1/D5 – below the toe of Kerosene Vale Ash Dam North-Western Wall
- WGM1/D6 – below the toe of Kerosene Vale Ash Dam North- Western Wall

Two new groundwater monitoring bores to be installed down-gradient and to the north of the Stage II area – it was found that one bore in this area exists (GW6, Figure 1) but was not sampled and the second bore was not installed. Although seepage from Stage II, if any, is expected to flow to the north and west of the placement, the only down gradient data for the site was collected at the existing bores (WGM1/D5 and D6), so these were used in the current assessment. However, it is suggested that bore GW6 be included in the monitoring program as a seepage detection bore for seepage from KVAD under the Stage II area.

An additional up-gradient, background bore, to be installed prior to the beginning of operation of



the Stage II placement – *it was found that this bore was not installed and the Centennial Coal Mine bores located further to the south-east (Figure 7) were not suitable. As there are already two existing up-gradient bores in the area (WGM1/D2 for catchment background and D3 for site background to allow for inputs from the SSCAD), shown in Figure 1, these were considered sufficient for the Stage II assessment*

**Compliance** – with respect to monthly groundwater monitoring during the first 12 months of operation.

**Non-Compliance** – with respect to additional bores were not installed as per the OEMP. However, the Aurecon report provides recommendations for Delta's consideration in relation to the use of existing bores.

#### **Compliance Assessment Finding**

***Partial Compliance.***

**Project Approval - (Minister's Conditions of Approval) Checklist**

**MCoA 3.5**

*The Proponent is to implement a surface water quality monitoring program to monitor the impacts of the ash placement activities on and the realignment of, Sawyers Swamp Creek. The Program shall be developed in consultation with and to the satisfaction of the DPI (fisheries) and SCA, and shall describe the location, frequency, rationale and the procedures and protocols for collecting water samples as well as the parameters analysed and methods of analysis. The program shall include, but not necessarily be limited to:*

- a) Monitoring at the four existing water quality monitoring sites as described in the document referred to under condition 1.1b) of this approval;*
- b) Monitoring downstream of the sawyers Swamp Creek;*
- c) Monitoring at groundwater discharge points into Sawyers Swamp Creek;*
- d) Wet weather monitoring with a minimum of two events recorded within the first 12 months of both the operation of the project and post realignment of Sawyers Swamp Creek; and*
- e) A schedule for periodic monitoring of surface quality at all sites throughout the life of the project, at an initial frequency of no less than once every month for the first 12 months and must include, but not be limited to, dissolved oxygen, turbidity, total phosphorous and total nitrogen.*

*This monitoring program shall form part of the Surface Water Management Plan referred to in condition 6.5c) of this approval.*

**Compliance Assessment Observations and Comments**

Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon report. The following text is an extract from the Aurecon (2010) report with respect to the surface water monitoring sites:

*Surface water monitoring at two sites in Sawyers Swamp Creek – although the OEMP labelled these sites as "established", it was found that they did not exist at the time of preparation of the OEMP and were not included as part of the monitoring program after the Stage II placement began. In the absence of these sites, the existing receiving water site in Sawyers Swamp Creek , X7, was used.*

From the information presented in the Aurecon (2010) report the surface water monitoring locations are as follows:

- Sawyers Swamp Creek (site: WX7)
- Dump Creek (site: WX11)
- Lidsdale Cut (site: WX5)
- Sawyers Swamp Creek Ash Dam.

Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon (2010) report with respect to dissolved oxygen, turbidity, total phosphorus and total nitrogen:

*It is understood that these additional characteristics were required for the planned Sawyers Swamp Creek diversion around the Stage II area. However, the need for the diversion was overcome by limiting the Stage II area.*

Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon report. The following text is an extract from the Aurecon (2010) report with respect to the frequency of surface water monitoring:

*(Prior to April 2009) The frequency of sampling was quarterly, which was changed to monthly from April 2009 as required by the OEMP for Stage II, except there was no sampling in June 2009.*

**Compliance** – with respect to monthly surface water quality monitoring.

**Non-Conformance** – with respect to the establishment and monitoring of surface water at two sites in Sawyer Swamp Creek as per OEMP. However, the Aurecon (2010) used the existing receiving



water site in Sawyers Swamp Creek, X7.

**Not Applicable** – with respect to the monitoring of dissolved oxygen, turbidity, total phosphorus and total nitrogen.

**Compliance Assessment Finding**

**Partial Compliance.**

## Project Approval - (Minister's Conditions of Approval) Checklist

### MCoA 3.8

*The Proponent shall prepare an Air Quality Monitoring Program, in consultation with, and to the satisfaction of, the DECC. The Program shall include, but not necessarily be limited to, monitoring for dust at the monitoring sites identified in the document referred to under condition 1.1b) of this approval. The air monitoring program shall be ongoing for the life of the project, including final rehabilitation and stabilisation of the site.*

### Compliance Assessment Observations and Comments

Sighted Malfroy Environmental Strategies report (Draft, June 2010) titled "Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 to March 2010".

Section 6 of the report explicitly addresses the specific requirements of the OEMP and Air Quality Management Plan.

The following are extracts from the MES (Draft, June 2010) report:

- *The 2 new dust gauges have yet to be installed.*
- *Dust deposition at 4 of the 5 OEMP gauges was less than the 4g/m<sup>2</sup>/month (annual) in the first year of operation (subject to the omission of the regional dust storm data).*
- *Dust deposition at gauge 27 exceeded 4 (and 6) g/m<sup>2</sup>/month (annual).*
- *Gauges 27 and 28 are poorly located for the purpose of identifying impacts from KVAR2.*
- *The elevated results recorded at Gauge 27 are unlikely to be significantly affected by remissions from KVAR2.*

*Note – During late September 2009 and particularly on the 23<sup>rd</sup> and 26<sup>th</sup>, much of eastern Australia experienced severe dust storms and the impact of these storms are evident in the September and October dust gauge data*

The MES (2010) report provides a number of recommendations with respect air quality management that Delta Electricity should consider.

**Compliance** with respect to the establishment of an air quality management program.

**Non-Conformance** with respect to establishment of 2 new dust deposition gauges as per the requirement of the OEMP. It is noted that the MES (2010) report provides a number of recommendations with respect to air quality management that Delta Electricity should consider.

### Compliance Assessment Finding

**Partial Compliance.**



## Project Approval - (Minister's Conditions of Approval) Checklist

### MCoA 5.1

*Prior to the commencement of the project, the Proponent shall establish and maintain a website for the provision of electronic information associated with the project. The Proponent shall, subject to confidentiality, publish and maintain up-to-date information on this website or dedicated pages including, but not necessarily limited to:*

- a) The document referred to under condition 1.1 of this approval;*
- b) This project approval, Environmental Protection Licence and any other relevant environmental approval, licence or permit required and obtained in relation to the project;*
- c) All strategies, plans and programs required under this project approval, or details of where this information can be viewed*
- d) Information on construction and operational progress;*
- e) The outcomes of compliance tracking in accordance with the requirements of this project approval*

### **Compliance Assessment Observations and Comments**

<http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx>

This web site provides a link to the project **Conditions of Approval** and the **Operational Environmental Management Plan**.

The project web site informs that a copy of the Environmental Assessment and the Submissions Report are available at Department of Planning website – KV project, however no direct link to these reports is located within the site. A search of the Department of Planning website

[http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=826](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=826)

Provides access to the **Major Project Application, Preliminary Assessment, Director-General's Requirements, Environmental Assessment, Submissions Report, Director-General's Assessment Report and Instrument of Approval**.

The Kerosene Vale Stage 2 Ash Repository project is covered by the Environment Protection Licence (No. 766) which is held by the Wallerawang Power Station. A link to the EPL is provided at the following Delta Electricity web site:

<http://www.de.com.au/About-Us/Licences-and-compliance/default.aspx>

The Delta Electricity project web site <http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx> does not provide current information on construction and operational progress.

**Note** – the outcomes of compliance tracking is currently being undertaken via the Annual Environmental Performance Report (ref: MCoA 7.3) being prepared for the first twelve months of ash placement operations (April 2009 to April 2010).

### **Compliance Assessment Finding**

**Partial Compliance.**

## Project Approval - (Minister's Conditions of Approval) Checklist

### MCoA 5.2

*The Proponent shall make all documents required to be provided under condition 5.1 of this approval publicly available*

#### **Compliance Assessment Observations and Comments**

<http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx>

This web site provides a link to the project **Conditions of Approval** and the **Operational Environmental Management Plan**.

The project web site informs that a copy of the Environmental Assessment and the Submissions Report are available at Department of Planning website – KV project, however no direct link to these reports is located within the site. A search of the Department of Planning website [http://majorprojects.planning.nsw.gov.au/index.pl?action=view\\_job&job\\_id=826](http://majorprojects.planning.nsw.gov.au/index.pl?action=view_job&job_id=826)

Provides access to the **Major Project Application, Preliminary Assessment, Director-General's Requirements, Environmental Assessment, Submissions Report, Director-General's Assessment Report and Instrument of Approval**.

The Kerosene Vale Stage 2 Ash Repository project is covered by the Environment Protection Licence (No. 766) which is held by the Wallerawang Power Station. A link to the EPL is provided at the following Delta Electricity web site:

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The Delta Electricity project web site <http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx> does not provide current information on construction and operational progress.

**Note** – the outcomes of compliance tracking is currently being undertaken via the Annual Environmental Performance Report (ref: MCoA 7.3) being prepared for the first twelve months of ash placement operations (April 2009 to April 2010).

#### **Compliance Assessment Finding**

**Partial Compliance.**



Project Approval - (Minister's Conditions of Approval) Checklist

<p><b>MCoA 6.1</b></p> <p><i>Prior to the commencement of any construction or operational activities, or as otherwise agreed by the Director-general, the Proponent shall nominate for the approval of the Director-General a suitably qualified and experienced Environmental Representative(s) independent of the design, construction and operation personnel. The proponent shall engage and Environmental representative(s) during any construction activities, and throughout the life of the project, or as otherwise agreed by the Director-General. The Environmental Representative(s) shall:</i></p> <ul style="list-style-type: none"> <li><i>a) Oversee the implementation of all environmental management plans and monitoring programs required under this approval, and advise the Proponent upon the achievement of these plans/programs;</i></li> <li><i>b) Have responsibility for considering and advising the Proponent on matters specified in the conditions of this approval and the Statement of Commitments as referred to under condition 1.1c of this approval;</i></li> <li><i>c) Oversee the implementation of the environmental auditing of the project in accordance with the requirements of condition 4.2 of this approval and all relevant project Environmental Management System(s); and</i></li> <li><i>d) Be given the authority and independence to recommend to the Proponent reasonable steps to be taken to avoid or minimise unintended or adverse environmental impacts, and, failing the effectiveness of such steps, to recommend to the Proponent that relevant activities are to be ceased as soon as reasonably practicable if there is a significant risk that an adverse impact on the environment will be likely to occur.</i></li> </ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Sighted letter from Delta Electricity to the Department of Planning dated 17 March 2009 nominating Nino Di Falco as the environmental management representative to address condition 6.1.</p> <p>Sighted letter from Department of Planning dated 2 April 2009 which approves Nino Di Falco as the Environmental Representative in accordance with MCoA 6.1.</p> <p>The Environmental Representative conducts monthly reviews with the ash placement contractor (Bilfinger Berger Services) based on the monthly client service reports prepared by BBS.</p> <p>At this point in time Delta/Environmental Representative have yet to establish an internal auditing schedule against the specific requirements of the approved OEMP. Delta representative advised that the Environmental Representative attends monthly reviews which includes a dedicated environmental reporting component.</p>
<p><b>Compliance Assessment Finding</b></p> <p><b>Partial Compliance.</b></p>

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 1.1</b>
<p><i>The Proponent shall carry out the project generally in accordance with the:</i></p> <ul style="list-style-type: none"><li><i>a) Major Project Application 07_0005</i></li><li><i>b) Kerosene Vale – Stage 2 Ash Repository Area (two volume) – Environmental Assessment, prepared by Parsons Brinckerhoff and dated 1 April 2008</i></li><li><i>c) Kerosene Vale – Stage 2 Ash Repository Area – Submissions Report, prepared by Parsons Brinckerhoff and dated 30 May 2008; and</i></li><li><i>d) The conditions of this approval</i></li></ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p><i>Based on the site observations made, information reviewed and the assessment of compliance undertaken for the Conditions of Approval and OEMP, it is considered that the project has been carried out generally in accordance with the requirements of this condition.</i></p> <p><i>A number of non-compliances have been identified with respect to the Conditions of Approval and OEMP. Recommendations to address the non-compliances and to ensure continual improvement with respect to environmental management of the project have been provided to Delta Electricity for their consideration.</i></p> <p><i>With respect to this checklist (which is based on the Project Approval – Conditions of Approval) the following is a summary of results:</i></p> <ul style="list-style-type: none"><li>▪ <i>Compliance Findings: 25</i></li><li>▪ <i>Not Applicable Findings: 47</i></li><li>▪ <i>Partial Compliance Findings: 11</i></li><li>▪ <i>Non-Compliance Findings: 6</i></li></ul> <p><i>Details of the findings are presented in the following sections of this checklist and summarised in the Annual Environmental Management Report itself.</i></p>
<p><b>Compliance Assessment Finding</b></p> <p><b>Compliance.</b></p>



**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 1.4</b>
<i><b>This approval shall lapse five years after the date on which it is granted, unless the works that are subject of this approval are physically commenced on or before that time.</b></i>
<b><i>Compliance Assessment Observations and Comments</i></b>  The Project Approval for the Stage 2 Kerosene Vale Ash Repository project is dated 26 November 2008. The approval will lapse on 26 November 2013.  The Project Approval is still valid.  Works that are subject of this approval were physically commenced in April 2009.
<b>Compliance Assessment Finding</b>  Complies.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 1.5</b>
<i>The Proponent shall ensure that all licences, permits and approvals are obtained as required by law and maintained as required with respect to the project. No condition of this approval removes the obligation for the Proponent to obtain, renew or comply with such licenses, permits or approvals.</i>
<b>Compliance Assessment Observations and Comments</b> <p>The project is located within the operating area of Delta Electricity's Wallerawang Power Station, which holds an Environment Protection Licence (EPL) No. 766.</p> <p>The following sections of the EPL are relevant with respect to the operations of the Kerosene Vale Stage 2 Ash Repository Area:</p> <p>L5 Waste L6 Noise Limits L7 Hours of Operation</p> <p>The following sections of the AEMR provide sufficient information to enable an assessment of compliance to be made:</p> <p>L5 Waste – Section 7.2.2 Waste Management and detailed waste management sub plan review checklist (Appendix B).</p> <p>L6 Noise Limits – Detailed review for MCoA3.2 (Appendix A), Section 6 Complaints Register and Section 7.1.1 Ongoing Operational Noise Monitoring.</p> <p>L7 Hours of Operation – Detailed review checklists for MCoA2.8 and MCoA2.10 (Appendix A) and detailed noise and vibration management sub plan review checklist (Appendix B).</p> <p>Based on the observations and findings made from the overall review process, the project is generally complying with the relevant requirements of Delta's Environment Protection Licence (No. 766).</p>
<b>Compliance Assessment Finding</b> <p><b>Complies.</b></p>



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.2</b>
<i>To facilitate assessment of the viability of coal resources in the project area and provide a finite opportunity for the extraction, the Proponent shall undertake revised staging of ash placement activities as described in the document referred to in condition 1.2c) of this approval.</i>
<b>Compliance Assessment Observations and Comments</b> <p>Delta Electricity Representative (Asset Manager – External Plant) advised that Centennial Coal has declined (verbal communications only) to extract the coal resource in the project area following the completion of their studies.</p> <p>Delta Electricity Representative (Asset Manager – External Plant) advised that ash will not be placed over the coal resource in the project area (i.e. Area 2, pine plantation area) for another 2 years, which is finite opportunity.</p> <p>Site observations made during the on site review component of this assessment confirm that the area in question has not been subject to ash placement.</p> <p>Site observations made confirm that ash is being place in a north-easterly direction taking into account the stability constraints of the existing berm.</p>
<b>Compliance Assessment Finding</b> <p><b>Complies.</b></p>

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.8</b>
<b><i>Operational activities associated with the project shall be undertaken from 7:00 am to 10:00 pm Monday to Sunday.</i></b>
<b><i>Compliance Assessment Observations and Comments</i></b> <ul style="list-style-type: none"><li>• Sighted Bilfinger Berger Services Work Instruction dated 4 March 2009 titled "APA Contractual, Operational and Health Safety &amp; Environmental Obligations" that was issued to all personnel. This Work Instruction specifies the operational hours as being 7.00am to 10pm.</li><li>• Sighted Bilfinger Berger Services Repository Management Plan dated December 2009. The Repository Management Plan specifies the operational hours as being 7.00am to 10.00pm.</li><li>• Sighted Bilfinger Berger Services Monthly Ash Placement Work Instruction for the month of March 2010. This Monthly Work Instruction specifies the operational hours as being 7.00am to 10pm.</li><li>• Sighted a sample of Bilfinger Berger Services Daily Operational Timesheets:</li><li>• Daily Operational Timesheet dated 19 March 2010 for truck (ref: MERC-75). The first fly ash load was picked up at 7.00am and the last load was picked up at 1.45pm.</li><li>• Daily Operational Timesheet dated 19 March 2010 for truck (ref: BA 75 NH). The first fly ash load was picked up 2.29pm and the last load was picked up at 9.24pm.</li><li>• Daily Operational Timesheet dated 3 November 2009 for truck (ref: BA75NH). The first fly ash load was picked up 2.05pm and the last load was picked up at 9.45pm.</li><li>• Daily Operational Timesheet dated 3 November 2009 for truck (ref: MERC-75). The first fly ash load was picked up at 7.05am and the last load was picked up at 1.35pm.</li><li>• Daily Operational Timesheet dated 3 November 2009 for truck (ref: MERC-75). The first fly ash load was picked up at 2.00pm and the last load was picked up at 9.32pm.</li><li>• Sighted a sample of Bilfinger Berger Services Monthly Client Service Reports that incorporate a monthly environmental report for the Stage 2 Kerosene Vale Ash Repository Area operations undertaken by Bilfinger Berger Services on behalf of Delta Electricity. The reports sighted were for the months of (June 2009, October 2009, November 2009, December 2009 and January 2010). Ash placement operations were reported as taking place within approved operational hours.</li></ul>
<b>Compliance Assessment Finding</b> <p><b>Complies.</b></p>



**Project Approval - (Minister's Conditions of Approval) Checklist**

**MCoA 2.15**

*The cumulative operation noise from the ash placement area and ash haulage activity shall not exceed an  $L_{\text{aeq}(15 \text{ minute})}$  of 40 dB(A) at the nearest most affected sensitive receiver during normal operating hours as defined in condition 2.8 of this approval*

*This noise criterion applies under the following meteorological conditions:*

- a) Wind speeds up to 3 m/s at 10 meters above ground; and*
- b) Temperature inversion conditions of up to 3°C/100m and source to receiver gradient winds of up to 2 m/s at 10m above ground level.*

*This criterion does not apply where the Proponent and the affected landowner have reached a negotiated agreement in regards to noise, and a copy of the agreement has been forwarded to the Director-General and the DECC.*

**Compliance Assessment Observations and Comments**

In assessing compliance with this condition of approval, the findings of the Stage 2 Kerosene Vale Ash Repository Operational Noise Review (ref: Parsons Brinckerhoff, 2116987A, PR\_0805, September 2009) have been drawn upon. The statement of compliance from the operational noise review is as follows:

*Measured noise levels during May and August 2009 indicate Stage 2 operations are generally compliant with the operational noise criteria. Potential exceedance by up to 2.5 dB(A) has been identified at Location B Skelly Road during 3 discrete 15-minute monitoring events. Measured Stage 2 noise levels are influenced by all ambient noise sources.*

*During neutral meteorological conditions full compliance with the operational noise criteria has been determined during the day time and evening periods at all nearest receiver locations.*

*Compliance with the operational noise goal is achieved at all receivers during neutral and potential prevailing noise enhancing meteorological conditions where peak day time and evening period fly ash truck movements do not exceed 5 trucks per 15-minute period.*

*During worst case operational conditions of day time or evening peak day time fly ash truck movements greater than 5 trucks per 15-minute period:*

- *potential operational criteria exceedance up to 0.5 dB(A) at Location B Skelly Road and 1.5 dB(A) at Location C Neubeck Street for day time operations of prevailing source to receiver wind speed 3m/s or greater, or temperature inversions where source to receiver prevailing wind speed exceeds 1m/s*
- *potential operational criteria exceedance up to 0.5 dB(A) at Location C Neubeck Street of prevailing source to receiver wind speeds of 3m/s or greater, or temperature inversions inclusive of prevailing source to receiver wind speed of 2m/s.*
- *In accordance with the NSW INP, analysis of meteorological data has determined, prevailing source to receiver noise enhancing wind gradient and temperature inversion conditions are not considered to be a feature for the area.*

Delta Electricity representatives advised that they have not entered into any negotiated agreement in regard to noise with any potentially affected landowner.

**Compliance Assessment Finding**

**Complies.**



Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 2.16**

*The Proponent shall implement measures to ensure noise attenuation of trucks. These measures may include, but are not necessary limited to, installation of residential class mufflers, engine shrouds, body dampening, speed limiting, fitting of rubber stoppers to tail gates, limiting the use of compression braking, and ensuring trucks operate in a one-way system at the ash repository where feasible*

**Compliance Assessment Observations and Comments**

With the commencement of the Stage 2 ash placement operations, Delta's contractor (Bilfinger Berger Services) brought a new truck fleet into operation. A total of two trucks are used transfer ash to the repository area. The new trucks are Mercedes-Benz Actros 4144 AK 8x8 units. It should be noted the haulage trucks associated with Stage 1 operations are no longer in use.

Haulage truck operations were observed and the following positive operations were observed:

- Compression braking was not evident.
- Vehicle movements were arranged in a one way direction which avoids the need for reversing and the associated sounding reversing alarms.
- Speed limits were being complied with.
- Haulage trucks engines are enclosed and manufacturer's exhaust and mufflers are in place.
- Tail gate closing noise was observed to be minimal.

Haulage vehicles appeared to be well maintained (ie clean, tarps in good condition and operational, low noise levels observed, exhaust emission were not smokey).

A sample of the following Bilfinger Berger Services documents relating to haulage truck maintenance were observed:

- Prestart checklist for mobile plant (dated 13 March 2010 and 26 March 2010)
- Motor vehicle audit condition report (dated 9 November 2009)
- Work Order (ref: 72644, 21 December 2009) for 2,000hr-25K servicing of ash haulage trucks.
- Series of West Orange Motors Pty Ltd service invoices for the servicing of ash haulage trucks.

**Compliance Assessment Finding**

**Complies.**

**Project Approval - (Minister's Conditions of Approval) Checklist**

**MCoA 2.17**

*The Proponent shall liaise with the owner/operator of Angus Place Coal Mine with the aim of preparing a protocol which provides for a co-operative approach for the management and mitigation of noise impacts associated with coal and ash truck movements along the private haul road.*

**Compliance Assessment Observations and Comments**

Sighted Delta Electricity email dated 27 April 2010 which summarises a meeting that was held between Delta and Centennial Coal personnel on 24 April 2010. The summary indicates that Centennial Coal will be responsible for items such as noise bund, noise monitoring, rehabilitation of noise wall and haul road relocation.

Delta Electricity advised that they will continue to liaise with Centennial Coal in relation to this project.

In the first twelve months of operation, only one noise complaint has been received that was attributable to the project. On 29 May 2009, Delta received adverse response from a resident in relation to day noise from Stage 2 fly ash truck operations on the haul road. Upon investigation by Delta personnel, it was determined that on 29 May 2009 the new fly ash trucks were temporarily replaced with the previous twin trailer Stage 1 trucks due to short term ash loading issues. On 30 May 2009, normal fly ash truck operations were resumed (ie new trucks back in operation) and the complaint was satisfactorily resolved with no further complaint or adverse comment from the resident. No noise investigation to measure or otherwise determine potential received noise influence from Stage 2 operations at the complainant property were considered necessary.

**Compliance Assessment Finding**

**Compliance.**



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.30</b>
<i>The Proponent shall take all reasonable and feasible measures to prevent discharge of sediments and pollutants from the construction and operation of the project entering waterways</i> <i>*Note: Section 120 of the Protection of The Environment Operations Act prohibits the pollution of a waterway except where expressly provided by an Environment Protection Licence*</i>
<b>Compliance Assessment Observations and Comments</b>  Site observations of ash placement operations confirmed that there is no evidence that sediments and pollutants from the operation of the project have entered waterways.  Site observations confirm that surface water management within the stage 2 ash repository area is self contained and drains to a internally located "dirty water" pond.  Collected "dirty water" is beneficially reused by the ash repository operations eg dust suppression and as needed by other Wallerawang Power Station activities.  It is noted that that the Stage 2 ash repository operation does not have any licensed water discharge points based on a review of Environment Protection Licence No. 766 for the Wallerawang Power Station.
<b>Compliance Assessment Finding</b>  Complies.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.31</b>
<i>Earthworks not associates with the realignment of sawyers Swamp creek shall not be undertaken within 50 m of the creek where reasonable and feasible</i>
<b><i>Compliance Assessment Observations and Comments</i></b>  Site observations made within the Stage 2 ash repository area and of ash placement operations confirm that no earthworks or ash placement activities is occurring within 50m of Sawyers Swamp Creek.
<b>Compliance Assessment Finding</b>  Compliance.



**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.32</b>
<b><i>All equipment, machinery and vehicle associated with the construction and operation of the project shall be operated and maintained in a manner that minimises the potential for oil and grease spills/leaks.</i></b>
<b><i>Compliance Assessment Observations and Comments</i></b> <p>Sighted a sample of maintenance records relating to haulage truck maintenance consisting of:</p> <ul style="list-style-type: none"><li>▪ Prestart checklist for mobile plant (dated 13 March 2010 and 26 March 2010)</li><li>▪ Motor vehicle audit condition report (dated 9 November 2009)</li><li>▪ Work Order (ref:72644, 21 December 2009) for 2,000hr-25K servicing of ash haulage trucks</li><li>▪ Series of West Orange Motors Pty Ltd service invoices for the servicing of ash haulage trucks.</li></ul> <p>Sighted a sample of the following maintenance records related to other ash placement plant/equipment consisting of:</p> <ul style="list-style-type: none"><li>▪ Water Cart (Daily plant safety checklist and defect report dated 6 and 7 April 2010)</li><li>▪ Roller (Prestart checklist – daily for weeks commencing Monday 16 November 2009 and Monday 15 March 2010)</li><li>▪ Bulldozer (Prestart checklist for week commencing Monday 23 November 2009 and Wednesday 24 March 2010).</li></ul> <p>Observed the operation of plant/equipment (eg ash haulage trucks, dozer, compactor and water cart) no evidence of plant/equipment being poorly maintained and no evidence of leaks/spills of oil, grease and or other fluids from plant/equipment.</p>
<b>Compliance Assessment Finding</b> <p><b>Complies.</b></p>

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.33</b>
<i>The proponent shall construct and operate the project in a manner that minimises dust impacts generated by construction works and operational activities, including wind-blown and traffic-generated dust, on the receiving environment. 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 time, the Proponent shall identify and implement all practicable dust mitigation measures, including cessation of relevant works, as appropriate, such that the emissions of visible dust cease.</i>
<b>Compliance Assessment Observations and Comments</b> <p>Stage 2 ash repository operations were observed on 25 March 2010 at 10.00am. No visible emissions of dust from the site or within the stage 2 ash repository area were observed. It should be noted that a wind speed measurement was taken by Delta Electricity at 1.54pm at the repository. The recorded wind speed was 16.6 km/hr (~4.6 m/s). A wind speed of 2 m/s was also recorded at 10.30am at the Mount Piper weather station.</p> <p>An extensive sprinkler system was in place and operation across areas of exposed ash.</p> <p>A water cart was observed operating along the haulage routes/roads.</p> <p>A truck wheel wash station was observed to be operating.</p> <p>Ash haulage vehicles (fleet of two trucks) had loads covered. Covers used are a remotely operated type.</p> <p>A dust complaint dated 4 December 2009 (re: fly ash on car) was investigated by DECCW, which confirmed that the material was fly ash. Delta Electricity reviewed operational conditions at the time, and found that the likely source of ash was WW Unit 8 Boiler, where a fuel trip caused the precipitators to de-energise at the time of the complaint. Based on Delta's investigation, this complaint does not appear to be associated with the Stage 2 Kerosene Vale Ash Repository operations.</p> <p>No complaints have been received by Delta relating to dust impacts associated with the Stage 2 Kerosene Vale Ash Repository operations.</p>
<b>Compliance Assessment Finding</b> <p><b>Compliance.</b></p>



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.34</b>
<i>The proponent shall ensure that the load carrying compartment(s) of all ash haulage trucks are covered at all times except when loading or unloading ash material.</i>
<b>Compliance Assessment Observations and Comments</b>  Ash haulage operations were observed, which consisted of a fleet of two trucks. All loads were covered during transportation.  Sighted Daily Operational Timesheet for 3 November 2009, which details that a one of the ash haulage trucks was taken out of operation for 30 minutes while a hole in its load cover was repaired prior to returning to ash haulage operations.
<b>Compliance Assessment Finding</b>  Complies.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.35</b>
<i>The proponent shall take all practicable measures to mitigate off-site lighting impacts from the project and ensure all external lighting associated with the project complies with "Australian Standard AS4282 1997 – Control of the Obtrusive Effects of Outdoor Lighting."</i>
<b>Compliance Assessment Observations and Comments</b>  Sighted Bilfinger Berger Services procedure 'Lighting Towers – Outdoor Lighting' Reference: Document Number. BBS-WP-712.6.3_Mobile Lighting Towers. This procedure specifies that only one portable lighting tower is to be used and its light must be directed towards the east, south east or south. The procedure has been developed with reference (where applicable) to AS2842.  Delta's electronic complaints register shows no instances of complaints concerning off site lighting impacts.
<b>Compliance Assessment Finding</b>  Compliance.



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.37</b>
<i>The proponent shall ensure that all construction personnel are educated on their obligation in respect of the protection of Aboriginal and non-indigenous heritage sites and items.</i>
<b>Compliance Assessment Observations and Comments</b>  BBS project personnel are required to attend both a Delta Electricity induction as well as a BBS induction for environmental management. Sighted induction records (Delta/BBS), which includes the date induction was undertaken and the expiry date (which is set for 1 year).  Sighted Bilfinger Berger Services document (ref: BBS-PC-726) titled "Environmental Management Controls for Cultural Heritage). This document outlines procedures for protecting heritage items.
<b>Compliance Assessment Finding</b>  Compliance.

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.39</b>
<b><i>All waste materials shall be assessed, classified, managed and disposed of in accordance with "Environmental Guidelines: Assessment, Classification and management of Liquid and Non-liquid Wastes" (EPA, 1999).</i></b>
<b><i>Compliance Assessment Observations and Comments</i></b> <p>The Environment Protection Licence (No. 766) held by the Wallerawang Power Station specifies the types of waste that is permitted to be disposed of at the Kerosene Vale Ash Repository (ref: Clauses L5.2 and L5.3). The permitted wastes include ash, mill pyrites, demineralisation and polisher plant effluents, chemical clean solutions, cooling tower sediments, ion exchange resins, fabric filter bags, brine conditioned fly ash, biomass co-firing ash, settling pond sediment and oil and grit trap sediments).</p> <p>Delta representatives advised that since the commencement of the Kerosene Vale Stage 2 Ash Repository, ash has been the only waste material placed in Stage 2 to date.</p> <p>No construction activities were required to facilitate the placement of ash within the Stage 2 area as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises the existing facilities.</p> <p>Bilfinger Berger Services utilises Delta Electricity's waste management facilities for wastes it generates (eg waste oil, general waste and materials for recycling).</p> <p>Delta Electricity maintains a number of intermediate waste storage facilities from which wastes are collected by Delta Electricity's waste contractors.</p>
<b>Compliance Assessment Finding</b> <p><b>Compliance.</b></p>

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.40</b>
<b><i>All waste materials removed from the site shall only be directed to a waste management facility lawfully permitted to accept the materials.</i></b>
<b><i>Compliance Assessment Observations and Comments</i></b> <p>The Kerosene Vale Stage 2 Ash Repository project is a waste disposal project by nature, which is permitted via the Environment Protection Licence (No. 766) held by the Wallerawang Power Station.</p> <p>No construction wastes have been generated to date as no construction activities were required to facilitate the placement of ash. The Stage 2 operation is basically a continued progression of placement from Stage 1 and utilises existing facilities. As such no waste has been removed from the Kerosene Vale Stage 2 Ash Repository project.</p> <p>Bilfinger Berger Services utilises Delta Electricity's waste management facilities for wastes it generates (eg waste oil, general waste and materials for recycling). Delta Electricity maintains a number of intermediate waste storage facilities from which wastes are collected by Delta Electricity's waste contractors.</p>
<b>Compliance Assessment Finding</b> <p><b>Compliance.</b></p>



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.41</b>
<i>The Proponent shall not cause, permit or allow any waste generated 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 under the Protection of the Environment Operations act 1997, if such a licence is required in relation to that waste.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advises that no waste is accepted from sources external to the Wallerawang Power Station facility. No unauthorised access is permitted within the Wallerawang Power Station.  Delta's contractor (Bilfinger Berger Services) would report any unauthorised access to the Stage 2 Kerosene Vale Stage 2 Ash Repository to Delta personnel if encountered during their operations.  Delta representatives advised that security patrols are undertaken several times during daylight hours. No patrols are conducted outside of normal operational hours.
<b>Compliance Assessment Finding</b>  Compliance.

**Project Approval - (Minister's Conditions of Approval) Checklist**

<p><b>MCoA 3.2</b></p> <p><i>Within 60 days within commencement of operation of the project, unless otherwise agreed to by the Director-General, the proponent shall submit for the approval of the Director-General an Operational Noise Review to confirm the operational noise impacts of the project. The Operational Noise Review must be prepared in consultation with, and to the satisfaction of, the DECC. The review shall:</i></p> <ul style="list-style-type: none"> <li><i>a) Identify the appropriate operational noise objectives and level for sensitive receivers;</i></li> <li><i>b) Describe the methodologies for noise monitoring including the frequency of measurements and location of monitoring sites;</i></li> <li><i>c) Document the operational noise levels at sensitive receivers as ascertained by the noise monitoring program;</i></li> <li><i>d) Assess the noise performance of the project against the noise criterion specified in condition 2.15 of this approval and the predicted noise levels as detailed in the report referred to under condition 1.1b) of this approval; and</i></li> <li><i>e) Provide details of any entries in the Complaints Register (as requires under condition 5.4 of this approval) relating to noise impacts.</i></li> </ul> <p><i>Where monitoring indicates noise levels in excess of the operational noise criterion specifies in condition 2.15 of this approval, the Proponent shall prepare a report as required by condition 2.18 of this approval.</i></p>	<p><b>Compliance Assessment Observations and Comments</b></p> <p>The Director-General's approval of pre-operational requirements was granted on 17 April 2009, the 60 day post commissioning period was due to be completed on 15 June 2009.</p> <p>Meteorological conditions unsatisfactory for noise monitoring delayed the commencement of the operational noise review.</p> <p>Initial noise surveys were undertaken on 14 May 2009 and 17 May 2009 by Parsons Brinckerhoff</p> <p>An <i>Interim Operational Noise Review</i> titled "Stage 2 Kerosene Vale Ash Repository Operational Noise Review – Interim Report" dated June 2009 by Parsons Brinckerhoff was submitted to the Department of Planning on 5 June 2009.</p> <p>Letter from Parsons Brinckerhoff to the Department of Planning dated 5 June 2009 requesting a 60 day extension to the post commissioning period was sited.</p> <p>Sighted Department of Planning letter to Parsons Brinckerhoff dated 11 August 2009 accepting the 60 day extension to the post commissioning period.</p> <p>The <i>Final Operational Noise Review</i> titled "Stage 2 Kerosene Vale Ash Repository Operational Noise Review" dated September 2009 by Parsons Brinckerhoff was submitted to the Department of Planning on 16 September 2009.</p> <p>Sighted Department of Planning letter to Parsons Brinckerhoff dated 18 September 2009 outlining the Department's satisfaction that Condition 3.2 has been met.</p> <p><b>Compliance Assessment Finding</b></p> <p><b>Complies.</b></p>
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## Project Approval - (Minister's Conditions of Approval) Checklist

### MCoA 4.2

*The Proponent shall develop and implement a Compliance Tracking Program for the project, prior to commencing operations, to track compliance with the requirements of this approval and shall include, but not necessarily limited to:*

- a) Provisions for periodic review of the compliance status of the project against the requirements of this approval and the Statement of Commitments detailed in the document referred to in condition 1.1c) of this approval;*
- b) Provisions for periodic reporting of the compliance status to the Director-General;*
- c) A program for independent environmental auditing with AS/NZ ISO 19011:2003 – Guidelines for Quality and/or Environment Management Systems Auditing;*
- d) Procedures for rectifying any non compliance identified during environmental auditing or review of compliance;*
- e) Mechanisms for recording environmental incidences and actions taken in response to those incidents;*
- f) Provisions for reporting environmental incidences to the Director-General during construction and operation; and*
- g) Provisions for ensuring all employees, contractors and sub-contractors are aware of, and comply with, the conditions of this approval relevant to their respective activities.*

*The Compliance tracking Program shall be implemented prior to operation of the project, with a copy submitted to the Director-General for approval within 4 weeks of commencement of the project, unless otherwise agreed by the Director-General*

#### **Compliance Assessment Observations and Comments**

Department of Planning Letter (dated 17 April 2009) which indicates that the Department is satisfied that the relevant pre-operational requirements of the Minister's approval have been met. In addition, this letter indicates the Director-General has approved the following in accordance with the Minister's approval:

- The Pre-Operation Compliance Report in accordance with 4.1b) of the Minister's approval.
- ***The Compliance Tracking Program in accordance with condition 4.2 of the Minister's approval.***
- ***The revised OEMP received by the Department on 8 April 2009 in accordance with condition 6.4 of the Minister's approval.***
- ***The OEMP Management Plans received by the Department on 8 April 2009, in accordance with condition 6.5 of the Minister's approval.***

With respect to recording environmental incidents and actions taken in response to incidents and rectifying non-conformances identified during environmental auditing or reviews, Delta has an ISO 14001 certified Environmental Management System. Key aspects of the certified EMS from corporate level to day to day operations include:

- DES EN 001 – Corporate Environmental Standard (version 1.5, 8 August 2008)
- Production Operating Procedure ENV001 (version 2, January 2010).
- Environmental Management System Administrative Procedure for Nonconformity, Corrective and Preventative Action (EMSAP-14, version 4.0, 18 July 2008)

Relevant section of the OEMP are as follows:

- 4.2 (a+b) – Addressed by MCoA 7.3 Annual Performance Reporting.
- 4.2(c) – OEMP Section 3.8 Environmental Audits.



- 4.2(d) – OEMP Section 3.8 Environmental Audits and Section 3.8.1 Non-Compliances.
- 4.2(e) – OEMP Section 3.9 Environmental Incident Management.
- 4.2(f) – OEMP Section 3.9 Environmental Incident Management.
- 4.2(g) – OEMP Section 3.5 Environmental Awareness Training and Site Inductions.

**Compliance Assessment Finding**

**Complies with respect to development requirement.**

Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 5.3**

*Prior to the commencement of the project, the Proponent shall ensure that the following are available for community complaints and enquiries during construction and operation:*

- a) A 24 hour contact number(s) for which complaints and enquiries about construction and operation activities may be registered*
- b) A postal address to which written complaints and enquiries may be sent; and*
- c) An email address to which electronic complaints and enquiries may be transmitted*

*The telephone number, postal address and email address shall be published in a newspaper circulating in the local area prior to commencement of the project. The above details shall also be provided on the website required by condition 5.1 of this approval.*

**Compliance Assessment Observations and Comments**

The project website <http://www.de.com.au/About-Us/Ash-management/Kerosene-Vale-Ash-Repository/default.aspx> showed that an office hours contact number and an afterhours contact number for complaints and enquiries, a postal address for written complaints and enquiries and an email address for electronic complaints and enquiries were available.

Sighted copy of Lithgow Mercury (newspaper) notice place by Delta (2<sup>nd</sup> May 2009). The required information is provided in the notice.

**Compliance Assessment Finding**

**Complies.**

Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 5.4**

*The Proponent shall record the details of all complaints received through the means listed under condition 5.3 of this approval in an up-to-date Complaints Register. The Register shall record, but not necessarily be limited to:*

- a) The date and time of the complaint;*
- b) The means by which the complaint was made (e.g. telephone, email, mail, in person);*
- c) Any personal details of the complaint that were provided, or if no details were provided, a note to that effect;*
- d) The nature of the complaint;*
- e) The time taken to respond to the complaint;*
- f) Any investigations and actions taken by the Proponent in relation to the complaint;*
- g) Any follow up contact with, and feedback from, the complainant; and*
- h) 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.*

**Compliance Assessment Observations and Comments**

Delta Electricity operates a centralised database system for complaints. The system was inspected as part of the onsite review component of the Annual Environmental Management Report. The database system address the requirements of this condition of approval.

**Compliance Assessment Finding**

**Complies.**



Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 6.4**

*The Proponent shall prepare and implement an Operation Environmental Management Plan to detail an environmental management framework, practices and procedures to be followed during operation of the project. The Plan shall be consistent with "Guideline for the Preparation of Environmental management Plans" (DIPNR 2004) and shall include, but not necessarily be limited by:*

- a) Identification of all statutory and other obligations that the Proponent is required to fulfil in relation to operation of the project, including all approvals, licences and consultations;*
- b) A description of the roles and responsibilities for all relevant employees (including contractors) involved in the operation of the project;*
- c) Overall environmental policies and principles to be applied to the operation of the project*
- d) Standards and performance measures to be applied to the project, and a means by which environmental performance can be periodically reviewed and improved, where appropriate;*
- e) Management policies to ensure that environmental performance goals are met and to comply with the conditions of this approval;*
- f) The additional plans listed under condition 6.5 of this approval; and*
- g) The environmental monitoring requirements outlined under conditions 3.3 to 3.5 inclusive and 3.8 of this approval.*

*The plan shall be submitted for the approval of the Director-General no later than four weeks prior to the commencement of operation of the project, unless otherwise agreed by the Director-general. Operation shall not commence until written approval has been received from the Director General.*

*Nothing in this approval precludes the Proponent from incorporating the requirements of the Operational Environmental Management Plan into existing environmental management systems and plans administered by the Proponent.*

**Compliance Assessment Observations and Comments**

Department of Planning Letter (dated 17 April 2009) which indicates that the Department is satisfied that the relevant pre-operational requirements of the Minister's approval have been met. In addition, this letter indicates the Director-General has approved the following in accordance with the Minister's approval:

- The Pre-Operation Compliance Report in accordance with 4.1b) of the Minister's approval.
- The Compliance Tracking Program in accordance with condition 4.2 of the Minister's approval.
- The revised OEMP received by the Department on 8 April 2009 in accordance with condition 6.4 of the Minister's approval.
- The OEMP Management Plans received by the Department on 8 April 2009, in accordance with condition 6.5 of the Minister's approval.

**Compliance Assessment Finding**  
**Complies.**

Project Approval - (Minister's Conditions of Approval) Checklist

MCoA 6.5

*As part of the Operational Environmental Management Plan for the project, required under condition 6.4 of this approval, the Proponent shall prepare and implement the following management Plans*

- a) An Operational Noise Management Plan to detail measures to mitigate and manage noise during operation of the project. The Plan shall be prepared in consultation with, and to the satisfaction of, the DECC and include, but not necessarily be limited to:*
  - i. Procedure to ensure that all reasonable and feasible noise mitigation measures are applied during operation of the project*
  - ii. Identification of all relevant sensitive receivers and the applicable criteria at those receivers commensurate with the noise limit specified under condition 2.15 of this approval;*
  - iii. Identification of activities that will be carried out in relation to the projected and the associated noise sources;*
  - iv. Noise monitoring procedures ( as referred to in condition 3.3 of this approval) for periodic assessment of noise impacts at the relevant receivers against the noise limits specified under this approval and the predicted noise levels as detailed in the report referred to under condition 1.1b) of this approval;*
  - v. Details of all management methods and procedures that will be implemented to control individual and overall noise emissions from the site during operation;*
  - vi. Procedures and corrective actions to be undertaken if non-compliance against the operational noise criteria is detected; and*
  - vii. Provisions for periodic reporting of results to DECC.*
- b) A Groundwater Management Plan to detail measures to mitigate and manage groundwater impacts. The Plan shall be prepared in consultation with, and to the satisfaction of, the SCA and include, but not necessarily be limited to:*
  - i. Baseline data on groundwater quality, depth and flow in the project area;*
  - ii. Groundwater objectives and impact assessment criteria;*
  - iii. A program to monitor groundwater follows and groundwater quality in the project area as required by condition 3.4 of this approval;*
  - iv. A protocol for the identification of identified exceedances of the groundwater impact assessment criteria;*
  - v. A response plan to address potential exceedance and groundwater quality impacts; and*
  - vi. Provisions for periodic reporting of results to SCA.*
- c) A Surface Water Management Plan to outline measures that will be employed to manage 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 project. The Plan shall be based on best environmental practice and shall be prepared in consultation with, and to the satisfaction of, the SCA and DPI (fisheries) and include, but not necessarily be limited to:*
  - i. Baseline data on the water quality and flow in Sawyers Swamp Creek up to the date of this approval*
  - ii. Water quality objectives and impact assessment criteria for sawyers Swamp creek;*
  - iii. A program to monitor surface water quality in Sawyers Swamp Creek as referred to in condition 3.5 of this approval;*



- iv. *A protocol for the investigation of identified exceedances in the impact assessment criteria;*
  - v. *A response plan to address potential adverse surface water quality exceedances*
  - vi. *A site water management strategy identifying clean and dirty water areas for Stages A, B and C of the project and the associated water management measures including erosion and sediment controls and provisions for recycling/reuse of water and the procedure for decommissioning water management structures on the site; and*
  - vii. *Provisions for periodic reporting of results to the DPI (fisheries) and the SCA.*
- d) *An Air Quality Management Plan to outline measures to minimise impacts from the project on local air quality. . The Plan shall be prepared in consultation with, and to the satisfaction of, the DECC and include, but not necessarily be limited to:*
- i. *Baseline data on dust deposition levels;*
  - ii. *Air quality objectives and impact assessment criteria;*
  - iii. *An air quality monitoring program as referred to in condition 3.8 of this approval;*
  - iv. *An assessment of alternative methods of ash placement to minimise the exposure of active placement areas to prevailing winds;*
  - v. *Mitigation measures to be incorporated during emplacement activities and haulage of ash;*
  - vi. *An operating protocol for the repository irrigation system including activation rates, application rates and area of coverage;*
  - vii. *A protocol for the investigation of visible emissions from the repository area; and*
  - viii. *A response plan to address potential adverse surface water quality exceedances*
  - ix. *provisions for periodic reporting of results to the DECC*
- e) *A Landscape Management Plan to outline measures to minimise the visual impacts of the repository and ensure the long-term stabilisation of the site and compatibility with the surrounding land fabric and land use. The Plan shall include, but not necessarily be limited to:*
- i. *Identification of design objectives and standards based on local environmental values, vistas and land uses;*
  - ii. *A description of short- and long-term revegetation measures;*
  - iii. *A schedule of species to be used in revegetation;*
  - iv. *Timing and progressive implementation of revegetation works as placement areas are completed, including landscape plans; and*
  - v. *Procedures and methods to monitor and maintain the revegetated areas during the establishment phase and long-term.*

*Revegetation works must incorporate the use of local native species.*



### ***Compliance Assessment Observations and Comments***

Department of Planning Letter (dated 17 April 2009) which indicates that the Department is satisfied that the relevant pre-operational requirements of the Minister's approval have been met. In addition, this letter indicates the Director-General has approved the following in accordance with the Minister's approval:

- The Pre-Operation Compliance Report in accordance with 4.1b) of the Minister's approval.
- The Compliance Tracking Program in accordance with condition 4.2 of the Minister's approval.
- ***The revised OEMP received by the Department on 8 April 2009 in accordance with condition 6.4 of the Minister's approval.***
- ***The OEMP Management Plans received by the Department on 8 April 2009, in accordance with condition 6.5 of the Minister's approval.***

The OEMP management plans required by condition 6.5 are presented in the following sections of the approved OEMP:

- Section 6.4 Operational Noise and Vibration Monitoring Sub Plan.
- Section 6.6 Groundwater Management Sub Plan.
- Section 6.5 Surface Water Quality Sub Plan.
- Section 6.7 Air Quality Management Plan.
- Section 6.8 Landscape and Revegetation Sub Plan.

**Note – Implementation of OEMP requirements assessed separately (refer to OEMP specific checklists and findings).**

### **Compliance Assessment Finding**

**Complies.**

**Project Approval - (Minister's Conditions of Approval) Checklist**

<p><b>MCoA 7.3</b></p> <p><i>The Proponent shall, throughout the life of the project, prepare and submit for the approval of the Director-general, an Annual Environmental Management Report (AEMR). The AEMR shall review the performance of the project against the Operational Environmental Management Plan (refer to condition 6.4 of this approval) and the conditions of this approval. The AEMR shall include, but not necessarily be limited to:</i></p> <ul style="list-style-type: none"> <li><i>a) Details of compliance with the conditions of this approval</i></li> <li><i>b) A copy of the Complaints Register (refer to condition 5.4 of this approval) for the preceding 12 month period (exclusive of personal details), and details of how these complaints were addressed and resolved</i></li> <li><i>c) Identification of any circumstances in which the environmental impacts and performance of the project during the year have been generally consistent with the environmental impacts and performance predicted in the documents listed under condition 1.1 of this approval, with details of additional mitigation measures applied to the project to address recurrence of these circumstances;</i></li> <li><i>d) Results of all environmental monitoring required under conditions 3.3 to 3.8 of this approval, including interpretations and discussion by a suitable qualified person; and</i></li> <li><i>e) A list of all occasions in the preceding 12 month period when environmental goals/objectives/impact assessment criteria for the project have not been achieved, indicating the reason for failure to meet the criteria and the action taken to prevent recurrence of that type of failure.</i></li> </ul> <p><i>The Proponent shall submit a copy of the AEMR to the Director-general every year, with the first AEMR to be submitted no later than 12 months after the commencement of operation of the project. The Director-General may require the Proponent to address certain matters in relation to the environmental performance of the project in response to review of the Annual Environmental Report. Any action required to be undertaken shall be completed within such period as the Director-General may require. The Proponent shall make copies of each AEMR available for public inspection on request.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>In March 2010, Parsons Brinckerhoff Australia Pty Ltd was engaged by Delta Electricity to prepare the first Annual Environmental Management Report for the twelve month period of April 2009 to April 2010. It should be noted that ash placement within the Kerosene Vale Stage 2 Ash Repository commenced in April 2009.</p> <p>As this is the first AEMR for the Kerosene Vale Stage 2 Ash Repository project, its approval by the Director-General of DoP will be determined after its preparation and submission. The approval by the Director-General of DoP will be assessed when the next AEMR is prepared.</p>
<p><b>Compliance Assessment Finding</b></p> <p><b>Compliance with respect to preparation of AEMR.</b></p> <p>Approval of this AEMR by the Director-General DoP will be assessed when the next AEMR is prepared.</p>

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 1.2</b>
<i>In the event of an inconsistency between::</i> <ul style="list-style-type: none"><li><i>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</i></li><li><i>b) Any of the documents listed from the condition 1.1a) to 1.1c) inclusive, the most recent document shall prevail to the extent of the inconsistency</i></li></ul>
<b>Compliance Assessment Observations and Comments</b> <p>During the course of the review undertaken in preparing this AEMR, no inconsistencies were evident between the documents listed under condition 1.1.</p>
<b>Compliance Assessment Finding</b> <p>Not Applicable.</p>



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 1.3</b>
<i>The proponent shall comply with the reasonable requirements with the Director-General arising from the Department's assessment of:</i> <ul style="list-style-type: none"><li><i>a) Any reports, plans or correspondence that are submitted in accordance with this approval; and</i></li><li><i>b) The implementation of any actions or measures contained in these reports, plans or correspondence.</i></li></ul>
<b>Compliance Assessment Observations and Comments</b>  Delta advised that they have not received any requests from the Director-General of DoP.
<b>Compliance Assessment Finding</b> Not Applicable.

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.3</b>
<i>Construction activities associated with the project shall only be undertaken during the following hours:</i> <ul style="list-style-type: none"><li><i>a) 7:00 am to 6:00 pm, Mondays to Fridays, inclusive;</i></li><li><i>b) 8:00 am to 1:00 pm Saturdays; and</i></li><li><i>c) At no time on Sundays or public holidays</i></li></ul>
<b>Compliance Assessment Observations and Comments</b> <p>Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilised existing facilities.</p>
<b>Compliance Assessment Finding</b> <p><b>Not Applicable.</b></p>

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.4</b>
<i>Activities resulting in impulsive or tonal noise emission (such as rock breaking or rock hammering) shall be limited to 8:00 am to 12:00 pm, Monday to Saturday and 2:00 pm to 5:00 pm, Monday to Friday. The Proponent shall not undertake such activities for more than three continuous hours and must provide a minimum one-hour respite period.</i>
<b>Compliance Assessment Observations and Comments</b>  Not Applicable – refer to observations made against MCoA 2.3.
<b>Compliance Assessment Finding</b>  Not Applicable.



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.5</b>
<i>Construction outside the hours stipulated in condition 2.3 of this approval is permitted in the following circumstances:</i> <ul style="list-style-type: none"><li><i>a) Where construction works do not cause audible noise at any sensitive receiver; or</i></li><li><i>b) For the delivery of materials required outside the hours for the Police or other authorities for safety reasons; or</i></li><li><i>c) Where it is required in an emergency to avoid the loss of lives, property and/or to prevent environmental harm.</i></li></ul>
<b>Compliance Assessment Observations and Comments</b>  Not Applicable – refer to observations made against MCoA 2.3.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.6</b>
<p><i>The hours of construction activities specified under condition 2.3 of this approval may be varied with the prior written approval of the Director-General. Any request to alter the hours of construction specified in condition 2.3 shall be:</i></p> <ul style="list-style-type: none"><li><i>a) Considered on a case-by-case basis;</i></li><li><i>b) Accompanied by details of the nature and need for activities to be conducted during the varied construction hours; and</i></li><li><i>c) Accompanied by any information necessary for the Director-General to reasonably determine that activities undertaken during the varied construction hours will not adversely impact on the acoustic amenity of sensitive receivers in the vicinity of the site.</i></li></ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Not Applicable – refer to observations made against MCoA 2.3.</p>
<p><b>Compliance Assessment Finding</b></p> <p>Not Applicable.</p>

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.7</b>
<i>The construction noise objective for the proponent is to manage noise from construction activities (as measured by <math>L_{A10(15 \text{ minute})}</math> descriptor) so as not to exceed the background <math>L_{A90}</math> noise level by more than 10dB(A) at any sensitive receiver.</i>
<b>Compliance Assessment Observations and Comments</b>  Not Applicable – refer to observations made against MCoA 2.3
<b>Compliance Assessment Finding</b>  Not Applicable.



Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 2.10**

*Operations outside the hours stipulated in condition 2.8 of this approval are only permitted in the following emergency situations:*

- a) Where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or*
- b) Breakdown of plant and/or equipment at the repository or the Wallerawang Power Station with the effect of limiting or preventing ash storage at the power station outside the operating hours defined in condition 2.8; or*
- c) A breakdown of an ash haulage truck (s) preventing haulage during the operating hours stipulated in condition 2.8, combined with insufficient storage capacity at the Wallerawang power Station to store ash outside of the project operating hours; or*
- d) In the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs the Proponent (as a licensee) under the National Electricity Rules to increase power generation for system security and there is insufficient ash storage capacity at the Wallerawang Power Station to allow for the ash to be stored.*

*In the event of conditions 2.10b) or 2.10c) arising, the proponent is to take all reasonable and feasible measures to repair the breakdown in the shortest time possible*

**Compliance Assessment Observations and Comments**

Delta advised there have been no instances where operations have taken place outside the hours stipulated in condition 2.8 (ie Monday to Sunday: 7.00am to 10.00pm).

As part of the on site review component of this AEMR, Delta Electricity's database of complaints and environmental incidents was interrogated. The results of this interrogation were that there have been no complaints or instances associated with operations being performed outside of the normal operational hours as stipulated in condition 2.8.

Delta Electricity's notification log was sighted. This log provides guidance as to the notification requirements should operations need to be undertaken in the case of After Hours Haulage scenario.

It should be noted that the Environment Protection Licence (No. 766) held by Delta Electricity for the Wallerawang Power Station specifies (re: cause L7.2d) that in the case of after hours haulage, prior notification must be provided to the EPA and affected residents as soon as possible or within a reasonable period in the case of emergency.

**Compliance Assessment Finding**

**Not Applicable** (i.e. trigger event has yet to occur).

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.11</b>
<p><i>In the event that an emergency situation as referred to under condition 2.10b) or 2.10c) occurs more than once in any two month period, the Proponent shall prepare and submit to the Director-General for approval a report including, but not limited to:</i></p> <ul style="list-style-type: none"><li><i>a) The dates and a description of the emergency situations;</i></li><li><i>b) An assessment of all reasonable and feasible mitigation measures to avoid recurrence of the emergency situations;</i></li><li><i>c) Identification of a preferred mitigation measure(s); and</i></li><li><i>d) Timing and responsibility for implementation of the mitigation measure(s)</i></li></ul> <p><i>The report is to be submitted to the Director-General within 60 days of the second exceedance occurring. The Proponent shall implement all reasonable and feasible mitigation measures in accordance with the requirements of the Director General</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Not Applicable – refer to observations made against MCoA 2.10.</p>
<p><b>Compliance Assessment Finding</b></p> <p>Not Applicable.</p>

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.12</b>
<i>The Proponent shall notify the DECC prior to undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in Condition 2.8 of this approval and keep a log of such operations.</i>
<b>Compliance Assessment Observations and Comments</b>  Not Applicable – refer to observations made against MCoA 2.10.  Delta Electricity's After Hours Haulage Log and associated Notification Log were sighted as part of the on site review component of work. The notification log includes the requirement to notify the DECC in addition to other relevant parties.
<b>Compliance Assessment Finding</b>  Not Applicable.



**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 2.13</b>
<i>The Proponent shall notify the Director-General in writing within seven days of undertaking any emergency ash haulage or placement operations outside of the hours of operation stipulated in condition 2.8 of this approval.</i>
<b>Compliance Assessment Observations and Comments</b>  Not Applicable – refer to observations made against MCoA 2.10.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.14</b>
<i>The proponent shall notify nearby sensitive receivers (as defined in the Operational Noise management Plan required under condition 6.5 a) of this approval) prior to 8:00 pm where it is known that emergency ash haulage or placement operations will be required outside the hours stipulated in condition 2.8 of this approval.</i>
<b>Compliance Assessment Observations and Comments</b>  Not Applicable – refer to observations made against MCoA 2.10.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.21</b>
<i>The land acquisition rights under condition 2.20 of this approval do not apply to landowners who have sought approval to subdivide their land after the date of this approval, unless the subdivision is created pursuant to condition 2.24 of this approval.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that they have not received any written requests from landowners for the acquisition of their land.
<b>Compliance Assessment Finding</b>  Not Applicable.



Project Approval - (Minister's Conditions of Approval) Checklist

MCoA 2.22
<p><i>Within three months of receiving written request from a landowner with rights under the condition 2.20 of this approval, the Proponent shall make a binding written offer to the landowner base on:</i></p> <ul style="list-style-type: none"> <li><i>a) The current market value of the landowner's interest in the property at the date of this written request, as if the property was unaffected by the project which is the subject of the project application, having regard to</i> <ul style="list-style-type: none"> <li><i>i. Existing and permissible use if the land, in accordance with the applicable planning instruments at the date of the written request; and</i></li> <li><i>ii. Presence of improvements on the property and/or any approved building or structure which has been physically commenced at the date of the landowner's written request, and is due to be completed subsequent to that date, but excluding any improvements that have resulted from the implementation of condition 2.19 of this approval</i></li> </ul> </li> <li><i>b) The reasonable costs associated with:</i> <ul style="list-style-type: none"> <li><i>i. Relocating within the Lithgow local government area, or to any other local government area determined by the Director-General</i></li> <li><i>ii. Obtaining legal advice and expert advice for determining the acquisition price of the land, and the terms upon which it is required; and</i></li> </ul> </li> <li><i>c) Reasonable compensation for any disturbance caused by the land acquisition process</i></li> <li><i>d) However, if at the end of this period, the proponent and landowner cannot agree on the acquisition price of the land and/or the terms upon which the land is to be acquired, then either party may refer the matter to the Director-General for resolution.</i></li> <li><i>e) Upon receiving such a request, the Director-General shall request the President of the NSW division of the Australian Property Institute to appoint a qualified independent valuer or Fellow of the Institute, to consider submissions from both parties, and determine a fair and reasonable acquisition price for the land, and/or terms upon which the land is to be acquired.</i></li> <li><i>f) Within 14 days of receiving the independent valuer's determination, the proponent shall make a written offer to purchase the land at a price not less than the independent valuer's determination.</i></li> <li><i>g) If the landowner refuses to accept this offer within six months of the date of the Proponent's offer, the Proponent's obligations to acquire the land shall cease, unless otherwise agreed by the Director-general.</i></li> </ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Delta representatives advised that they have not received any written requests from landowners for the acquisition of their land.</p>
<p><b>Compliance Assessment Finding</b></p> <p>Not Applicable.</p>

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.23</b>
<i>The proponent shall bear the costs of any valuation or survey assessment requested by the independent valuer or the Director-General and the costs of determination referred to above.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that they have not received any requests from landowners for their land to be acquired by Delta.  Delta representatives advised that no valuation or survey assessments have been requested.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.24</b>
<i>If the proponent and landowner agree that only part of the land shall be acquired, then the proponent shall pay all reasonable costs associated with obtaining Council approval for any plan of subdivision (where permissible), and registration of the plan at the Office of the Registrar-General.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that they have not received any written requests from landowners for the acquisition of their land.
<b>Compliance Assessment Finding</b>  Not Applicable.



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.25</b>
<i>The proponent shall provide written notice to all landowners that are entitled to rights under condition 2.19 and 2.20 within 21 days of determining the landholdings where noise mitigation measures or land acquisition apply. For the purposes of condition 2.20b), this condition only applies where operational noise levels have been confirmed in accordance with the definition in condition 2.19.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that they have not received any written requests from landowners for the acquisition of their land.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 2.26**

*The proponent shall prepare and submit to the Director-General for approval a Rehabilitation Plan addressing the restoration of the in-stream area (i.e bed and bank) or Sawyers Swamp creek and the associated riparian corridor at least two months prior to the realignment of the creek, unless otherwise agreed by the Director-General. The Plan shall be developed in consultation with, and to the satisfaction of, the DPI (Fisheries) and shall include, but not necessarily be limited to:*

- a) The objectives and outcomes that would be sought through the implementation of the Plan;*
- b) Performance criteria for the realigned creek and associated riparian zone against which the impact of the project on the ecological health of Sawyers swamp Creek will be assessed;*
- c) Methodology used in developing the realignment planform;*
- d) Details of the final creek realignment, including bank, meander, depth and slope characteristics, scour potential, and in-stream vegetation;*
- e) Timing of the creek realignment*
- f) A description of the proposed riparian zone and restoration works along the entire length of the creek realignment, including details of plant species to be used in rehabilitation;*
- g) Details of any proposed riparian and in-stream controls to be implemented in the reach upstream of the alignment to ensure the effectiveness of the proposed creek realignment and rehabilitation;*
- h) A description of the initial and ongoing weed control measures;*
- i) The methodology and timing of post realignment monitoring of the hydrology and ecological health of the aquatic and riparian vegetation as required under conditions 3.6 and 3.7 of this approval, respectively;*
- j) Mitigation measures to be implemented in the event of an identified decline in ecosystem health as a direct result of the realignment of the creek or construction or operation of the project, including a timetable for implementation;*
- k) Program for ongoing maintenance of the realigned creek system and associated riparian zone;*
- l) Any compensatory measures to offset the impact of the project on the aquatic habitat and local waterways, if and as required by the DPI (fisheries).*
- m) Provisions for periodic reporting of monitoring results to the DPI (fisheries)*

*The proponent shall not commence any construction work that would result in the disturbance of Sawyers Swamp Creek until the Rehabilitation Plan has been approval by the Director-General*

**Compliance Assessment Observations and Comments**

Delta representatives advised that there is no longer any plans to realign Sawyers Swamp Creek. As such, no Rehabilitation Plan has been prepared.

Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilising existing facilities.

**Compliance Assessment Finding**

Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.27</b>
<i>The rehabilitation and restoration of Sawyers Swamp Creek and associated riparian zone are to be consistent with the "Works and watercourse Design Guideline"(DWE , April 2007) and "Guidelines for Controlled Activities: Vegetation Management Plans" (DWE, February 2008).</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that there is no longer any plans to realign Sawyers Swamp Creek. As such, no Rehabilitation Plan has been prepared.  Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilising existing facilities.
<b>Compliance Assessment Finding</b>  Not Applicable.



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.28</b>
<i>A riparian zone consisting of local native plant species shall be established and maintained in and adjacent to sawyers Swamp Creek, for the entirety of the site and be a minimum width of 20m on both sides of the creek. Seed and propagule sources are to be from local botanical provenance and same general habitat.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that there is no longer any plans to realign Sawyers Swamp Creek. As such, no Rehabilitation Plan has been prepared.  Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilising existing facilities.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 2.29**

*A riparian zone referred to under condition 2.28 of this approval shall be maintained for a period of at least five years after final planting.*

***Compliance Assessment Observations and Comments***

Delta representatives advised that there is no longer any plans to realign Sawyers Swamp Creek. As such, no Rehabilitation Plan has been prepared.

Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilising existing facilities.

**Compliance Assessment Finding**

**Not Applicable.**

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.36</b>
<p><i>The proponent shall ensure that construction vehicles associated with the project:</i></p> <ul style="list-style-type: none"><li><i>a) Minimise the use of local roads (through residential streets and town centres) to gain access to the site;</i></li><li><i>b) Adhere to any nominated haulage routes identified in the Construction Traffic Management Plan as referred to in condition 6.3a) of this approval; and</i></li><li><i>c) Adhere to a Construction Vehicle Code of Conduct prepared to manage driver behaviour along the local road network to address traffic impacts (and associated noise along nominated haulage routes.</i></li></ul>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilising existing facilities.</p>
<p><b>Compliance Assessment Finding</b></p> <p><b>Not Applicable.</b></p>



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 2.38</b>
<i>If any previously unidentified heritage sites or items (Aboriginal or non-indigenous) are discovered during construction works or operational activities, all work likely to affect the heritage item(s) is to cease immediately and the discovery of the objects shall be reported to DECC or the Department as relevant.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that there have been no incidents associated with previously unidentified heritage sites or items during the Stage 2 Kerosene Vale Ash Repository operations.  A review of Delta's electronic incident register confirms that there have been no incidents associated with previously unidentified heritage sites or items.  No construction activities were required to facilitate the placement of ash within the Stage 2 area as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises the existing facilities.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 3.1</b>
<p><i>The Proponent shall prepare and implement a "Construction Noise Monitoring" Program to confirm the predictions of the noise assessment detailed in the document referred to under condition 1.1b) of this approval and assess compliance against the construction noise criterion stipulated in condition 2.7 of this approval. The noise monitoring program shall be prepared in consultation with, and to the satisfaction of, the DECC. The monitoring program shall form part of the Construction Noise management Plan referred to in condition 6.3b) of this approval and must include monitoring of the construction noise generated during:</i></p> <ul style="list-style-type: none"><li><i>a) The realignment of sawyers swamp creek;</i></li><li><i>b) Construction of the stabilisation berm;</i></li><li><i>c) Excavation of the former pine plantation area;</i></li><li><i>d) Relocation and construction of surface water management structures; and</i></li><li><i>e) Concurrent construction activities</i></li></ul> <p><i>The proponent shall forward to the DECC and the Director-General a report containing the result of each noise assessment and describing any non-compliance within 14 days of conducting a noise assessment</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Ash placement within the Kerosene Vale Stage 2 Ash Repository commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises existing facilities.</p> <p>Delta representatives advised that none of the activities described by (a) to (e) of this condition of approval have been undertaken.</p>
<p><b>Compliance Assessment Finding</b></p> <p>Not Applicable.</p>

Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 3.6**

*The Proponent is to implement a Hydrological Monitoring Program to assess and quantify the impacts and effectiveness of the realigned section of Sawyers Swamp Creek in consultation with, and to the satisfaction of, the DPI (fisheries). Monitoring is to undertaken for a period of 5 years upon completion of the creek realignment and is to include scour and erosion monitoring. The program must include sampling before and after the realignment works and include a sampling site downstream of the realigned section of creek. In the first 12 months following completion of the realignment, monitoring is to be undertaken at least every 3 months upon completion of the creek realignment and after any wet weather/bankful flow event. The monitoring program shall form part of the Rehabilitation management Plan for the project as referred to in condition 2.26 of this approval.*

**Compliance Assessment Observations and Comments**

Delta representatives advised that there is no longer any plans to realign Sawyers Swamp Creek. As such, no Rehabilitation Plan (as per MCoA 2.26) incorporating a Hydrological Monitoring Program has been prepared.

**Compliance Assessment Finding**

**Not Applicable.**



Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 3.7**

*The Proponent is to implement an Ecological Monitoring Program, in consultation with, and to the satisfaction of, the DPI (fisheries), to monitor and quantify the impacts of the realignment on Sawyers Swamp Creek on the ecology and ecosystems of the creek and the associated riparian environment. The Program shall include, but not necessarily be limited to:*

- a) A sampling, data collection and assessment regime to establish baseline ecological health and for ongoing monitoring of ecological health of the in-stream environment during construction and throughout the life of the project;*
- b) At least one in-stream sampling period prior to the realignment of sawyers swamp Creek and at least 2 sampling periods following the realignment of sawyers swamp creek; and*
- c) An assessment regime for monitoring the ecological health of the riparian environment for a period of at least 5 years after final planting.*

*The monitoring program shall form part of the Rehabilitation Plan for the project as referred to in condition 2.26 of this approval.*

**Compliance Assessment Observations and Comments**

Delta representatives advised that there is no longer any plans to realign Sawyers Swamp Creek. As such, no Rehabilitation Plan (as per MCoA 2.26) incorporating an Ecological Monitoring Program has been prepared.

**Compliance Assessment Finding**

Not Applicable.

**Project Approval - (Minister's Conditions of Approval) Checklist**

**MCoA 4.1**

*Prior to each of the events listed below, the Proponent shall certify in writing to the satisfaction of the Director-General that it has complied with all conditions of this approval applicable prior to that event:*

- a) Commencement of any construction works on the land subject of this approval; and*
- b) Commencement of operation of the project*

**Compliance Assessment Observations and Comments**

Ash placement within the Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises existing facilities.

Delta Electricity letter (dated 2 April 2009) to Department of Planning. This letter confirms that Delta has complied with all conditions of the approval that relate to operational activities.

Kerosene Vale Stage 2 Ash Repository Pre-Operation Compliance Report (dated March 2009, ref: 2116886A, PR\_9725, Parsons Brinckerhoff Australia Pty Ltd).

Department of Planning Letter (dated 17 April 2009) which indicates that the Department is satisfied that the relevant pre-operational requirements of the Minister's approval have been met. In addition, this letter indicates the Director-General has approved the following in accordance with the Minister's approval:

- The Pre-Operation Compliance Report in accordance with 4.1b) of the Minister's approval.
- The Compliance Tracking Program in accordance with condition 4.2 of the Minister's approval.
- The revised OEMP received by the Department on 8 April 2009 in accordance with condition 6.4 of the Minister's approval.
- The OEMP Management Plans received by the Department on 8 April 2009, in accordance with condition 6.5 of the Minister's approval.

The DoP letter dated 17 April 2009 indicates that construction related requirements (ie MCoA4.1b) will be addressed at a future date as part of the pre-construction requirements.

**Compliance Assessment Finding**

**Complies** with respect to the requirements of 4.1b.

**Not Applicable** with respect to the requirements of 4.1a.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 4.3</b>
<i>Nothing in the approval restricts the Proponent from utilising any existing compliance tracking programs administrated by the Proponent to satisfy the requirements of condition 4.2. in doing so, the Proponent must demonstrate to the Director-General how these systems address the requirements and/or have been amended to comply with the requirements of the condition.</i>
<b>Compliance Assessment Observations and Comments</b>  The project has an approved OEMP (approved by DoP on 17 April 2009).  In addition, Delta Electricity holds ISO14001 accreditation for its Environmental Management System.
<b>Compliance Assessment Finding</b>  Not Applicable.



Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 4.4</b>
<i>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 1.2 of this approval.</i>
<b>Compliance Assessment Observations and Comments</b>  Delta representatives advised that they have not received any requests from the Director-General DoP in respect of the implementation of any measure necessary to ensure compliance with the conditions of this approval.
<b>Compliance Assessment Finding</b>  Not Applicable.

Project Approval - (Minister's Conditions of Approval) Checklist

<b>MCoA 6.2</b>
<p><i>Prior to the commencement of any construction work, the Proponent shall prepare and implement a Construction Environmental Management Plan (CEMP). The CEMP shall outline the environmental management practices and procedures to be followed during construction. The CEMP shall be prepared in accordance with "Guideline for the Preparation of Environmental management Plans (DIPNR, 2004)</i></p> <p><i>The CEMP for the project (or any stage of the project) shall be submitted to the Director-General for approval at least 4 weeks prior to the commencement of any construction works associated with the project (or stage as relevant), unless otherwise agreed by the Director-general. Construction shall not commence until written approval has been received from the Director-General.</i></p>
<p><b>Compliance Assessment Observations and Comments</b></p> <p>Ash placement within the Kerosene Vale Stage 2 Ash Repository commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises existing facilities.</p>
<p><b>Compliance Assessment Finding</b></p> <p>Not Applicable.</p>

Project Approval - (Minister's Conditions of Approval) Checklist

MCoA 6.3

*As part of the CEMP for the project, the proponent shall prepare and implement the following plans:*

- a) A Construction Traffic Management Plan, prepared in consultation with RTA, the relevant council and emergency services to manage the construction traffic impacts of the project, including but not limited to:*
  - i. Identifying construction vehicle volumes (construction staff vehicles, heavy vehicles and oversized loads) and haulage routes;*
  - ii. Identifying any road closures and/or traffic detours during the haulage of oversized loads as agreed to by the relevant roads authority;*
  - iii. Detailing a Construction Vehicle Code of Conduct to set driver behaviour controls to minimise impacts on the land uses along haul routes (including noise minimisation measures) and;*
  - iv. Complying with the document "Procedures for Use in the Preparation of a Traffic Management Plan" (RTA, 2001)*
- b) A Construction Noise Management Plan to detail how construction noise impacts would be minimised and managed. The strategy shall be developed in consultation with, and to the satisfaction of, the DECC and shall include, but not be necessarily limited to:*
  - i. Details of construction activities and an indicative schedule for construction works;*
  - ii. Identification of construction activities that have the potential to generate noise impacts on sensitive receivers;*
  - iii. Procedures for assessing noise levels at sensitive receivers and compliance*
  - iv. Details of the reasonable and feasible actions and measures to be implemented to minimise noise impacts and, if any noise exceedance is detected, how any non compliance would be rectified; and*
  - v. Procedures for notifying sensitive receivers of construction activities that are likely to affect their noise amenity.*
- c) An Erosion and Sediment Control Plan to detail measures to minimise erosion and the discharge of sediment and other pollutants to land and/or water during construction works. The Plan must include, but not necessarily be limited to:*
  - i. Identification of the construction activities that could cause soil erosion or discharge sediment or water pollutants from site*
  - ii. A description of the management methods to minimise soil erosion or discharge of sediment or water pollutants from the site, including a strategy to minimise the area of bare surfaces, stabilise disturbed areas, and minimise bank erosion; and*
  - iii. Demonstrate that the proposed erosion and sediment control measures will conform with, or exceed, the relevant requirements of "Managing Urban Stormwater: Soils and Construction (Landcom, 2004)*



***Compliance Assessment Observations and Comments***

Ash placement within the Kerosene Vale Stage 2 Ash Repository commenced in April 2009. No construction activities were required to facilitate the placement of ash as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises existing facilities.

**Compliance Assessment Finding**

**Not Applicable.**

**Project Approval - (Minister's Conditions of Approval) Checklist**

<b>MCoA 7.1</b>
<i>The Proponent shall notify the Director-General of any environmental incident within 12 hours of becoming aware of the incident. The Proponent shall provide full written details of the incident to the Director-General within 7 days of the date on which the incident occurred</i>
<b>Compliance Assessment Observations and Findings</b> <p>The Project Approval defines an Environmental Incident as “any incident with actual or potential significant impacts on the biophysical environment and/or off-site impacts on people”.</p> <p>Note – the Environment Protection Licence (EPL No. 766) held by Wallerawang Power Station covers the operation of the Kerosene Vale Stage 2 Ash Repository. Clause R2 Notification of environmental hard specifies notification requirements which are similar to those of this condition of approval.</p> <p>Delta representatives advised that the Kerosene Vale Stage 2 Ash Repository project has not experienced any environmental incidents since operations commenced in April 2009.</p> <p>Delta Electricity operates a centralised database system for incidents including environmental incidents. The system was inspected as part of the onsite review component of the Annual Environmental Management Report. No environmental incidents have been recorded.</p>
<b>Compliance Assessment Finding</b> <p><b>Not Applicable.</b></p>

Project Approval - (Minister's Conditions of Approval) Checklist

**MCoA 7.2**

*The Proponent shall meet the requirements of the Director-general to address the cause or impact of any environmental incident, as it relates to this approval, reported in accordance with condition 7.1 of this approval, within such period as the Director-general may require.*

**Compliance Assessment Observations and Findings**

No environmental incidents have occurred since the commencement of project operations in April 2009. As such the Proponent has not received any requests from the Director-General DoP to address the cause or impact of any environmental incident.

**Compliance Assessment Finding**

**Not Applicable.**



## **Appendix B**

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Detailed review checklists for OEMP  
management sub-plans

### ***Ash Delivery and Placement Sub Plan (from OEMP)***

<b>Targets</b>	<ul style="list-style-type: none"> <li>▪ Achieve compliance with the normal hours of operation condition for at least 98% of the year (stretch target = 100 % of year).</li> <li>▪ Achieve a significant reduction in the number of days operating under emergency conditions (less than 5 days/year, stretch target = 0 days/year).</li> <li>▪ Achieve compliance with the ash placement and compaction procedures stipulated by this OEMP.</li> <li>▪ Achieve an ash re-use target of 20% by the year 2013 (stretch target = 40% by 2013)</li> </ul>
<b>Indicators</b>	<ul style="list-style-type: none"> <li>▪ Truck logs and weighbridge results reflect ash transport is occurring within approved timeframes</li> <li>▪ Site inspections demonstrate truck movements are confined to the approved work zone boundaries</li> <li>▪ Regular monitoring of truck movements and placement operations show 100% compliance in areas such as speed limit adherence and the covering of loaded vehicles</li> <li>▪ Daily equipment, machinery and vehicle inspection checklists are completed, ensuring no vehicles are operational unless in compliance with checklist.</li> <li>▪ Site inspections confirm that ash handling and compaction procedures and targets are being complied with.</li> <li>▪ Demonstrable engagement with the agricultural and other industry sectors to establish levels of value and trade options for processed ash</li> </ul>

### **Performance with respect to OEMP Targets**

Based on the information reviewed and the site observations made, the operations of the Stage 2 Kerosene Vale Ash Repository are meeting the following targets of the Ash Delivery and Placement Sub Plan of the OEMP:

- Compliance with the normal hours of operation condition for at least 98% of the year and its stretch target of 100% of year.
- Reduction in the number of days operating under emergency conditions (less than 5 days/year and its stretch target of 0 days/year).
- Compliance with the ash placement and compaction procedures.

At this point in time, it is not possible to determine whether or not Delta is on track to achieve an ash re-use target of 20% by 2013 or its stretch target of 40% by 2013.

### **Performance Assessment based on Compliance Assessment Observations (detailed in the following section)**

The majority of OEMP requirements with respect to ash delivery and placement were found to be complied with.

Two non-conformances were identified, which need to be addressed.

The first non-conformance relates to the requirement for Delta to undertake a review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation. The review is to be undertaken and lodged with the Director-General DoP following the commencement of operations. Reference should also be made to the observations/findings with respect to MCoA 2.9.

The second non-conformance relates to the requirement for Delta to prepare a long-term ash management strategy and submit it to the Director-General DoP within six months of the commencement of operations. Delta to formally advise the Director-General of DoP as to the status of its long-term ash management strategy. Reference should also be made to the observations/findings with respect to MCoA2.1.

Management and mitigation measures

Evidence sighted in assessing compliance



<p>Operational activities associated with the Stage 2 works shall only be undertaken from 7.00 am to 10.00 pm Monday to Sunday under normal operating conditions to reduce impacts on noise and air quality</p>	<p>Sighted Bilfinger Berger Services Work Instruction dated 4 March 2009 titled "APA Contractual, Operational and Health Safety &amp; Environmental Obligations" that was issued to all personnel. This Work Instruction specifies the operational hours as being 7.00am to 10pm.</p> <p>Sighted Bilfinger Berger Services Repository Management Plan dated December 2009. The Repository Management Plan specifies the operational hours as being 7.00am to 10.00pm.</p> <p>Sighted Bilfinger Berger Services Monthly Ash Placement Work Instruction for the month of March 2010. This Monthly Work Instruction specifies the operational hours as being 7.00am to 10pm.</p> <p>Sighted a sample of Bilfinger Berger Services Daily Operational Timesheets:</p> <p>Daily Operational Timesheet dated 19 March 2010 for truck (ref: MERC-75). The first fly ash load was picked up at 7.00am and the last load was picked up at 1.45pm.</p> <p>Daily Operational Timesheet dated 19 March 2010 for truck (ref: BA 75 NH). The first fly ash load was picked up at 2.29pm and the last load was picked up at 9.24pm.</p> <p>Daily Operational Timesheet dated 3 November 2009 for truck (ref: BA75NH). The first fly ash load was picked up at 2.05pm and the last load was picked up at 9.45pm.</p> <p>Daily Operational Timesheet dated 3 November 2009 for truck (ref: MERC-75). The first fly ash load was picked up at 7.05am and the last load was picked up at 1.35pm.</p> <p>Daily Operational Timesheet dated 3 November 2009 for truck (ref: MERC-75). The first fly ash load was picked up at 2.00pm and the last load was picked up at 9.32pm.</p> <p>Sighted a sample of Bilfinger Berger Services Monthly Client Service Reports that incorporate a monthly environmental report for the Stage 2 Kerosene Vale Ash Repository Area operations undertaken by Bilfinger Berger Services on behalf of Delta Electricity. The reports sighted were for the months of (June 2009, October 2009, November 2009, December 2009 and January 2010). Ash placement operations were reported as taking place within approved operational hours.</p> <p><b>Compliance.</b></p>
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<ul style="list-style-type: none"> <li>▪ Operations outside the hours 7.00 am to 10.00 pm Monday to Sunday are only permitted in the following emergency situations:             <ul style="list-style-type: none"> <li>▶ where it is required to avoid the loss of lives, property and/or to prevent environmental harm; or</li> <li>▶ breakdown of plant and/or equipment at the repository or the Wallerawang Power Station with the effect of limiting or preventing ash storage at the power station outside the operating hours stated above; or</li> <li>▶ breakdown of an ash haulage truck(s) preventing haulage during the operating hours stipulated above, combined with insufficient storage capacity at the Wallerawang Power Station to store ash outside of the Project operating hours; or</li> <li>▶ in the event that the National Electricity Market Management Company (NEMMCO), or a person authorised by NEMMCO, directs Delta (as a licensee) under the National Electricity Rules to maintain, increase or be available to increase power generation for system security and there is insufficient ash storage capacity at the Wallerawang Power Station to allow for the ash to be stored.</li> </ul> </li> <li>▪ Onsite activities under normal conditions relating to the Stage 2 operations such as ash truck movements along the haul roads and engines being started must be undertaken between the hours of 7.00 am and 10.00 pm Monday to Sunday.</li> </ul>	<p>Delta representatives advised that there have been no instances where operations have taken place outside the hours stipulated for normal operations. Refer to comments/observations made against MCoA 2.10.</p> <p><b>Not Applicable (trigger instance has not occurred).</b></p>
<ul style="list-style-type: none"> <li>▪ In the event that an emergency situation as defined by this sub-plan occurs more than once in any two month period, Delta shall prepare and submit to the Director-General for approval a report including, but not limited to:             <ul style="list-style-type: none"> <li>▶ the dates and a description of the emergency situations</li> <li>▶ an assessment of all reasonable and feasible mitigation measures to avoid recurrence of the emergency situations</li> <li>▶ identification of a preferred mitigation measure(s)</li> <li>▶ timing and responsibility for implementation of the mitigation measure(s).</li> </ul> </li> </ul> <p>Note: The report is to be submitted to the Director-General within 60 days of the exceedance occurring.</p>	<p>Delta representatives advised that there have been no instances where operations have taken place outside the hours stipulated for normal operations.</p> <p>Refer to comments/observations made against MCoA 2.10.</p> <p><b>Not Applicable (trigger instance has not occurred).</b></p>
<ul style="list-style-type: none"> <li>▪ All reasonable and feasible mitigation measures shall be implemented in accordance with the requirements of the Director-General in response to the above mentioned report.</li> </ul>	<p>Not applicable as Delta advised that there have been no instances where operations have taken place outside the hours stipulated for normal operations.</p> <p>Refer to comments/observations made against MCoA 2.10.</p> <p><b>Not Applicable (trigger instance has not occurred).</b></p>



<ul style="list-style-type: none"> <li>▪ The DECC shall be notified prior to undertaking emergency operations.</li> </ul>	<p>Not applicable as Delta advised that there have been no instances where operations have taken place outside the hours stipulated for normal operations.</p> <p>Refer to comments/observations made against MCoA 2.10. <b>Not Applicable (trigger instance has not occurred).</b></p>
<ul style="list-style-type: none"> <li>▪ The Director-General shall be notified after undertaking emergency operations.</li> </ul>	<p>Not applicable as Delta advised that there have been no instances where operations have taken place outside the hours stipulated for normal operations.</p> <p>Refer to comments/observations made against MCoA 2.10. <b>Not Applicable (trigger instance has not occurred).</b></p>
<ul style="list-style-type: none"> <li>▪ All nearby sensitive receivers (as defined in the Noise and Vibration Management Sub-plan) shall be notified prior to 8pm where it is known that emergency operations will be required.</li> </ul>	<p>Not applicable as Delta advised that there have been no instances where operations have taken place outside the hours stipulated for normal operations.</p> <p>Refer to comments/observations made against MCoA 2.10. <b>Not Applicable (trigger instance has not occurred).</b></p>
<ul style="list-style-type: none"> <li>▪ A review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation will be undertaken and lodged with the Director-General following the commencement of operations.</li> </ul>	<p><b>Non-Conformance</b> - A report (ie review of the logistical arrangements for ash haulage and placement to determine the feasibility of reducing the hours of operation) has not been prepared and submitted to the Director-General of DoP by the required date of October 2009.</p> <p>It is noted that after the project approval was obtained (ie 26 November 2008) and prior to the commencement of operations (ie April 2009), Delta Electricity engaged Australia Cost Planners Pty Ltd to undertake a review of the ash haulage operations at Wallerawang Power Station. The report prepared is dated 30 January 2009 (ref: File Reference: 1933). The report assessed the current haulage of furnace and fly ash, in particular the capacity constraints of the haulage operations. The report concluded that "any reduction in the operational hours would have the effect of initially delaying the transport of ash at the expense of slightly higher truck movements after the hour of 8am. Effectively any change in time will concentrate truck movements and associated noise over a later time frame".</p>
<ul style="list-style-type: none"> <li>▪ If, as a result of the review, it is determined that ash haulage and placement times can commence later and/or finish earlier, Delta shall aim to observe the reduced hours whenever possible.</li> </ul>	<p><b>Refer to above comment and Non-Conformance.</b></p>
<ul style="list-style-type: none"> <li>▪ The Contractor shall limit truck movements and ash placement activities to the designated haul roads and ash repository boundaries as defined in Figure 2-1.</li> </ul>	<p>Site observations on 25 March 2010 confirmed trucks remaining within the designated haul roads and ash repository boundaries. <b>Compliance.</b></p>



<ul style="list-style-type: none"> <li>▪ Ash haulage trucks shall adhere to a maximum speed limit of 80km/hr whilst on the haul road and within the ash repository area.</li> </ul>	<p>Site observations on 25 March 2010 confirmed trucks adhering to the designated speed limits whilst on the haul road and within the ash repository area.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ The bund of capping shall be maintained at least 500mm above the surface of the ash placed to reduce the area exposed to wind-blown dust events.</li> </ul>	<p>Site observations on 25 March 2010 confirmed bund capping requirement with respect to limiting the area exposed to wind-blown dust events.</p> <p>The Bilfinger Berger Services' Weekly Ash Placement Work Schedule Kerosene Vale – Week Ending 29 March 2010 – requires that a berm of 0.5m in height on the external boundary is maintained.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ The area of uncovered ash face shall be minimised as much as possible through the use of a staged stacking approach to reduce the possibility of wind-blown dust events.</li> </ul>	<p>Ash placement activities involve a staged stacking approach. The main dust control mechanism/practice employed to control wind-blown dust is the use of an extensive sprinkler system.</p> <p>No wind-blown dust was observed during site inspection on 25 March 2010 where there was a strong and steady breeze.</p> <p>It should be noted that a wind speed measurement was taken by Delta Electricity at 1.54pm at the repository. The recorded wind speed was 16.6 km/hr (~4.6 m/s). A wind speed of 2 m/s was also recorded at 10.30am at the Mount Piper weather station.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ On-site storage of ash shall be maximised through filling placement areas to capacity by using small lifts and compaction techniques to minimise void creation and surface infiltration. Layers must not exceed thicknesses that prevent appropriate compaction from being achieved. Note: Maintenance of 15-20% moisture levels in the ash to be placed will assist in achieving this goal.</li> </ul>	<p>Lifts range in thickness ranging from 0.5m to 1.0m as required to ensure compaction is required.</p> <p>As of the end of January 2010, the rolling contract average compaction result was tracking at 93.6%.</p> <p>Ash moisture contents have not fallen below the 15-20%.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ Regular compaction testing shall be undertaken on a regular basis throughout ash placement operations.</li> </ul>	<p>Sighted March 2009, June 2009, October 2009, December 2009 and January 2010 Monthly Client Reports prepared by Bilfinger Berger Services, which present the results of compaction testing and associated ash moisture content.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ Once the active ash surface reaches the design height of 940m AHD, the area shall be capped and rehabilitated as soon as practical to minimise erosion.</li> </ul>	<p>Not yet applicable as the ash surface height is yet to reach 940m AHD.</p> <p><b>Not Applicable (trigger height has not been reached yet).</b></p>

<ul style="list-style-type: none"> <li>▪ The ash placement plan shall be developed to ensure it provides Centennial Coal a finite opportunity for removal of coal resources prior to ash placement at the nominated areas within the repository site. Note: The areas nominated for mining interests are outlined in Figure 6-1.</li> </ul>	Refer to comments/observations made against MCoA 2.2. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>▪ Delta shall seek to obtain agreement with Centennial Coal on a final date after which all of the coal resources are to be extracted from the nominated areas.</li> </ul>	Refer to comments/observations made against MCoA 2.2. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>▪ Should the removal of coal resources from the nominated areas not be commenced by the date agreed to by Delta and Centennial Coal, Delta reserves the right to commence the placement of ash at the nominated areas under the provisions of the Project Approval. The staging of the placement strategy is outlined in Figure 6-2. Note: Delta will notify Centennial Coal of its intentions to commence the placement of ash at these locations.</li> </ul>	Refer to comments/observations made against MCoA 2.2. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>▪ All equipment, machinery and vehicles associated with the ash placement shall be operated and maintained in a manner that minimises the potential for oil and grease spills/leaks.</li> </ul>	Refer to comments/observations made against MCoA 2.32. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>▪ The Contractor shall undertake daily equipment, machinery and vehicle inspections. Corresponding checklists shall be completed on a daily basis, ensuring no vehicles are operational unless in compliance with the checklist.</li> </ul>	Refer to comments/observations made against MCoA 2.32. <b>Compliance.</b>



<ul style="list-style-type: none"> <li>Continue discussions on ash reuse options and opportunities with regulators, and continue to contribute to and support research to assess, improve and explore new reuse options for fly and bottom ash.</li> </ul> <p>Note: The aim is to encourage the development and use of ash for agricultural applications and promote cooperation and joint responsibility for management of ash between Centennial Coal mine and power station operators.</p>	<p>The project commenced in April 2009. A long-term ash management strategy (i.e. a report) was required to be submitted to the Director-General DoP within six months of the commencement of operations (ie by October 2009). Delta Electricity advised that no formal strategy (i.e. a report) exists or has been submitted to the Director-General DoP.</p> <p>Delta Electricity Representative (Asset Manager – External Plant) was able to provide the following commentary regarding their long-term ash management strategy:</p> <ul style="list-style-type: none"> <li>The responsibility for the development of a long term ash management strategy has recently been assigned to Delta Electricity's General Manager Development, which is a corporate position as opposed to a project/facility based role.</li> <li>In January 2010 Delta Electricity received a proposal from DMC Advisory Pty Ltd regarding a proposed strategy development of aggregates and other bulk use applications of fly ash. Delta has engaged DMC Advisory Pty Ltd to undertake their proposed work.</li> <li>Delta Electricity is supporting a research program being conducted by Curtin University regarding ash reuse.</li> <li>Delta Electricity is currently assessing whether to support a research program proposed by the University of Wollongong which will look at fly ash reuse in cement products.</li> <li>Delta is currently in partnership with Vecor as part of a preliminary assessment of a block making plant within the grounds of Wallerawang Power Station, that would use ash as a key input.</li> <li>On 1 December 2009 Delta Electricity was represented at Power Station Ash Management conference held in the Hunter Valley.</li> </ul> <p>At this point in time the project been in operation for approximately one year and as such the two yearly update required by the Director-General DoP is not yet required.</p> <p><b>Non-Compliance</b> – A report (ie long-term ash management strategy) has not been submitted to the Director-General of DoP by the required date of October 2009.</p> <p>Refer to above observations/comments, non-compliance and associated recommendation.</p> <p>Refer to observations/comments made against MCoA 2.1.</p> <p><b>Non-Compliance – As above.</b></p>
<ul style="list-style-type: none"> <li>Prepare a long-term ash management strategy including a program for investigation and assessment of alternative ash management measures with a goal of 40% reuse of ash by 31 December 2013.</li> </ul> <p>Note: The report shall be submitted to the Director-General.</p>	



<ul style="list-style-type: none"> <li>Report on the status and outcomes of its ash reuse investigations to the Director-General every two years from the commencement of operations unless otherwise agreed by the Director-General.</li> </ul>	<p>Not yet applicable given that commencement of ash placement operations started in April 2009.</p> <p>Refer to previously identified non-compliance and associated recommendation and comments/observations made against MCoA 2.1.</p> <p><b>Not Applicable (trigger date not yet reached).</b></p>
<ul style="list-style-type: none"> <li>Disturbance to the western portion of the ash repository shall be limited to reduce the potential for inadvertent disturbance of the Aboriginal heritage values of the area</li> </ul>	<p>Delta representatives advised that no works have been or would be undertaken in the western portion of the ash repository. Site observations made during the on site review component of this assessment confirm that the area in question is covered by natural bush vegetation and has not been disturbed as part of the project.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Should any heritage sites or items be discovered during operation, all works likely to affect the sensitive area are to cease immediately and reported to the DECC Regional Archaeologist, the Bathurst Local Aboriginal Land Council, or the NSW Heritage Office, so that an appropriate course of action can be determined.</li> </ul>	<p>Sighted Biffinger Berger Services document BBS-PC-726 – <i>Environmental Management Controls for Cultural Heritage</i> (undated). The document outlines procedural details for protecting heritage items and is included in the site induction for all workplace personnel.</p> <p>Delta representatives advised that there have been no heritage related incidents to date associated with the operation of the project.</p> <p><b>Not Applicable (no such event to date).</b></p>
<ul style="list-style-type: none"> <li>The Annual Environmental Management Report will be submitted to the Director-General complete with ash management progress assessed throughout the year.</li> </ul>	<p>This OEMP requirement relates to the requirement for Delta to prepare and submit an Annual Environmental Management Report (AEMR) as per the requirement of MCoA 7.3.</p> <p>This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p> <p><b>Compliance.</b></p>

#### Other Observations and Evidence

None.

### Noise and vibration management Sub Plan (from OEMP)

<b>Targets</b>	<ul style="list-style-type: none"><li>▪ Achieve compliance with the noise criterion of <math>L_{Aeq}</math> of 40dB(A) at the nearest most affected receiver during normal operations.</li><li>▪ Achieve a significant reduction in the number of noise-related complaints during emergency operations (less than 5 per year, stretch target = zero complaints per year).</li></ul>
<b>Indicators</b>	<ul style="list-style-type: none"><li>▪ The number of noise-related complaints.</li><li>▪ Noise monitoring data obtained from the sensitive receiver locations</li><li>▪ Compliance indicators as assessed by the specialist noise consultant and the Environmental Representative, as required.</li><li>▪ Observed and monitored reduction in noise generation due to adaptation where necessary of engineering measures on trucks, the implementation of operating techniques such as limited compression braking and speed limit restrictions</li></ul>

### Performance with respect to OEMP Targets

The Stage 2 Kerosene Vale Ash Repository Operational Noise Review (September 2009) demonstrated that operations comply with the noise criterion.

This Annual Environmental Management Report covers the first year of ash placement operations (April 2009 to April 2010). During this period there have been no emergency operations as defined by the Project Approval and associated Minister's Conditions of Approval.

### Performance Assessment based on Compliance Assessment Observations (detailed below)

The majority of OEMP requirements with respect noise and vibration management were found to be complied with.

With respect to non-conformances, this review has identified that the OEMP requirements for ongoing operational noise monitoring and associated reporting have not been implemented.

### Management and Mitigation Measures

### Compliance Assessment Observations

<p>The findings of the Operational Noise Review undertaken as per the requirements of MCoA 3.2 demonstrated compliance with this requirement.</p> <p>Delta Electricity representatives advised that since the Stage 2 Kerosene Vale Ash Repository Operational Noise Review no further noise monitoring has been undertaken.</p> <p>The Project's approved OEMP provides guidance as to the required Operational Noise Monitoring Program in the following sections:</p> <ul style="list-style-type: none"> <li>▪ Section 5.2 Environmental Monitoring Program (Table 5-1, Noise – Normal Conditions).</li> <li>▪ Appendix A: KVAR Stage 2 Operations, Operational Noise and Vibration Management Plan Section 7.2 Ongoing Operational Noise Monitoring (COA 3.3).</li> </ul> <p>The Stage 2 Kerosene Vale Ash Repository Operation Noise Review made the following recommendation with respect to ongoing operational noise monitoring:</p> <p><i>To minimise potential for noise impact creep and to preserve acoustic amenity at the nearest receivers, noise management measures have been recommended, including – “as required by CoA 3 and as part of due diligence practice, routine monitoring of ambient noise levels will be undertaken in the surrounding environment at a 6 monthly frequency or when peak Stage 2 fly ash operations are increased from typical existing daily movements”.</i></p> <p>As the Stage 2 Kerosene Vale Ash Repository Operation Noise Review was completed in September 2009, it can be reasonable expected that the first 6 monthly operational noise monitoring event would have been undertaken in March 2010.</p> <p>At the time that this AEMR was being prepared, there was no evidence of ongoing operational noise monitoring being undertaken.</p> <p><b>Compliance with respect to Operational Noise Review requirements.</b>  <b>Non-Compliance with respect to ongoing noise monitoring requirements.</b></p>	<ul style="list-style-type: none"> <li>▪ Noise levels shall not exceed an <math>L_{Aeq}</math> of 40dB(A) at the nearest most affected receiver</li> </ul>
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<ul style="list-style-type: none"> <li>▪ The distance between noisy plant, equipment and sensitive receptors shall be maximised where possible or practicable.</li> </ul>	<p>Site Observation – Based on the location of the project site, the surrounding land uses and existing constraints, the distance between noisy plant, equipment and sensitive receptors shall be maximised where possible or practicable.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ All noise intensive works shall be scheduled between late morning to early evening periods to minimise impact on sensitive receivers, including peak periods (where transportation noise dominates), when possible or practicable.</li> </ul>	<p>Site Observation (25 March 2010) – Ash placement operations are not particularly noise given the work practices and equipment employed (refer to observations/comments made against MCoA 2.16).</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ No onsite activities or engines shall be started before the prescribed start time of 7:00am.</li> </ul>	<p>Operations are complying with this requirement (refer to observations/comments made against MCoA 2.8).</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ All equipment and plant used on the Project shall meet the typical noise levels presented in AS 2436.</li> </ul>	<p>AS 2436 relates provides guidance to noise control on construction, maintenance and demolition sites.</p> <p>The Project is subject to a specific noise criterion as detailed in MCoA2.15. The findings of the Operational Noise Review undertaken (as per the requirements of MCoA 3.2) demonstrated compliance with the specific noise criterion.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ All equipment shall be adequately maintained and kept in good operating order.</li> </ul>	<p>Site Observations on 25 March 2010 confirmed that all equipment was operated in an appropriate and efficient manner. In addition refer to observations/comments made against MCoA 2.16 and MCoA 2.32.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ All equipment shall be operated in an appropriate and efficient manner.</li> </ul>	<p>Site Observations on 25 March 2010 demonstrated that all equipment was operated in an appropriate and efficient manner. In addition refer to observations/comments made against MCoA 2.16 and 2.32).</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ Any unusually noisy equipment will be investigated and rectified as soon as practicable.</li> </ul>	<p>Site Observations on 25 March 2010 – Equipment used to perform ash placement works consist of a) 2 x ash haulage truck b) bulldozer c) smooth drum compactor and d) water cart. These equipment items are not considered unusually noisy equipment. In addition, refer to observations/comments made against MCoA 2.16 and 2.32.</p> <p><b>Compliance.</b></p>

<ul style="list-style-type: none"> <li>Noise issues shall be discussed as part of routine 'tool box' talks to keep staff aware of current operations and potential noise issues.</li> </ul>	<p>Sighted Biflanger Berger Services Ash Repository Site Induction presentation. Induction reinforces that BBS has a responsibility to comply with the conditions of Delta's Environment Protection Licence. Noise pollution and noise monitoring referred to in induction material as is the need for BBS personnel to report any environmental breaches.</p> <p>Sighted Biflanger Berger Services induction records, which includes the date induction was undertaken and the expiry date (which is set for 1 year)</p> <p>Sighted Biflanger Berger Services Work Instruction dated 4 March 2009, issued to all BBS personnel associated with ash placement activities RE: APA Contractual, Operational and Health Safety &amp; Environmental Obligations.</p> <p>Sighted Biflanger Berger Services Toolbox Meeting Work Instruction and Participation Record dated 18 May 2010 which covers tailgate closure (of haulage trucks) and associated noise.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Use of audible reversing alarms on plant machinery shall be limited to normal operations (i.e. 7am – 10pm periods).</li> </ul>	<p>Delta Electricity representatives advised that since the commencement of operations there have been no instances of operations taking place outside of the specified normal operating days/hours. (Refer to observation/comments made against MCoA 2.10)</p> <p>Site observation of haulage operations confirmed that haulage trucks and water cart are operated in a forward (ie one way loop) direction, which limits the sounding of reversing alarms. Plant/equipment such as the bulldozer and smooth drum compactor are required to operate in both forward and reserve directions to perform their work.</p> <p>Refer to observations/comments made against MCoA 2.16.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>The use of alternate warning devices on plant machinery shall be used during emergency operations (subject to OHS requirements)</li> </ul>	<p>Delta Electricity representatives advised that since the commencement of operations there have been no instances where "Emergency Operations" as per MCoA 2.10 have been required.</p> <p><b>Not Applicable (trigger event/instance has not occurred).</b></p>
<ul style="list-style-type: none"> <li>All ash trucks shall be fitted with residential class mufflers.</li> </ul>	<p>The ash haulage truck fleet consists of two new Mercedes-Benz Actros 4144 AK 8x8 trucks. Both units were fitted with the manufacturer's supplied exhaust/muffler systems.</p> <p>Refer to observations/comments made against MCoA 2.16.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Ash trucks may also be fitted with engine shrouds, body dampening and rubber stoppers on tail gates prior to operation, where feasible.</li> </ul>	<p>Refer to observations/comments made against MCoA 2.16.</p> <p><b>Compliance.</b></p>



<ul style="list-style-type: none"> <li>Drivers shall obey all existing haul road speed limits (i.e. maximum of 80 km/h) and be instructed to avoid using compression braking where feasible.</li> </ul>	Refer to observations/comments made against MCoA 2. 16. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>Ash trucks shall travel on a one-way system to minimise the need for reversing and/or queuing of vehicles.</li> </ul>	Refer to observations/comments made against MCoA 2. 16. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>Noise reduction techniques applied to ash trucks shall be routinely inspected and maintained to ensure required operational efficiency.</li> </ul>	Refer to observations/comments made against MCoA 2. 16 and MCoA 2.32. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>A log of ash trucks as they leave the silo facility shall be maintained to record ash truck volumes during peak 15 minute, daytime, evening and emergency operation periods.</li> </ul>	Delta Electricity representatives advised that since the commencement of ash placement operations in April 2009 there have been no emergency ash placement operations. For normal ash placement operations refer to comments/observations made against MCoA 2.8. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>Peak ash truck movement shall not exceed 6 trucks per 15 minute period during normal operations.</li> </ul>	The ash haulage truck fleet consists of two trucks. Site observations on 25 March 2010 confirmed that ash haulage truck movements did not exceed 6 trucks per 15 minute period. Refer to observations/comments made against MCoA 2.8. <b>Compliance.</b>
<ul style="list-style-type: none"> <li>Liaison with Centennial Coal commenced in September 2008 in order to develop a co-operative noise management protocol for the use of the private haul road. The liaison is expected to gain in momentum over the next two years.</li> </ul>	Sighted Delta Electricity email dated 27 April 2010 which summarises a meeting that was held between Delta and Centennial Coal personnel on 24 April 2010. The summarises indicates that Centennial Coal will be responsible for items such as noise bund, noise monitoring, rehabilitation of noise wall and haul road relocation. Delta Electricity and Centennial Coal continue to maintain ongoing liaison where their respective operations and projects interface. It is noted that there has only been one noise complaint (29 May 2009) made against the project during the first year of operation.
<ul style="list-style-type: none"> <li>A review of the noise performance of the Stage 2 ash repository operations shall be undertaken to assess compliance with the prescribed noise criterion of <math>40\text{dB(A)}_{\text{Laeq, 15min}}</math> at the nearest noise sensitive receivers. Note: Refer to the Operational Noise and Vibration Management Plan, Appendix A for further details.</li> </ul>	<b>Compliance.</b> Refer to observations/comments made against MCoA 3.2. <b>Compliance.</b>



<ul style="list-style-type: none"> <li>Based on the results of the operational noise review (above), a comprehensive noise risk matrix shall be developed to provide key response actions that will proactively avoid or minimise noise impacts at the noise sensitive receivers.</li> </ul> <p>Note: Refer to the Operational Noise and Vibration Management Plan, Appendix A.</p>	<p>The Stage 2 Kerosene Vale Ash Repository Operation Noise Review made the following recommendation with respect to ongoing operational noise monitoring:</p> <ul style="list-style-type: none"> <li><i>Routine maintenance of fly ash truck is to be carried out to ensure engine and mechanical component efficiency, minimisation of exhaust noise breakout and appropriate tyre pressure and tread requirements.</i></li> <li><i>As required by MCoA 3 and as part of due diligence practice, routine monitoring of ambient noise levels will be undertaken in surrounding environment for the determination of potential operational influence on noise environs and compliance with the adopted 40dB(A) LAeq, 15min noise criterion.</i></li> <li><i>Periodic operational noise monitoring shall be carried out at a minimum 6 monthly frequency. Within 14 days of completing the noise monitoring any non-compliance with the noise criterion shall be reported to the DECC (now DECCW) and the Director-General (of Department of Planning).</i></li> <li><i>Where Stage 2 fly ash truck operations are increased from typical existing daily movements resulting in an increased frequency of peak 15-minute pass by events day time 7 trucks day time period or evening 6 trucks evening period; monitoring of ambient noise levels will be undertaken at nearest receiver location for the determination of compliance with adopted operational noise criteria.</i></li> <li><i>The noise monitoring methodology in the OEMP be amended to include the measurement of fly ash truck Sound Exposure Level (SEL) pass by events at the nearest receiver locations.</i></li> <li><i>Further monitoring of fly ash truck source noise levels is to be undertaken adjacent to the haul road to, where feasible identify dominant truck operational noise influence and refine fly ash truck Sound Power Level (SWL) adopted in the operational noise model.</i></li> </ul> <p><b>Compliance.</b></p>
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<ul style="list-style-type: none"> <li>Observed attended noise monitoring throughout the initial 60 day reporting period shall be undertaken at sensitive receivers as outlined in the Operational Noise and Vibration Management Plan, Appendix A.</li> </ul>	<p>Refer to observations/comments made against MCoA 3.2.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Observed attended noise monitoring and assessment of compliance of operations shall be undertaken at sensitive receivers on a periodic basis, or as a result of a complaint or due to change in operations. Note: Refer to the Operational Noise and Vibration Management Plan, Appendix A for further details.</li> </ul>	<p>As the Stage 2 Kerosene Vale Ash Repository Operation Noise Review was completed in September 2009, it can be reasonable expected that the first 6 monthly operational noise monitoring event would have been undertaken in March 2010.</p> <p>At the time that this AEMR was being prepared, there was no evidence of ongoing operational noise monitoring being undertaken.</p> <p>On 29 May 2009, Delta received adverse response from a resident in relation to day noise from Stage 2 fly ash truck operations on the haul road. Upon investigation by Delta personnel, it was determined that on 29 May 2009 the new fly ash trucks were temporarily replaced with the previous twin trailer Stage 1 trucks due to short term ash loading issues. On 30 May 2009, normal fly ash truck operations were resumed (ie new trucks back in operation) and the complaint was satisfactorily resolved with no further complaint or adverse comment from the resident. No noise investigation to measure or otherwise determine potential received noise influence from Stage 2 operations at the complainant property were considered necessary.</p> <p><b>Non-Conformance</b> with respect to conducting ongoing operation noise monitoring.</p>
<ul style="list-style-type: none"> <li>Attended ambient noise monitoring shall take place at a maximum of 5 residential receiver locations (incl. Skelly Road, Neubeck, Wolgan Road and Maddox Lane) and shall provide periodic 15-minute ambient noise levels. Note: Refer to the Operational Noise and Vibration Management Plan, Appendix A for further details.</li> </ul>	<p>At the time that this AEMR was being prepared, there was no evidence of ongoing operational noise monitoring being undertaken since the completion of the Operational Noise Review completed in September 2009.</p> <p><b>Non-Conformance</b> with respect to conducting ongoing operation noise monitoring.</p>
<ul style="list-style-type: none"> <li>Where non compliance with the 40 dB(A) <math>L_{Aeq, 15min}</math> noise criterion is identified through noise monitoring a further assessment of feasible noise management and mitigation measures shall be undertaken and implemented. Note: Refer to the Operational Noise and Vibration Management Plan, Appendix A for further details.</li> </ul>	<p>Based on the Stage 2 Kerosene Vale Ash Repository Operation Noise Review (PB, September 2009, ref. 2116987A, PR_0805) compliance was demonstrated for normal operations.</p> <p>At the time that this AEMR was being prepared, there was no evidence of ongoing operational noise monitoring being undertaken.</p> <p><b>Non-Conformance</b> with respect to conducting ongoing operation noise monitoring.</p>



<ul style="list-style-type: none"> <li>Any identified non-compliance shall be reported to the Director-General within 14 days of completion of all noise monitoring works.</li> </ul>	<p>No non-compliances were identified during the noise monitoring work associated with the Stage 2 Kerosene Vale Ash Repository Operational Noise Review (PB, September 2009, ref: 2116987, PR_0805).</p> <p>At the time that this AEMR was being prepared, there was no evidence of ongoing operational noise monitoring being undertaken.</p> <p><b>Non-Comformance</b> with respect to conducting ongoing operation noise monitoring.</p>
<ul style="list-style-type: none"> <li>A log of noise related incidents shall be kept at the premises. The log shall record all noise complaints, including location, action carried out and outcomes of investigations and measures implemented.</li> </ul>	<p>Delta Electricity operates a centralised database system for complaints. The system was inspected as part of the onsite review component of the Annual Environmental Management Report. The database system addresses the requirements of this condition of approval 5.4 and those of the OEMP.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>The noise management log shall be reviewed on a periodic basis to determined trends.</li> </ul>	<p>Delta Electricity representative provided the following overview as to how noise complaints are managed if they are received.</p> <p><i>All complaints, including noise are maintained in a register in accordance with Environment Protection Licence requirements. Complaints are then investigated and followed up with everything reported at local weekly Team Leader meetings, monthly OHS&amp;E meetings, monthly Western Operations Reviews, quarterly Production Environment Meetings, quarterly Executive Environment Meetings and ultimately to the Board.</i></p> <p>Based on the process outlined above, noise complaint trends (if they exist) would be readily identified.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>In the event of a noise related complaint associated with the operation of Stage 2 activities, an assessment of received noise influence and potential mitigation measures shall be undertaken. Note: Refer to the Operational Noise and Vibration Management Plan, Appendix A for further details.</li> </ul>	<p>On 29 May 2009, Delta received adverse response from a resident in relation to day noise from Stage 2 fly ash truck operations on the haul road. Upon investigation by Delta personnel, it was determined that on 29 May 2009 the new fly ash trucks were temporarily replaced with the previous twin trailer Stage 1 trucks due to short term ash loading issues. On 30 May 2009, normal fly ash truck operations were resumed (ie new trucks back in operation) and the complaint was satisfactorily resolved with no further complaint or adverse comment from the resident. No noise investigation to measure or otherwise determine potential received noise influence from Stage 2 operations at the complainant property were considered necessary.</p> <p><b>Compliance.</b></p>



<ul style="list-style-type: none"> <li>The Operational Noise and Vibration Management Plan shall be reviewed every 2 years. Note: Refer to the Operational Noise and Vibration Management Plan, Appendix A for further details.</li> </ul>	<p>The Operational Noise and Vibration Management Plan (part of the project's approved OEMP) is dated April 2009. The review is required no later than April 2011.</p> <p><b>Not Applicable (trigger date has not been reached).</b></p>
<ul style="list-style-type: none"> <li>Delta Electricity shall issue a report to the DECC every 12 months from commencement of Stage 2 operations. The report shall contain the location, frequency, results, analysis, rationale and the procedures and protocols for noise monitoring and the assessment of compliance with the prescribed criteria. Any deviations from the proposed monitoring program are to be fully justified within the report.</li> </ul>	<p>This OEMP requirement relates to requirement for Delta to prepare and submit an Annual Environmental Management Report (AEMR) as per the requirement of MCoA 3.3. This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p> <p><b>Compliance.</b></p> <p>Refer to observations and comments made against MCoA 3.2.</p>
<ul style="list-style-type: none"> <li>Delta Electricity shall submit for the approval of the Director-General an Operational Noise Review within 60 days of the commencement of Stage 2 operations. The review shall be prepared in consultation with the DECC.</li> </ul>	<p><b>Compliance.</b></p> <p>Refer to observations and comments made against MCoA 3.2.</p>
<ul style="list-style-type: none"> <li>Delta shall prepare in consultation with the DECC, an Operational Noise Monitoring Program to assess compliance against operational noise criterion throughout the life of the project.</li> </ul>	<p>Refer to observations and comments made against MCoA 3.3.</p> <p>The Project's approved OEMP provides guidance as to the required Operational Noise Monitoring Program in the following sections:</p> <ul style="list-style-type: none"> <li>Section 5.2 Environmental Monitoring Program (Table 5-1, Noise – Normal Conditions).</li> <li>Appendix A: KVAR Stage 2 Operations, Operational Noise and Vibration Management Plan Section 7.2 Ongoing Operational Noise Monitoring (COA 3.3)</li> </ul>
<ul style="list-style-type: none"> <li>A report shall be forwarded to the Director-General and the DECC within 14 days of the noise assessment should any non-compliance occur relating to ongoing operational noise monitoring.</li> </ul>	<p><b>Non-Conformance with respect to implementation.</b></p> <p>Refer to observations and comments made against MCoA 3.3</p> <p><b>Unable to assess compliance as ongoing operational noise monitoring has not been undertaken since the Operational Noise Review was completed in September 2009.</b></p>
<ul style="list-style-type: none"> <li>In the case of non-compliance, a report shall be provided to the Director-General within 60 days of completion of monitoring works. Feasible noise mitigation measures shall be considered in the report.</li> </ul>	<p>Refer to observations and comments made against MCoA 2.18.</p> <p><b>Compliance with respect to MCoA 3.2 – Operational Noise Review.</b></p> <p><b>Unable to assess compliance as ongoing operational noise monitoring has not been undertaken since the Operational Noise Review was completed in September 2009.</b></p>

<ul style="list-style-type: none"> <li>▪ The criterion to limit cumulative operational noise levels to below 40 dB(A) <math>L_{Aeq,15min}</math> does not apply where Delta Electricity and the potentially affected landowner have reached a negotiated agreement in regard to noise and a copy of this agreement has been forwarded to the Director-General and the DECC.</li> </ul>	<p>Refer to observations and comments made against MCoA 2.15.</p> <p>Delta Electricity representatives advised that they have not entered into any negotiated agreement in regard to noise with any potentially affected landowner.</p> <p><b>Not Applicable.</b></p>
<ul style="list-style-type: none"> <li>▪ The Annual Environmental Management Report will be submitted to the Director-General complete with noise monitoring data gathered throughout the year.</li> </ul>	<p>This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p> <p><b>Compliance.</b></p>

**Other Observations and Evidence.**

None.

### Surface water quality Sub Plan (from OEMP)

<b>Targets</b>	<ul style="list-style-type: none"> <li>▪ The water quality within Sawyers Swamp Creek is not impacted by Stage 2 operations.</li> <li>▪ Zero environmental incidents that relate to pollution of waters at Sawyers Swamp Creek.</li> </ul>
<b>Indicators</b>	<ul style="list-style-type: none"> <li>▪ The surface water monitoring results and the assessment of water quality in accordance with the ANZECC guidelines.</li> <li>▪ No visual evidence of erosion and sedimentation impacts on Sawyers Swamp Creek following significant rain events.</li> <li>▪ Records of trend analysis, management procedures and observations for each of the nominated monitoring locations</li> </ul>

### Performance with respect to OEMP Targets

Based on the information reviewed and the site observations made, the operations of the Stage 2 Kerosene Vale Ash Repository are meeting the target of zero environmental incidents that relate to pollution of waters at Sawyers Swamp Creek.

The Aurecon (2010) report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010" indicates that their preliminary assessment of the Stage II placement effects showed that rainwater had infiltrated beneath the Stage II dry ash and had leached some trace metals and elements from the flyash. However, the groundwater was apparently held above the Kerosene Vale Ash Dam clay capping due to its relatively low permeability. This effectively limited the movement of the groundwater off-site, so that the assessment of effects on receiving water quality, including selenium, shown no significant effects, or that the effects were undetectable against the highly modified catchment conditions.

Based on the Aurecon (2010) assessment it appears that the water quality within Sawyers Swamp Creek is not impacted by Stage 2 operations.

### Performance Assessment based on Compliance Assessment Observations (detailed in following section)

The majority of the OEMP requirements with respect to surface water quality were found to be complied with.

With respect to non-conformances, this review has identified that two OEMP requirements were have not been enacted. The first, being that the 25ML Storage Pond has not been established. The second, being the established of two surface water monitoring sites in Sawyers Swamp Creek as per the OEMP. It should be noted that the Aurecon (2010) report was able to use an existing surface water monitoring site in Sawyers Swamp Creek (WX7) in lieu of the two additional surface water monitoring site.

It is noted that the Aurecon (2010) report provides a number of recommendations with respect to surface water quality management for Delta Electricity's consideration.



## Management and Mitigation Measures

### Evidence sighted in assessing compliance

<ul style="list-style-type: none"> <li>All clean water shall be diverted around exposed ash surfaces and into surface drains which discharge into Sawyers Swamp Creek.</li> </ul>	<p>Site observations made during the onsite review component of this assessment confirm that all clean water is diverted around exposed ash surfaces and into surface drains which discharge into Sawyers Swamp Creek.</p> <p>Site observations of ash placement operations confirmed that there is no evidence that sediments and pollutants from the operation of the project have entered waterways.</p> <p>Site observations confirm that surface water management within the stage 2 ash repository area is self contained and drains to an internally located "dirty water" pond.</p> <p>Collected "dirty water" is beneficially reused by the ash repository operations eg dust suppression and as needed by other Wallerawang Power Station activities.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>All runoff from the plantation area (south east of ash repository) and revegetated areas shall be diverted to the return water channel back to WWPS using earth bunds and constructed spoon drains.</li> </ul>	<p>Site observations made during the onsite review component of this assessment confirm that all runoff from the plantation area (south east of ash repository) and revegetated areas are diverted to the return water channel leading back to the Wallerawang Power Station using earth bunds and constructed spoon drains.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Dirty water from all disturbed areas shall be diverted to the 3ML collection pond (sedimentation basin) where it shall either be used on site for dust suppression and moisture control of ash, or pumped to the return water channel for further treatment and re-use at WWPS.</li> </ul>	<p>Site observations confirm that surface water management within the stage 2 ash repository area is self contained and drains to an internally located "dirty water" pond.</p> <p>Collected "dirty water" is beneficially reused by the ash repository operations eg dust suppression and as needed by other Wallerawang Power Station activities.</p> <p><b>Compliance.</b></p>

<ul style="list-style-type: none"> <li>Any overflows from the 3ML collection pond shall be pumped to the 25ML storage dam. This water-retention system shall be established to serve as a water collection basin to ensure that all site runoff is captured for further treatment and re-use at WWPS to minimise impacts on Sawyers Swamp Creek.</li> </ul>	<p>Delta Electricity engaged Aurecon to assess the effects of a) the initial Stage 2 dry ash placement, in the Kerosene Vale Ash Repository (KVAR), on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam (SSCAD) seepage on Sawyers Swamp Creek and local groundwater.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon Report:</p> <p><i>Delta Electricity has advised that the 25ML Storage Pond was not installed, due to concerns regarding possible seepage of water from the pond into the groundwater under the Stage II dry ash placement. As an alternative, water is constantly pumped at 22kL/day from the Runoff Collection Pond (i.e. the 3ML collection pond) to the power station SSCAD water return canal</i></p> <p>The Aurecon (2010) report recommends that Delta Electricity investigate how it would manage runoff from high rainfall events (e.g. 1 in 100 year events), which was proposed to be held by the 25ML Storage Pond.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Water from the 25ML storage dam shall either be used for dust suppression onsite or pumped to the return water channel for further treatment and re-use at WWPS.</li> </ul>	<p>Site observations confirm that surface water management within the stage 2 ash repository area is self contained and drains to an internally located "dirty water" pond, which is the 3ML collection pond.</p> <p>The 25ML Storage Pond has not been established.</p> <p>Collected "dirty water" is beneficially reused by the ash repository operations eg dust suppression and as needed by other Wallerawang Power Station activities.</p> <p><b>Compliance.</b></p>

<p>■ The 25ML storage dam shall be used as a retention area to contain overflows from dirty water catchment during extreme storm events. The water shall then be used on site or pumped to the return water channel for further treatment and re-use at WWPS.</p>	<p>Site observations confirm that surface water management within the stage 2 ash repository area is self contained and drains to an internally located "dirty water" pond, which is the 3ML collection pond.</p> <p>The 25ML Storage Pond has not been established.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon Report:</p> <p><i>Delta Electricity has advised that the 25ML Storage Pond was not installed, due to concerns regarding possible seepage of water from the pond into the groundwater under the Stage II dry ash placement. As an alternative, water is constantly pumped at 22kL/day from the Runoff Collection Pond (i.e. the 3ML collection pond) to the power station SSCAD water return canal</i></p> <p>The Aurecon (2010) report recommends that Delta Electricity investigate how it would manage runoff from high rainfall events (e.g. 1 in 100 year events), which was proposed to be held by the 25ML Storage Pond.</p> <p><b>Non-Compliance</b> – The 25ML Storage Pond has not been installed.</p>
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<ul style="list-style-type: none"> <li>▪ The area of exposed ash face will be limited to about 1.5 hectares to minimise the volume of dirty water runoff generated and stored on-site, should there be a significant rain event.</li> </ul>	<p>Site observations confirm that surface water management within the stage 2 ash repository area is self contained and drains to an internally located "dirty water" pond.</p> <p>Collected "dirty water" is beneficially reused by the ash repository operations eg dust suppression and as needed by other Wallerawang Power Station activities.</p> <p>The surface water management arrangements in place avoids the ponding/pooling of water at or near the boundaries of the stage 2 ash repository area and the associated potential for an uncontrolled released into the surrounding environment.</p> <p>Delta's ash placement contractor (Bliffinger Berger Services) undertakes a risk assessment with respect to wet weather working conditions for safety purposes.</p> <p>Delta representatives advised that there have been no significant rainfall events since the commencement in April 2009 of ash placement operations in stage 2.</p> <p>Rainfall data recorded at nearby Mount Piper for the period April 2009 to April 2010 was sighted. The following are the monthly rainfall totals, which indicate that there have been no significant rainfall events since the operations commenced in April 2009. (62mm, 33mm, 46mm, 46mm, 51.2mm, 45.6mm, 54.8mm, 30.8mm, 88.6mm, 179.8mm, 120.6mm, 68.8mm, 44.2mm).</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ Capping and revegetation of completed areas shall be undertaken as soon as practicable after reaching the maximum AHD, with total disturbed area limited to a maximum of 5 hectares at any one time.</li> </ul>	<p>Not yet applicable as the ash surface height is yet to reach 940m AHD.</p> <p><b>Not Applicable.</b></p>
<ul style="list-style-type: none"> <li>▪ All works in disturbed areas shall be restricted during heavy rainfall events.</li> </ul>	<p>Delta representatives advised that there have been no significant rainfall events since the commencement of ash placement operations in Stage (ie since April 2009).</p> <p>Delta's ash placement contractor (Bliffinger Berger Services) undertakes a risk assessment with respect to wet weather working conditions for safety purposes.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ Operations-related earthworks shall not be undertaken within 50m of Sawyers Swamp Creek where reasonable and feasible.</li> </ul>	<p>Site observations made during the onsite review component of this assessment confirm that no earthworks are being undertaken within 50m of Sawyers Swamp Creek.</p> <p><b>Compliance.</b></p>

<ul style="list-style-type: none"> <li>▪ All equipment, machinery and vehicles associated with the operation of the Project shall be operated and maintained in a manner that minimises the potential for oil and grease spills/leaks</li> </ul>	<p>Refer to commentary and observations made against MCoA 2.32.</p> <p><b>Compliance.</b></p> <p>No vegetation clearance has taken place in the Kerosene Vale Stage 2 Ash Repository area.</p> <p>Site observations made during the onsite review component of this assessment confirmed that mulched vegetative material has been used and is stockpiled in the Stage 1 ash repository area.</p>
<ul style="list-style-type: none"> <li>▪ Cleared vegetation shall be mulched, chipped or re-used on-site for sediment filter fences or other uses, where appropriate.</li> </ul>	<p><b>Compliance.</b></p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon report. The following text is an extract from the Aurecon (2010) report with respect to the surface water monitoring sites:</p> <p><i>Surface water monitoring at two sites in Sawyers Swamp Creek – although the OEMP labelled these sites as "established", it was found that they did not exist at the time of preparation of the OEMP and were not included as part of the monitoring program after the Stage II placement began. In the absence of these sites, the existing receiving water site in Sawyers Swamp Creek, WX7, was used.</i></p> <p>From the information presented in the Aurecon (2010) report the surface water monitoring locations are as follows:</p> <ul style="list-style-type: none"> <li>▪ Sawyers Swamp Creek (site: WX7)</li> <li>▪ Dump Creek (site: WX11)</li> <li>▪ Lidsdale Cut (site: WX5)</li> <li>▪ Sawyers Swamp Creek Ash Dam.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Water quality monitoring will be undertaken at the four existing monitoring locations: Two within Sawyers Swamp Creek, one within Dump Creek, and one within the Sawyers Swamp Creek Ash Dam. Refer to Figure 6-3 for location details. (refer to OEMP regarding the frequency of monitoring required in year 1 and subsequent years).</li> </ul>	<p><b>Non-Conformance</b> – with respect to the establishment and monitoring of surface water at two sites in Sawyer Swamp Creek as per OEMP. However, the Aurecon (2010) used the existing receiving water site in Sawyers Swamp Creek, X7.</p>

<p>▪ The following analytes will be monitored in addition to those outlined in Table A of Appendix C:</p> <ol style="list-style-type: none"> <li>1. dissolved oxygen</li> <li>2. turbidity</li> <li>3. total phosphorus</li> <li>4. total nitrogen</li> </ol>	<p>Sighted spreadsheet that presents tabulated results of laboratory testing of water samples (including surface water samples). Analytes tested and reported include: pH, alkalinity, conductivity, dissolved solids, total mercury, chloride, fluoride, sulphate, total aluminium, total arsenic, total barium, total beryllium, total boron, total cadmium, total calcium, total chromium, total copper, total lead, total magnesium, total molybdenum, total nickel, total potassium, total selenium, total silver, total sodium, total zinc, iron-filtered and manganese-filtered.</p> <p>Surface water samples are analysed by Nalco Analytical Resources (NATA Accreditation Number 1099, Site Number 1092). Testing of samples for As, Cd, Cr, Cu, Pb, Hg and Ag is outsourced to National Measurement Institute (NATA registration number 198) – sighted various May 2010 water analysis reports issued by Nalco.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon report, which reports that Nalco Analytical Resources measure conductivity, pH and temperature in the field with a calibrated instrument.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon report. The following text is an extract from the Aurecon (2010) report with respect to dissolved oxygen, turbidity, total phosphorus and total nitrogen:</p> <p><i>It is understood that these additional characteristics were required for the planned Sawyers Swamp Creek diversion around the Stage II area. However, the need for the diversion was overcome by limiting the Stage II area.</i></p> <p><b>Compliance–</b> with respect to list of analytes tested versus what is stated in the OEMP.  <b>Not Applicable</b> (with respect to monitoring for dissolved oxygen, turbidity, total phosphorus and total nitrogen).</p>
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<ul style="list-style-type: none"> <li>▪ Additional surface water monitoring will be undertaken following wet weather events, with a minimum of 2 events recorded within the first 12 months of operation, to ensure that the implemented water quality management controls are operating effectively and preventing impacts during wet weather events.</li> </ul>	<p>Delta representatives advised that there have been no significant rainfall events since the commencement of stage 2 operations, which started in April 2009.</p> <p>Rainfall data recorded at nearby Mount Piper for the period April 2009 to April 2010 was sighted. The following are the monthly rainfall totals, which indicate that there have been no significant rainfall events since the operations commenced in April 2009. (62mm, 33mm, 46mm, 46.6mm, 51.2mm, 45.6mm, 54.8mm, 30.8mm, 88.6mm, 179.8mm, 120.6mm, 68.8mm, 44.2mm).</p> <p><b>Not Applicable</b> – with respect to significant rainfall events.</p>
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<ul style="list-style-type: none"> <li>Water quality monitoring results shall be assessed in conjunction with the baseline data provided in Table B of Appendix C, and against the baseline condition as assessed in the Environmental Assessment with the ANZECC 2000 – Freshwater Aquatic Ecosystems guidelines (95% PL) to be used as a reference point.</li> <li>In the case of exceedances, the response taken must be documented within the report. Any deviations from the proposed monitoring program must also be justified.</li> </ul>	<p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon (2010) report:</p> <p>Surface water quality was monitored in Sawyers Swamp Creek (WX7), Dump Creek (WX11), at WX5 for Lidsdale Cut and in the Sawyers Swamp Creek Dam pond.</p> <p>Seepage from the (capped) Kerosene Vale Ash Dam (that was used for wet ash placement and formed in mine void) enters Sawyers Swamp Creek via the toe drains and the coal mine void called "Lidsdale Cut".</p> <p>Water quality is also monitored in the Sawyers Swamp Creek Dam pond as some of this water enters Sawyers Swamp Creek by seepage through the dam wall.</p> <p>Site WX7 is downstream of the ash placement area and groundwater seepage into the creek from Lidsdale Cut. It is also downstream of the junction between Dump Creek and Sawyers Swamp Creek and just upstream of the junction with the Coxs River.</p> <p>The frequency of sampling was quarterly, which was changed to monthly from April, 2009, as required by the OEMP for Stage II. The monitoring is undertaken for detection of effects of Sawyers Swamp Creek Ash Dam seepage and groundwater seepage from Kerosene Vale Ash Dam and Kerosene Vale Ash Repository on Sawyers Swamp Creek.</p> <p>The Aurecon (2010) report concluded the following:</p> <p>Effects of the Sawyers Swamp Creek Ash Dam seepage on local groundwater and water quality in Sawyers Swamp Creek:</p> <ul style="list-style-type: none"> <li>No significant effects on the water quality in the local groundwater other than an increase in boron at bore WGM1/D4, which remained below the local goal.</li> <li>High concentrations of iron and manganese in the local groundwater, that did not originate from the ash dam, but which could have been mobilised from the highly mineralised local soils by the ash dam seepage flows under the dam wall.</li> <li>An increase in boron concentration in the Sawyers Swamp Creek, which is already elevated above the local goal due to the mineralised conditions of the catchment.</li> <li>An increase in salinity in Sawyers Swamp Creek, which remained below ANZECC (2000) guidelines.</li> <li>No significant selenium effects on receiving waters of the Sawyers Swamp Creek Ash Dam.</li> </ul> <p>The increase in salinity and boron in the creek are expected to be reversed following the installation of the Sawyers Swamp Creek Ash Dam seepage pump-back system.</p> <p>Salinity increases and trace metal decreases in the ash dam pond were due to the change in ash placement process from wet to dry. The salinity increased due to concentration in the residual pond with the unavoidable reduction in flushing following the cessation of wet ash placement and the diversion of freshwater inflows to minimise overflows. Conversely, trace metals and elements in the pond decreased because there was no more leaching of these elements from slurred ash.</p> <p>Effects of the groundwater beneath Stage II:</p> <ul style="list-style-type: none"> <li>Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to (refer to details provided in following item).</li> </ul> <p><b>Compliance.</b></p>
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<ul style="list-style-type: none"> <li>▪ Should results reveal that Stage 2 operations are having an adverse impact on surface water quality (results outside the baseline parameters), Delta Electricity in consultation with the Contractor, shall review and intensify the surface water quality controls within this sub-plan, which may include: <ul style="list-style-type: none"> <li>▶ reducing the exposed ash face</li> <li>▶ reducing the maximum allowable disturbed area at any one time</li> <li>▶ increase capacity of collection pond</li> <li>▶ review diversion bunds and drains and rectify as required.</li> </ul> </li> </ul>	<p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon report.</p> <p>The following is an extract from the Aurecon (2010) report (Section 6 Conclusions):</p> <p><i>The current, Stage II, water quality in receiving waters and changes from pre-Stage I to the initial Stage II placement were examined in terms of the likely effects of the groundwater beneath Stage II and seepage from the SSCAD on water quality in Sawyers Swamp Creek. These effects were put into the context of poor water quality in the area, which is unrelated to the dry ash placement. From this, the following conclusions were drawn on the overall effects of the groundwater beneath Stage II and the SSCAD seepage on receiving water quality.</i></p> <p><i>With respect to the effects of the groundwater beneath Stage II:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to:</i> <ul style="list-style-type: none"> <li>○ <i>Limited rainfall infiltration into the groundwater due to the dry ash itself and compaction by machinery</i></li> <li>○ <i>Placement of the dry ash on the clay capping of the KVAD and its limited permeability</i></li> <li>○ <i>The highly mineralised nature of the catchment and effects of the blocked KVAD toe drains</i></li> <li>○ <i>Attenuation of selenium in ash leachate by uptake by local soils or mine spoil</i></li> </ul> </li> </ul> <p><b>Compliance.</b></p>
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<ul style="list-style-type: none"> <li>▪ The groundwater monitoring results (see Section 6.6) shall be assessed to ascertain any impacts on Sawyers Swamp Creek from existing groundwater discharge points into the creek</li> </ul>	<p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon report.</p> <p>The following is an extract from the Aurecon (2010) report (Section 6 Conclusions):</p> <p><i>The current, Stage II, water quality in receiving waters and changes from pre-Stage I to the initial Stage II placement were examined in terms of the likely effects of the groundwater beneath Stage II and seepage from the SSCAD on water quality in Sawyers Swamp Creek. These effects were put into the context of poor water quality in the area, which is unrelated to the dry ash placement. From this, the following conclusions were drawn on the overall effects of the groundwater beneath Stage II and the SSCAD seepage on receiving water quality.</i></p> <p><i>With respect to the effects of the groundwater beneath Stage II:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to:</i> <ul style="list-style-type: none"> <li>○ <i>Limited rainfall infiltration into the groundwater due to the dry ash itself and compaction by machinery</i></li> <li>○ <i>Placement of the dry ash on the clay capping of the KVAD and its limited permeability</i></li> <li>○ <i>The highly mineralised nature of the catchment and effects of the blocked KVAD toe drains</i></li> <li>○ <i>Attenuation of selenium in ash leachate by uptake by local soils or mine spoil</i></li> </ul> </li> </ul> <p><b>Compliance.</b></p>
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<ul style="list-style-type: none"> <li>▪ A review of surface water monitoring locations shall be undertaken as a result of the groundwater studies to ensure potential water quality impacts downstream from these points can be monitored.</li> </ul>	<p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). This report included a review of the surface water monitoring locations. The following text is an extract from the Aurecon Report (2010) regarding surface water monitoring locations:</p> <p><i>There was an issue with the nominated sites in Sawyers Swamp Creek. Although the sites shown in the OEMP's Figure 6-4 are labelled as "established sites" the data and information provided for this report by Delta Electricity showed that these "sites" do not exist and Delta Electricity did not include them in the routine monitoring program. The site shown near Lidsdale Cut may have arisen due to confusion regarding monitoring at Lidsdale Cut. Water quality monitoring by Delta Electricity at the Lidsdale Cut is either at the overflow v-notch weir that flows into the creek, or in the pond formed by the Cut itself. Sampling is not undertaken in the creek.</i></p> <p><i>In regard to the sites near the northern section of the Stage II area, it appears that the intention of the OEMP was for Delta Electricity to begin sampling at these sites to assess the effects of seepage from the Stage II area.</i></p> <p>The Aurecon (2010) report found that following its investigations, the receiving water site for Sawyers Swamp Creek was suggested to be the existing site (WXT). The OEMP suggested sites near the northern section of the Stage II area cannot be considered to be receiving water sites for the Stage II area as they are influenced by the Kerosene Vale Ash Dam and Sawyers Swamp Creek Ash Dam seepages.</p> <p><b>Compliance (review undertaken).</b></p>
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<ul style="list-style-type: none"> <li>Delta Electricity shall issue a report to the DPI and the SCA every 12 months from commencement of Stage 2 operations. The report shall contain the results and analysis of monitoring data, location, frequency, rationale and the procedures and protocols for collecting creek water samples as well as the parameters analysed and methods of analysis.</li> </ul>	<p>Delta representatives advised that they have engaged Aurecon to complete the review a review of surface water quality data collected during the first twelve months of the project (April 2009 – March 2010).</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.</p> <p><b>Compliance</b> with respect to commissioning of report.</p> <p><b>Recommendation</b> - Delta Electricity to provide a copy of the Aurecon Report to SCA in accordance with MCoA 6.5c(viii) which requires the "provision of periodic reporting of results to DPI (Fisheries) and the SCA" with respect to the Surface Water Management Plan of the OEMP.</p> <p>Delta representatives advised that there have been no fish kill events during the operation of the Stage 2 Kerosene Vale Stage 2 Ash Repository.</p> <p>During the on site review component of this Annual Environmental Management Report, Delta's incident register was inspected. No fish kill events have been recorded.</p> <p>Note – The Wallerawang Power Station's Environment Protection Licence (No. 766) via Clause R2 requires Delta to notify the EPA of incidents causing or threatening material harm to the environment.</p> <p><b>Not Applicable (no such event to date).</b></p>
<ul style="list-style-type: none"> <li>The DPI Regional Fisheries Office shall be contacted in the event of a fish kill in the vicinity of the operations. The incident shall be investigated; however the department shall be contacted regardless of the cause.</li> </ul>	



<ul style="list-style-type: none"> <li>▪ The Annual Environmental Management Report will be submitted to the Director-General complete with surface water monitoring data gathered throughout the year.</li> </ul>	<p>This OEMP requirement relates to the requirement for Delta to prepare and submit an Annual Environmental Management Report (AEMR) as per the requirement of MCoA 7.3.</p> <p>This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.</p> <p><b>Compliance.</b></p>
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**Other Observations and Evidence**

None.

### Groundwater quality Sub Plan (from OEMP)

<b>Targets</b>	<ul style="list-style-type: none"> <li>▪ The quality of the groundwater underlying the site is not impacted by Stage 2 operations</li> </ul>
<b>Indicators</b>	<ul style="list-style-type: none"> <li>▪ Groundwater monitoring results indicating reduction in surface infiltration through use of preventative measures such as ash stacking and compaction techniques</li> <li>▪ Results of monitoring trends undertaken by NATA accredited specialists as per OEMP</li> </ul>
<b>Performance with respect to OEMP Targets</b>	

The following text is an extract from the Aurecon (2010) report titled ""KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562):

*The dry ash placement management has mainly involved limiting rainfall infiltration and reducing seepage from the KVAD into the local groundwater. The effectiveness of these activities has been demonstrated by improved water quality in the local groundwater during the Stage I placement from 2003 to 2006, before the toe drains (of the Kerosene Vale Ash Dam) became blocked. Examination of the processes determining groundwater quality showed that the improved water quality was due to reduced KVAD seepage relative to background groundwater flows.*

*The current, Stage II, water quality in receiving waters and changes from pre-Stage I to the initial Stage II placement were examined in terms of the likely effects of the groundwater beneath Stage II and seepage from the SSCAD on water quality in Sawyers Swamp Creek. These effects were put into the context of poor water quality in the area, which is unrelated to the dry ash placement. From this, the following conclusions were drawn on the overall effects of the groundwater beneath Stage II and the SSCAD seepage on receiving water quality.*

With respect to the effects of the groundwater beneath Stage II:

- Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to:
  - Limited rainfall infiltration into the groundwater due to the dry ash itself and compaction by machinery
  - Placement of the dry ash on the clay capping of the KVAD and its limited permeability
  - The highly mineralised nature of the catchment and effects of the blocked KVAD toe drains
  - Attenuation of selenium in ash leachate by uptake by local soils or mine spoil

Based on the preliminary assessment undertaken by Aurecon (2010), it appears that the quality of the groundwater underlying the site is not impacted by the Stage 2 operations. It is noted that the Aurecon (2010) report provides a number of recommendations with respect to groundwater management for Delta Electricity's consideration.

**Performance Assessment based on Compliance Assessment Observations (detailed in following section)**

The majority of the OEMP requirements with respect to groundwater quality were found to be complied with.

With respect to non-conformances, this review has identified that the OEMP requirement that two new groundwater monitoring bores down-gradient to the north of the ash repository and 1 new up-gradient well shall be constructed has not been complied with. However, the Aurecon report provides recommendations for Delta's consideration in relation to the use of existing bores.

It is noted that the Aurecon (2010) report provides a number of recommendations with respect to groundwater management for Delta Electricity's consideration.

**Management and Mitigation Measures**

- Ash stacking rates shall be staged and lift sizes limited from 1 to 2 metres to reduce the potential for pore pressure related changes to groundwater levels, particularly in and around the Sawyers Swamp Creek and Lidsdale Cut areas.

**Compliance Assessment Observations**

Site observations made during the on site review component confirmed ash placement and compaction is taking place within this requirement.

Delta's contractor (Bilfinger Berger Services) prepares a Monthly Client Service Report covering for its ash placement operations. Details of the ash placement practices and in particular the thickness of layer is reported on. A sample of the Bilfinger Berger Monthly Client Service Reports for the month of January 2010 was sighted which specifies the continued practice of 0.5m layer thickness.

Bilfinger Berger Services also prepares a monthly ash placement work instruction document. A sample of the BBS monthly ash placement work instruction for the period 1 March to 31 March 2010 (ref: BBS-IN-MP-710) was sighted. This work instruction indicates the requirement for ash placement to be in 500mm layer thickness.

**Compliance.**



<ul style="list-style-type: none"> <li>▪ The potential for changed groundwater levels and quality due to infiltration of water and leachate to the groundwater system through the ash repository shall be controlled by: <ul style="list-style-type: none"> <li>➤ limiting the area of ash face exposed at any one time,</li> <li>➤ ensuring appropriate compaction is undertaken</li> <li>➤ capping and rehabilitating completed sections as soon as practicable</li> </ul> </li> </ul>	<p>Delta representatives indicated that the level (RL) of placed ash has yet to reach the defined level (RL) when capping and rehabilitation is required.</p> <p>Site observations made during the on site review confirmed that placed ash is subject to compaction via bulldozer spread and track rolling in addition to compaction by a smooth drum compactor.</p> <p>Bilfinger Berger Services Monthly Client Service Report for the month of January 2010 indicates that the compaction rolling average for the contract as of the end of January 2010 was 93.6%.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ Following completion of the Stage 2 operations, the last remaining disturbed areas shall be capped and revegetated to minimise surface water infiltration.</li> </ul>	<p>Not yet applicable. The placement of ash within the Stage 2 area commenced in April 2009.</p> <p><b>Not Applicable (project has not yet reached this milestone).</b></p>
<ul style="list-style-type: none"> <li>▪ Water quality monitoring results shall be assessed in conjunction with the baseline data provided in Table C of Appendix C, and against the baseline condition as assessed in the Environmental Assessment, with the ANZECC (2000) Irrigation and Ecosystem Protection Guidelines to be used as a reference point.</li> </ul>	<p>Delta representatives advised that NALCO has been performing groundwater monitoring/sampling for the first twelve months of the project (April 2009 – April 2010).</p> <p>Groundwater levels are also monitored by Bilfinger Berger Services at selective bores/piezometers.</p> <p>Delta Electricity engaged Aurecon to assess the effects of a) the initial Stage II dry ash placement, in Kerosene Vale Ash Repository (KVAR), on surface and groundwater quality in the area and b) the effects of the Sawyers Swamp Creek Ash Dam (SSCAD) seepage on Sawyers Swamp Creek and local groundwater.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562).</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ Existing groundwater bores WGM1/D1, WGM1/D5 and WGM1/D6 may be damaged and shall be replaced to the same or to an alternate location to provide a more comprehensive data set.</li> </ul>	<p>Delta Electricity representative advised that no damage has occurred to the existing groundwater bores and all three bores are fully operational. Sighted May 2010 analytical reports issued by Nalco Analytical Resources for samples collected from these groundwater monitoring wells.</p> <p><b>Not Applicable (existing groundwater bores are not damaged).</b></p>

<p>■ Two new groundwater monitoring bores down-gradient to the north of the ash repository and 1 new up-gradient well shall be constructed.</p> <p>Note: Indicative locations for these new wells are outlined in Figure 6-4. The wells shall be installed to provide additional baseline information and would require obtaining permit from the DWE.</p>	<p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref. 208562). The following text is an extract from the Aurecon report.</p> <p>Two new groundwater monitoring bores to be installed down-gradient and to the north of the Stage II area – it was found that one bore in this area exists (GW6, Figure 1) but was not sampled and the second bore was not installed. Although seepage from Stage II, if any, is expected to flow to the north and west of the placement, the only down gradient data for the site was collected at the existing bores (WGM1/D5 and D6), so these were used in the current assessment. However, it is suggested that bore GW6 be included in the monitoring program as a seepage detection bore for seepage from KVAD under the Stage II area.</p> <p>An additional up-gradient, background bore, to be installed prior to the beginning of operation of the Stage II placement – it was found that this bore was not installed and the Centennial Coal Mine bores located further to the south-east (Figure 7) were not suitable. As there are already two existing up-gradient bores in the area (WGM1/D2 for catchment background and D3 for site background to allow for inputs from the SSCAD), shown in Figure 1, these were considered sufficient for the Stage II assessment.</p> <p><b>Non-Compliance</b> – with respect to additional bores were not installed as per the OEMP. However, the Aurecon report provides recommendations for Delta's consideration in relation to the use of existing bores.</p>
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<ul style="list-style-type: none"> <li>Monitoring of groundwater at the 6 bore sites outlined in Figure 6-4 shall be undertaken at an initial frequency of once every month for the first 12 months of operation to establish baseline groundwater quality data.</li> </ul>	<p>Delta Electricity representative advised that historically there were six (6) groundwater sampling sites. At the time of this Annual Environmental Management Report, an additional four (4) groundwater sampling sites had been established.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon Report:</p> <p><i>Groundwater was monitored quarterly in bores located up-and down-gradient of the Kerosene Vale Ash Dam, Kerosene Vale Ash Repository Stage I and Stage II dry ash placement area and Sawyers Swamp Creek Ash Dam and then, except for one sample in June 2009, monthly from April, 2009, as required by the OEMP for Stage II.</i></p> <p><i>The bore location descriptions are:</i></p> <ul style="list-style-type: none"> <li>WGM1/D1 – head waters of Sawyers Swamp Creek</li> <li>WGM1/D2 – up-gradient of toe of Kerosene Vale Ash Dam Southern Wall</li> <li>WGM1/D3 – base of Sawyers Swamp Creek Ash Dam Left Abutment</li> <li>WGM1/D4 – base of Sawyers Swamp Creek Ash Dam Right Abutment</li> <li>WGM1/D5 – below the toe of Kerosene Vale Ash Dam North-Western Wall</li> <li>WGM1/D6 – below the toe of Kerosene Vale Ash Dam North- Western Wall</li> </ul> <p><b>Compliance.</b></p>
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<p>■ The monitoring shall include:</p> <ul style="list-style-type: none"> <li>▶ water quality as per the groundwater monitoring analytical suite outlined in Table A – Appendix C</li> <li>▶ depth using bore water levels taken at the bore sites outlined in Figure 6-4</li> <li>▶ flow direction using slug tests.</li> </ul>	<p>Delta Electricity provided a list of analytes routinely tested for a part of groundwater monitoring. This suite of analytes includes: pH, alkalinity, conductivity, dissolved solids, total mercury, chloride, fluoride, sulphate, total aluminium, total arsenic, total barium, total beryllium, total boron, total cadmium, total calcium, total chromium, total copper, total lead, total magnesium, total molybdenum, total nickel, total potassium, total selenium, total silver, total sodium, total zinc, iron-filtered and manganese-filtered.</p> <p>Groundwater samples are analysed by Nalco Analytical Resources (NATA Accreditation Number 1099, Site Number 1092). Testing of samples for As, Cd, Cr, Cu, Pb, Hg and Ag is outsourced to National Measurement Institute (NATA registration number 198) – sighted various May 2010 water analysis reports issued by Nalco.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The following text is an extract from the Aurecon Report:</p> <p><i>Groundwater bores are bailed and sampled after allowing time for the water level in the bore to re-established. The depth to the water level from the top of the bore is measured using a dip meter.</i></p> <p><i>Since April, 2006 the detection limits for routine monitoring of most trace metals tested were lower than the ANZECC (2000) guidelines. However, silver continues to be analysed at 10 times the guideline value.</i></p> <p>Slug tests as required by the OEMP have not been performed to date. Delta representatives advised that Aurecon has been engaged to complete the review of the groundwater monitoring/sampling data collected during the first twelve months of the project (April 2009 – March 2010). Initial advice from Aurecon is that the piezometers are located to far apart for slug tests to be an effective monitoring technique for determining the groundwater flow direction at the site.</p> <p><b>Compliance.</b></p>
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<p>Should the first 12 months of Stage 2 operations have no negative impact on groundwater monitoring data, then the established monitoring program shall be continued by subject to the addition of:</p> <ul style="list-style-type: none"> <li>▶ low detection limit analysis for trace metals (to ensure detection limit is lower than guideline values)</li> <li>▶ key salinity indicators included in the analytical suite</li> </ul> <p>Note: This updated monitoring program shall be maintained subject to review every 3 months.</p>	<p>Sighted Aurecon report titled "KQAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.</p> <p>The following text is an extract from Section 6 Conclusions of the Aurecon Report:</p> <p><i>The effects of the ongoing dry ash placement at KVAR Stage II and the SSCAD seepage on local ground water and surface water quality have been assessed.</i></p> <p><i>The current, Stage II, water quality in receiving waters and changes from pre-Stage I to the initial Stage II placement were examined in terms of the likely effects of the groundwater beneath Stage II and seepage from the SSCAD on water quality in Sawyers Swamp Creek. These effects were put into the context of poor water quality in the area, which is unrelated to the dry ash placement. From this, the following conclusions were drawn on the overall effects of the groundwater beneath Stage II and the SSCAD seepage on receiving water quality.</i></p> <p><i>With respect to the effects of the groundwater beneath Stage II:</i></p> <ul style="list-style-type: none"> <li>▪ <i>Insignificant or undetectable effects on surface or groundwater quality, including selenium, in receiving waters due to:</i> <ul style="list-style-type: none"> <li>○ <i>Limited rainfall infiltration into the groundwater due to the dry ash itself and compaction by machinery</i></li> <li>○ <i>Placement of the dry ash on the clay capping of the KQAD and its limited permeability</i></li> <li>○ <i>The highly mineralised nature of the catchment and effects of the blocked KQAD toe drains</i></li> <li>○ <i>Attenuation of selenium in ash leachate by uptake by local soils or mine spoil</i></li> </ul> </li> </ul> <p><i>The Aurecon report notes that to comply with the OEMP, future silver analytical tests should be undertaken at less than the 0.05 ug/L detection limit.</i></p> <p><b>Compliance.</b></p>
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<ul style="list-style-type: none"> <li>▪ Should results reveal adverse trends over baseline data, a review of the groundwater quality controls shall be undertaken, including: <ul style="list-style-type: none"> <li>▶ further reduction in lift sizes for ash stacking</li> <li>▶ further reduction in area of ash face exposed</li> <li>▶ higher compaction rates on emplaced ash</li> <li>▶ improvements to surface water controls adjacent to ash placement operations.</li> </ul> </li> </ul>	<p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.</p> <p>The following text is an extract from Section 5 Discussion of the Aurecon Report:</p> <p><i>The assessment of potential effects of the groundwater beneath the Stage II was based on a comparison of the water quality with that in the receiving waters. It was found that Stage II did not cause elevated salinity or trace metals or elements, including selenium, in surface and groundwater receiving waters.</i></p> <p><i>The effects were insignificant or undetectable compared to historical effects of coal mine waste in the catchment, particularly due to pyrite oxidation and release of sulphate and trace metals and elements from chitter in the KVAD and Lidsdale Cut.</i></p> <p><i>The results must be considered preliminary because the large effects of increased salinity and trace metals and elements due to the blocked KVAD toe drains. The rise in the KVAD water level may have increased concentrations in the groundwater beneath Stage II as well as resulting in increased concentrations of some trace metals and elements in receiving waters.</i></p> <p><i>The result of no significant selenium effects on receiving waters of the Stage II placement or the SSCAD seepage was most likely due to its low concentrations in the potential sources, including the SSCAD and groundwater beneath Stage II. The low selenium concentrations, where ash leachate is expected, indicates uptake by local soils or mine spoil under the containment dams and/or in the dam wall construction and capping material (PPI, 1999).</i></p> <p><i>The findings in this preliminary assessment of insignificant effects of the initial Stage II placement on the water quality in receiving waters indicates the benefits of the dry ash placement and compaction in limiting rainfall infiltration. The rainwater that did infiltrate appears to have been effectively contained by the clay capping on top of the KVAD. Rainwater was apparently held above the KVAD clay capping due to its relatively low permeability.</i></p> <p><i>In addition, two unusual events occurred at the time of the Stage II placement, which would prevent a definitive assessment of effects on surface and groundwater quality. 1) Blockage of the KVAD toe drains and its effects on local groundwater quality (blocked during Stage I placement in 2007 and unblocked in February 2010). 2) Discharge of Springvale coal mine groundwater to Sawyers Swamp Creek at the time of commencement of the Stage II placement.</i></p> <p><b>Compliance.</b></p>
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<ul style="list-style-type: none"> <li>Delta Electricity shall issue a report to the SCA every 12 months from commencement of operations. The report shall contain the location, frequency, rationale and the procedures and protocols for collecting groundwater samples as well as the parameters analysed and methods of analysis.</li> </ul>	<p>Delta representatives advised that NALCO has been performing groundwater monitoring/sampling for the first twelve months of the project (April 2009 – April 2010). Delta representatives advised that Aurecon has been engaged to complete the review of the groundwater monitoring/sampling data collected during the first twelve months of the project (April 2009 – March 2010).</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.</p> <p><b>Compliance</b> with respect to commissioning of report.</p>
<ul style="list-style-type: none"> <li>The results and analysis of the monitoring data shall also be included and assessed against the baseline data and the baseline condition (as per EA) with the ANZECC (2000) Irrigation and Ecosystem Protection Guidelines to be used as a reference point. In the case of baseline data exceedances; the response taken must be documented within the report. Any deviations from the proposed monitoring program must also be justified.</li> </ul>	<p>Delta representatives advised that NALCO has been performing groundwater monitoring/sampling for the first twelve months of the project (April 2009 – April 2010). Delta representatives advised that Aurecon has been engaged to complete the review of the groundwater monitoring/sampling data collected during the first twelve months of the project (April 2009 – March 2010).</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.</p> <p><b>Compliance.</b></p>

<ul style="list-style-type: none"> <li>▪ The Annual Environmental Management Report will be submitted to the Director-General complete with groundwater monitoring data gathered throughout the year.</li> </ul>	<p>This OEMP requirement relates to the requirement for Delta to prepare and submit an Annual Environmental Management Report (AEMR) as per the requirement of MCoA 7.3.</p> <p>This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p> <p>Sighted Aurecon report titled "KVAD Stage II Water Quality Assessment October 2007 to March 2010 (Final Draft, 18 June 2010, Report ref: 208562). The purpose of this report was to assess the effects of a) the initial Stage 2 dry ash placement in the Kerosene Vale Ash Repository, on surface and groundwater quality in the area, and b) the effects of the Sawyers Swamp Creek Ash Dam seepage on Sawyers Swamp Creek and local groundwater.</p> <p><b>Compliance.</b></p>
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**Other Observations and Evidence**

None.

### ***Air quality Sub Plan (from OEMP)***

<b>Targets</b>	The local air quality in the vicinity of the Kerosene Vale Ash Repository is not impacted by Stage 2 operations. Zero incidence of dust-related complaints.
<b>Indicators</b>	Zero visible dust events in vicinity of Kerosene Vale Ash Repository during Stage 2 operations Complaints register demonstrating zero occurrence of dust-related complaints

### **Performance with respect to OEMP Targets**

Based on the MES Report (Draft, June 2010) titled “Kerosene Vale Ash Repository Stage 2 – Air Quality Review – April 2009 – March 2010”, the dust gauge data from the first year of KVAR2 operations do not indicate that KVAR2 operations have resulted in dust deposition above the OEMP levels that trigger the requirement to implement additional control measures. A comparison (undertaken by MES) of dust data from the first year of operation of KVAR2 with data collected in previous years showed no indication of an increase in dust deposition levels, particularly at Gauge 29, the closest to KVAR2.

Based on the information reviewed, there was only 1 dust related complaint associated with the operations of the Stage 2 KVAR. This complaint was addressed to the satisfaction of the complainant.

### **Performance Assessment based on Compliance Assessment Observations (detailed in following section)**

The majority of OEMP requirements with respect to air quality were found to be complied with.

With respect to non-conformances, this review has identified that the OEMP requirement for the two additional dust depositional gauges as specified within the project’s approved OEMP has yet to be enacted.

It is noted that the MES (2010) report provides a number of recommendations with respect to air quality management for Delta Electricity’s consideration.

### **Management and mitigation measures**

**Evidence sighted in assessing compliance**



<p>Stage 2 operations shall be conducted in a manner that minimises dust impacts generated by operational activities, 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 time, practicable dust mitigation measures shall be identified and implemented, including cessation of relevant works, as appropriate, such that emissions of visible dust cease.</p>	<p>Stage 2 ash repository operations were observed on 25 March 2010 at 10.00am. No visible emissions of dust from the site or within the stage 2 ash repository area were observed. It should be noted that a wind speed measurement was taken by Delta Electricity at 1.54pm at the repository. The recorded wind speed was 16.6 km/hr (~4.6 m/s). A wind speed of 2 m/s was also recorded at 10.30am at the Mount Piper weather station.</p> <p>An extensive sprinkler system was in place and operation across areas of exposed ash.</p> <p>A water cart was observed operating along the haulage routes/roads.</p> <p>A truck wheel wash station was observed to be operating.</p> <p>Ash haulage vehicles (fleet of two trucks) had loads covered. Covers used are a remotely operated type.</p> <p>In May 2009, Delta Electricity received a complaint regarding ash trucks operating on the coal haulage road with ash uncovered and therefore a potential source of dust in the ambient environment. Delta's complaint register noted that "... One of these trucks had a faulty cover but was required for use as no other trucks were available. Complainant satisfied with explanation of situation".</p> <p>A dust complaint dated 4 December 2009 (re: fly ash on car) was investigated by DECCW, which confirmed that the material was fly ash. Delta Electricity reviewed operational conditions at the time, and found that the likely source of ash was WW Unit 8 Boiler, where a fuel trip caused the precipitators to de-energise at the time of the complaint. Based on Delta's investigation, this complaint does not appear to be associated with the Stage 2 Kerosene Vale Ash Repository operations.</p> <p><b>Compliance.</b></p>
<p>Moisture levels in the ash remain shall be maintained at 15-20% until the material is placed in the repository area.</p>	<p>Sighted a series of Monthly Client Service Reports prepared by Delta's ash placement contractor Biffinger Berger Services for the months of March 2009, June 2009, October 2009, November 2009, December 2009 and January 2010. The reported moisture content has not dropped below the specified requirement of 15-20%.</p> <p><b>Compliance.</b></p>
<p>All ash haulage trucks shall be fitted with remotely operated covers to completely cover the load whilst in transit between the ash silos and the repository. The load must be covered at all times except when loading or unloading ash material.</p>	<p>Site observations on 25 March 2010 confirmed that all haulage trucks (ie a fleet of two trucks) have remotely operated covers that cover the load completely.</p> <p><b>Compliance.</b></p>

All ash haulage trucks shall go through the wheel and undercarriage washers prior to leaving the ash repository site and entering the private haul road.	<p>Site observations on 25 March 2010 confirmed that all haulage trucks (ie a fleet of two trucks) pass through the wheel wash station prior to leaving the ash repository area.</p> <p><b>Compliance.</b></p> <p>An extensive sprinkler system is employed to mitigate against visible dust emission from exposed ash surfaces. In January 2010, a total of 254 sprinklers were in operation. Site observations on 25 March 2010 confirmed that the operation of the sprinkler system was effective and no visible dust emissions from exposed ash surfaces were observed.</p> <p><b>Compliance.</b></p> <p>Delta representatives advised that BBS performs routine (i.e. weekly) inspections of the truck wash facilities that coincide with recording of the water meter readings. BBS utilise a form titled 'Ash Placement Area – Daily Inspection Record Sheet'. The Comments section provides BBS staff a document issues relating to the truck wash facilities. Sighted Daily Inspection Record Sheet for the period 29 April 2010 to 5 May 2010.</p>
Temporary PVA, lignosulphate or tar capping shall be applied to seal ash faces, where ash is not currently being deposited, and where irrigation systems are not in operation and there is a probability of visible dust emissions occurring due to meteorological conditions.	
A routine maintenance, inspection and cleaning regime shall be implemented for the two truck washes and adjacent washout/surface drainage pits within the repository site.	<p><b>Compliance.</b></p> <p>Site observations on 25 March 2010 confirmed that the haulage roads/routes are being maintained as required.</p> <p>Delta representatives advised that there have been no significant rainfall events since operations commenced in April 2009.</p> <p>Rainfall data recorded at nearby Mount Piper for the period April 2009 to April 2010 was sighted. The following are the monthly rainfall totals, which indicate that there have been no significant rainfall events since the operations commenced in April 2009. (62mm, 33mm, 46mm, 46.6mm, 51.2mm, 45.6mm, 54.8mm, 30.8mm, 88.6mm, 179.8mm, 120.6mm, 68.8mm, 44.2mm).</p> <p>It should be noted that site observations confirm that surface water management within the Stage 2 ash repository is self contained and drains to an internally located "dirty water" pond. This arrangement limits the potential for material to be tracked onto haul roads.</p> <p><b>Compliance.</b></p>
The private haulage roads shall be maintained in a clean condition by routinely washing the surface. This applies to the haul roads within the repository zone and does not include the private haul road from the power station. Particular attention must be paid during wet periods when muddy water is drawn from the repository area and deposited on the haul roads.	<p>Site observation made on 25 March 2010 confirmed that a water cart is part of the ash placement fleet of plant/equipment and was in operation.</p> <p><b>Compliance.</b></p>
A water cart shall be used to undertake dust suppression activities throughout the repository site, as required.	



<p>A dedicated water sprinkler and surface irrigation system shall be installed to cover the active ash placement area. The system will be in place prior to the commencement of ash placement activities and will be operated for the entire daily operating period or when 15 minute wind speed thresholds exceed 5 metres per second.</p> <p>Note: Application rates and the coverage area shall have the capacity to ensure that no visible emissions from the repository area occur.</p>	<p>Site observation made on 25 March 2010 confirmed that a dedicated water sprinkler system is in place and operational. As of January 2010 a total of 245 sprinkler units were in operation.</p> <p>The operation and application rates of the sprinkler system is established in the Repository Management Plan and subsequent Monthly Ash Placement Work Instructions and Weekly Ash Placement Work Schedule (note: these documents are prepared for Delta Electricity by their ash placement contractor Bilfinger Berger Services).</p> <p><b>Compliance.</b></p>
<p>In the event of visible dust emissions from the repository area, personnel shall notify the Site Manager or Repository Team Leader immediately, who will immediately direct the water cart operator to spray the area and review the location and application rate of the sprinkler system.</p>	<p>Sighted Bilfinger Berger Work Instruction dated 4 March 2009 to all staff re: APA Contractual, Operational and Health Safety &amp; Environmental Obligations. This document states that "any visible dust 'blow-ups' or the possibility of an occurrence is to be addressed immediately and reported to a BBS representative".</p> <p><b>Compliance.</b></p>
<p>A total of 7 deposition gauges shall be used to monitor dust emissions at the perimeter of the ash repository area, and at key locations adjacent to residential properties and Wallerawang Power Station. This includes the existing 5 dust deposition gauges and the installation of an additional 2 dust deposition gauges.</p> <p>Note: The positioning of the additional 2 gauges has been reviewed by specialist consultants based on a review of local weather patterns and the sensitivity of surrounding properties and will be subject to landowner approval. Refer to Figure 6-6 for further details.</p>	<p>Sighted report titled 'Environmental Report April 2010 Western Air Monitoring Network Delta Electricity' prepared by Aurecon (ref: 200884, 13 May 2010, Revision 0). This report confirms that existing 5 depositional dust monitoring gauges (DG5, DG27, DG28, DG29 and DG30) are being used for dust monitoring.</p> <p>The two additional dust depositional gauges as specified within the project's approved OEMP have yet to be established.</p> <p>Sighted Malfroy Environmental Strategies report (Draft, June 2010) titled "Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 to March 2010". Section 7 of the report (ref: Discussion) provides the following commentary regarding the two additional dust depositional gauges:</p> <ul style="list-style-type: none"> <li>▪ The location of two (un-numbered) gauges in the residential area immediately to the west of KVAR2 have yet to be installed.</li> <li>▪ It is considered that gauges at these proposed locations will be of more relevance and use than the more distance gauges, such as 27 and 28, and should be installed as soon as possible.</li> </ul> <p><b>Non-conformance</b> – The two additional dust depositional gauges as specified within the project's approved OEMP have yet to be established (refer to Figure 6-6 of OEMP).</p>



<p>Samples shall be removed from the dust deposition gauges on a monthly basis by a NATA approved laboratory and assessed for compliance with the appropriate air quality criteria.</p>	<p>Sighted report titled 'Environmental Report April 2010 Western Air Monitoring Network Delta Electricity' prepared by Aurecon (ref: 200864, 13 May 2010, Revision 0). This report states that ALS Environmental (NATA Accredited Laboratory, Number 825) was used to test samples collected by depositional dust gauges and that parameter Dust Depositional Gauges (ash content, combustible matter and total insoluble matter) are included in the scope of accreditation held by ALS Environmental.</p> <p><b>Compliance.</b></p>
<p>The DECC amenity-based criteria for dust fallout is a maximum total dust deposition of 4 g/m<sup>2</sup>/month (annual). The Stage 2 operations shall aim to achieve compliance with this limit.</p>	<p>Delta representatives advised that Malfroy Environmental Strategies has been engaged to undertake a review of the dust depositional data collected for the first twelve months of the project's operations (April 2009 – April 2010).</p> <p>Sighted Malfroy Environmental Strategies report (Draft, June 2010) titled "Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 to March 2010". Section 6 of the report explicitly addresses the specific requirements of the OEMP and Air Quality Management Plan.</p> <p>The following are extracts from the MES (Draft, June 2010) report:</p> <ul style="list-style-type: none"> <li>▪ The 2 new dust gauges have yet to be installed.</li> <li>▪ Dust deposition at 4 of the 5 OEMP gauges was less than the 4g/m<sup>2</sup>/month (annual) in the first year of operation (subject to the omission of the regional dust storm data).</li> <li>▪ Dust deposition at gauge 27 exceeded 4 (and 6) g/m<sup>2</sup>/month (annual).</li> <li>▪ Gauges 27 and 28 are poorly located for the purpose of identifying impacts from KVAR2.</li> <li>▪ The elevated results recorded at Gauge 27 are unlikely to be significantly affected by remissions from KVAR2.</li> </ul> <p><i>Note – During late September 2009 and particularly on the 23<sup>rd</sup> and 26<sup>th</sup>, much of eastern Australia experienced severe dust storms and the impact of these storms are evident in the September and October dust gauge data.</i></p> <p><b>Compliance.</b></p>

<p>If the 4 g/m<sup>2</sup>/month limit is exceeded by more than 2 g/m<sup>2</sup>, a review of the effectiveness of the dust suppression regime and further mitigation measures shall be undertaken, including:</p> <ul style="list-style-type: none"> <li>▶ increased application rates of the irrigation system at the ash working face</li> <li>▶ increased application rates of water on haul roads, particularly during high wind events</li> <li>▶ further reduction in the ash face working area below 1.5 hectares</li> <li>▶ increased implementation of temporary capping such as PVA, lignosulphate or tar where un-worked ash faces still exist</li> <li>▶ the application of higher ash moisture rates through the silo humidifier.</li> </ul>	<p>Sighted Mafroy Environmental Strategies report (Draft, June 2010) titled "Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 to March 2010". Section 6 of the report explicitly addresses the specific requirements of the OEMP and Air Quality Management Plan.</p> <p>The following are extracts from the MES (Draft, June 2010) report:</p> <ul style="list-style-type: none"> <li>▪ Dust deposition at gauge 27 exceeded 4 (and 6) g/m<sup>2</sup>/month (annual).</li> <li>▪ The elevated results recorded at Gauge 27 are unlikely to be significantly affected by remissions from KVAR2.</li> </ul> <p>The following are extracts from the MES (Draft, June 2010) report, Section 4:</p> <ul style="list-style-type: none"> <li>▪ Gauge 27 is located about 1,500 metres from KVAR2, on Wallerawang Power Station land and in close proximity to a live coal storage area – which is located between KVAR2 and the dust gauge.</li> <li>▪ In contrast Gauge 29 is the closest of the OEMP gauges to KVAR and its annual average (excluding September and October data) was 2.7 g/m<sup>2</sup>/month. With September and October data excluded, no months at Gauge 29 recorded deposition above 4 g/m<sup>2</sup>/month.</li> </ul> <p><i>Note – During late September 2009 and particularly on the 23<sup>rd</sup> and 26<sup>th</sup>, much of eastern Australia experienced severe dust storms and the impact of these storms are evident in the September and October dust gauge data.</i></p> <p>The MES (Draft, June 2010) report provides the following discussion regarding the trigger for review and OEMP dust gauges (ref. Section 7).</p> <ul style="list-style-type: none"> <li>▪ This requirement appears to be based on the (simplistic) assumption that any measured increase in dust deposition at OEMP gauges is the result of emissions from KVAR2.</li> <li>▪ A diverse range of sources can contribute to dust gauge results.</li> <li>▪ Some OEMP dust gauges are poorly located for the purpose of identifying impacts from KVAR2.</li> <li>▪ It is considered the OEMP gauges 5, 27, 28 and 30 are too far away to provide data relevant to assessing KVAR2 impacts.</li> <li>▪ Gauge 5 might be considered to provide "background" data but the only use for Gauge locations 27 and 28 should be to monitor potential dust deposition from Wallerawang Power Station's coal stack.</li> <li>▪ The elevated results recorded at Gauge 27 are most unlikely to be related to KVAR2 operations.</li> <li>▪ Two (un-numbered) gauges in the residential area to the immediate west of KVAR2 have yet to be installed. It is considered that gauges at these proposed locations will be of more relevance and use than the more distant gauges, such as 27 and 28, and should be installed as soon as possible.</li> <li>▪ A comparison of dust data from the first year of operation of KVAR2 with data collected in previous years showed no indication of an increase in dust deposition levels, particularly at Gauge 29, the closest to KVAR2.</li> </ul> <p><b>COMPLIANCE.</b></p>
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<p>Delta Electricity shall issue a report to the DECC every 12 months from commencement of operations. The report shall contain the location, frequency, rationale and the procedures and protocols for collecting air quality samples as well as the parameters analysed and methods of analysis.</p>	<p>Sighted Malfroy Environmental Strategies report (Draft, June 2010) titled "Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 to March 2010".</p> <p><b>Compliance</b> with respect to commissioning of report.</p>
<p>The results and analysis of the monitoring data shall also be included and assessed against the air quality criteria (4 g/m<sup>3</sup>/month) and the baseline data provided in Table D of Appendix C. In the case of exceedances, the response taken must be documented within the report. Any deviations from the proposed monitoring program must also be justified.</p>	<p>Sighted Malfroy Environmental Strategies report (Draft, June 2010) titled "Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 to March 2010". Section 6 of the report explicitly addresses the specific requirements of the OEMP and Air Quality Management Plan.</p> <p>The following are extracts from the MES (Draft, June 2010) report:</p> <ul style="list-style-type: none"> <li>▪ Average dust levels at OEMP gauges vary from year-to-year, as expected.</li> <li>▪ For 4 of the 5 gauges, deposition rates in the first year of KVAR2 were within the range recorded in previous years.</li> <li>▪ The results do not indicate any change due to KVAR2 operations, particularly at Gauge 29 which is the closest to KVAR2.</li> <li>▪ Results from gauge 29 during the first year of KVAR2 operations were the third lowest of the 8 years 2002-2009-10.</li> <li>▪ Gauge 27 (and 28) is poorly located for the purpose of identifying impacts from KVAR2. The elevated results recorded at Gauge 27 are most unlikely to be significantly affected by remissions from KVAR2.</li> </ul> <p>The following is an extract from the MES (Draft, June 2010) report (section 8):</p> <ul style="list-style-type: none"> <li>▪ The dust gauge data from the first year of KVAR2 operations do not indicate that KVAR2 operations have resulted in dust deposition above the OEMP levels that trigger the requirement to implement additional control measures.</li> </ul> <p><b>Compliance.</b></p>
<p>The Annual Environmental Management Report will be submitted to the Director-General complete with air quality monitoring data gathered throughout the year.</p>	<p>This OEMP requirement relates to the requirement for Delta to prepare and submit an Annual Environmental Management Report (AEMR) as per the requirement of MCoA 7.3</p> <p>This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p> <p>Sighted Malfroy Environmental Strategies report (Draft, June 2010) titled "Kerosene Vale Ash Repository Stage 2 – Air Quality Review April 2009 to March 2010".</p> <p><b>Compliance.</b></p>

**Other Observations and Evidence**



None.

***Landscape and revegetation Sub Plan (from OEMP)***

<b>Targets</b>	▪ All areas of ash placement that have reached RL 940m to be rehabilitated or in process of rehabilitation as per revegetation program
<b>Indicators</b>	▪ Evidence of final batter development involving implementation of slope and revegetation criteria.

**Performance with respect to OEMP Targets**

It should be noted that Stage 2 Kerosene Vale Stage 2 Ash Repository has been in operation for just over 12 months and as such the placement of ash has yet to reach the design RL (940 mAHD). Given the progress of ash placement to date, extensive rehabilitation is not yet required.

Based on the information reviewed and the site observations made, the interim landscaping/revegetation activities undertaken are considered in line with the OEMP target given the project's progression to date.

**Performance Assessment based on Compliance Assessment Observations (detailed in the following sections)**

The majority of OEMP requirements with respect to landscape and revegetation were found to be not applicable given that the placement of ash has yet to reach the design RL (940 mAHD).

No non-conformances were identified.

**Management and Mitigation Measures**

**Evidence sighted in assessing compliance**

<ul style="list-style-type: none"> <li>Measures to reduce the visual impact of the repository, including capping and re-vegetation, shall be implemented as soon as practicable after final capping of each section.</li> </ul>	<p>Stage 2 KVAR ash placement operations have yet to reach final capping levels. The batters associated with previously placed ash layers are vegetated via natural establishment.</p> <p>Ash placement operations are being undertaken with due consideration to visual impacts to residential area.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>During the initial phases of ash placement operations, works will be concentrated on the eastern face of the Stage 2 repository zone. The operational activities required are to raise, cap and revegetate this face as soon as possible in order to shield the residents from future placement activities.</li> </ul>	<p>Ash placement operations are being undertaken with due consideration to visual impacts to residential area.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>As far as practicable and without jeopardising the safety of the operation, lighting associated with the operations shall be directed away from residential properties in the vicinity and towards Sawyers Swamp Creek Ash Dam and comply with AS4282.</li> </ul>	<p>Sighted Biffinger Berger Services procedure 'Lighting Towers – Outdoor Lighting' Reference: Document Number. BBS-WP-712.6.3_Mobile Lighting Towers. This procedure specifies that only one portable lighting tower is to be used and its light must be directed towards the east, south east or south. The procedure has been developed with reference (where applicable) to AS2842.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>All new batters shall be rehabilitated as soon as practicably possible.</li> </ul> <p>Note: Ash placement areas that have reached the final level of 940m AHD shall be capped and revegetated before ash placement begins in any subsequent sections.</p>	<p>Stage 2 KVAR ash placement operations have yet to reach final capping levels.</p> <p>The Repository Site Management Plan indicates the following "Generally as the repository takes shape, work (ie landscape/revegetation) occurs only on batters with the opportunity to plant a top surface... Thus a revegetation program occurs intermittently, constrained by seasonality and development of the repository".</p> <p>Biffinger Berger Services representative advised that all significant vegetation on the batters of the Stage 2 KVAR are the result of an implemented revegetation program.</p> <p><b>Compliance.</b></p>



<ul style="list-style-type: none"> <li>▪ A summary of the rehabilitation objectives include: <ul style="list-style-type: none"> <li>▶ developing a broad acre planting strategy on slopes at a 1 to 4 ratio</li> <li>▶ using small trees and shrubs to control soil movement</li> <li>▶ planting grasses as a base soil conditioner, providing soil organic matter and establishing native perennial grass species to facilitate a long term functional soil profile(erosion control, soil health, nutrient cycling).</li> </ul> </li> </ul>	<p>The placement of ash has yet to reach the design RL (940m AHD) and as such extensive rehabilitation has yet to take place.</p> <p>The Repository Site Management Plan indicates the following "Generally as the repository takes shape, work (ie landscape/revegetation) occurs only on batters with the opportunity to plant a top surface... Thus a revegetation program occurs intermittently, constrained by seasonality and development of the repository".</p> <p>Bilfinger Berger Services representative advised that all significant vegetation on the batters of the Stage 2 KVAR are the result of an implemented revegetation program.</p> <p><b>Not yet applicable.</b></p>
<ul style="list-style-type: none"> <li>▪ A re-vegetation procedure which outlines the methods that would be used to revegetate the batters, including type of grass, shrubs, sow rate, fertilisers/ground treatment and irrigation plan shall be provided to Delta Electricity and Environmental Representative for review and approval. Note: The procedure shall ensure that locally native species are used in the revegetation activities, where possible or feasible depending on soil conditions.</li> </ul>	<p>The project's approved OEMP includes a Landscape/Revegetation Management Plan.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>▪ The re-vegetated areas shall be watered twice-weekly until the vegetation is established to Delta Electricity's satisfaction.</li> </ul>	<p>The placement of ash has yet to reach the design RL (940m AHD) and as such extensive rehabilitation has yet to take place.</p> <p>The Repository Site Management Plan indicates the following "Generally as the repository takes shape, work (ie landscape/revegetation) occurs only on batters with the opportunity to plant a top surface... Thus a revegetation program occurs intermittently, constrained by seasonality and development of the repository".</p> <p>Bilfinger Berger Services representative advised that all significant vegetation on the batters of the Stage 2 KVAR are the result of an implemented revegetation program.</p> <p>Site observations indicate that areas of revegetation are in good condition (ie no evidence of distress or die back).</p> <p><b>Compliance.</b></p> <p><b>Not yet applicable.</b></p>
<ul style="list-style-type: none"> <li>▪ Once the Stage 2 ash repository has reached its design limit and the establishment phase of revegetation for the entire Stage 2 area has been reached, Delta Electricity shall ensure the revegetated zone continues to control erosion and dust impacts and runoff quality, while providing adequate visual amenity to the area.</li> </ul>	

<ul style="list-style-type: none"> <li>▪ The ash shall be capped to a depth of 0.75m, with the capping material to be spread with a dozer blade and then contour ripped to preclude soil movement during rainfall or other erosion events. Other soil stabilisation methods may be utilised including broom brushing or silt fencing as required.</li> </ul>	<p>The placement of ash has yet to reach the design RL (940m AHD) and as such extensive rehabilitation has yet to take place. However, procedures for permanent and temporary capping are outlined in the Repository Site Management Plan (BBS, December 2009) and within monthly instructions circulated to BBS personnel. Within these documents, it is outlined that an average capping depth of 0.75 m is required and capping is to be maintained with a 2 m windrow above the level of ash or not less than 0.5 m in height.</p>
<b>Compliance.</b>	
<ul style="list-style-type: none"> <li>▪ While total vegetation cover on finished surfaces will be difficult to achieve in the short term, the development of site biodiversity (grasses, shrubs, trees) over the longer term will enable this goal to be achieved.</li> </ul>	<b>Not yet applicable.</b>
<ul style="list-style-type: none"> <li>▪ The soil capping shall be conditioned to facilitate revegetation. If capping material does not contain stockpiled topsoil or is inappropriate to foster revegetation, appropriate soil conditioning methods shall be implemented. These may include the addition of organic matter through compost products such as green-waste or a cover crop such as annual grass species. Cover crop grass species will include various ratios of rye corn, millet, oats, canola, lucerne, and clovers.</li> </ul>	<b>Not yet applicable.</b>
<ul style="list-style-type: none"> <li>▪ Cover crop grass species shall be sown in the beginning of autumn or during spring, and shall be grown for a season before being incorporated into the soil using harrows or dozer tynes. This will provide a conditioned base for oversowing with perennial grasses.</li> </ul>	<b>Not yet applicable.</b>
<ul style="list-style-type: none"> <li>▪ Seed will generally be applied using a hydroseeder truck driven along the laybacks, or a back-pack seeder for smaller areas.</li> </ul>	<b>Not yet applicable.</b>
<ul style="list-style-type: none"> <li>▪ The second stage of grass cover revegetation shall include the sowing of a mix of perennial grasses, in either autumn or spring. Successful trials have indicated species such as red grass, wallaby grass, phalaris, couch, consul love grass and paspalum will be suitable. Native perennial species still to be trialled include Microlaena and Poa.</li> </ul>	<b>Not yet applicable.</b>
<ul style="list-style-type: none"> <li>▪ Batters shall be shaped through the use of a tracked vehicle to prepare the capping and to provide rip lines along the contour.</li> </ul>	<b>Not yet applicable.</b>
<ul style="list-style-type: none"> <li>▪ Irrigation shall be undertaken at establishment and as required thereafter, to ensure revegetation occurs. Fertilisers shall also be applied on an ongoing basis as required. Previous results indicate that a suitable fertiliser will most likely include standard nitrogen, phosphorus, potassium and sulphur application, with the use of specialist bio dynamic products that include humic acids, liquid lime products, sea weed kelp based products and a hot-mix NPK blend (10-10-10) with chelated trace elements and potent organic fertilisers.</li> </ul>	<b>Not yet applicable.</b>



<ul style="list-style-type: none"> <li>Threats to revegetation such as grazing by hares, rabbits and wallabies shall be managed through the maintenance of fencing and through other means as appropriate.</li> </ul>	Not yet applicable.
<ul style="list-style-type: none"> <li>Annual soil testing shall be undertaken using representative sampling to analyse total carbon, nitrogen and available phosphorus, pH, electrical conductivity and soil cations, calcium, magnesium, potassium and sodium. Results shall be analysed to assess the ongoing ability of the soil to support revegetation.</li> </ul>	Not yet applicable.
<ul style="list-style-type: none"> <li>The plant establishment, growth and species diversity shall be assessed on a 6 monthly basis. Assessments are to be based on representative sampling.</li> </ul>	No yet applicable.
<ul style="list-style-type: none"> <li>The planting of shrubs and trees shall be undertaken using tube stock after the establishment of the perennial grass species. The tube stock species shall be sourced from locally gathered provenance or shall be selected from types typically found within the region.</li> </ul>	Not yet applicable.
<ul style="list-style-type: none"> <li>Tree species trials were undertaken in July 2008 from a regional selection to establish suitability for the area. Trials involved: Apple box, Long leaved box, Argyle apple, Red box, Western scribbly gum, Candle-bark gum, Red ironbark, Honey Myrtle and Sydney golden wattle.</li> </ul>	Not yet applicable.
<ul style="list-style-type: none"> <li>Trials of local provenance tree species are planned for July 2009 and will include: Red stringy bark, Narrow leaved peppermint, Western scribbly gum, Silver wattle and Red stem wattle. Note: while planting may occur before these trial species have reached maturity, the results of these trials will provide insight into the success rates for growth at the most critical, early age</li> </ul>	Not yet applicable.
<ul style="list-style-type: none"> <li>The tube stock shall be planted 5-10m apart to ensure the maintenance of ground cover after establishment. Measures such as guards shall be used as protection against grazing.</li> </ul>	Not yet applicable.
<ul style="list-style-type: none"> <li>The Annual Environmental Management Report will be submitted to the Director-General complete with landscape and revegetation progress assessed throughout the year where applicable.</li> </ul>	<p>This OEMP requirement relates to the need for Delta to prepare and submit an Annual Environmental Management Report (AEMR) as per the requirement of MCoA 7.3.</p> <p>This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p>
Other Observations and Evidence	Compliance.

None.



Waste management Sub Plan (from OEMP)

<b>Targets</b>	<ul style="list-style-type: none"><li>▪ Waste disposal practices at the Kerosene Vale Ash Repository to reflect Environment Protection Licence conditions.</li><li>▪ Wastes generated on site to be recycled or disposed of as per the guidelines specified in this Sub-plan.</li></ul>
<b>Indicators</b>	<ul style="list-style-type: none"><li>▪ 100% of material disposed of within the Kerosene Vale Ash Repository to correspond to the EPL criteria outlined in this Sub-plan.</li><li>▪ Evidence of recycling system in use and site-generated waste being disposed of to an appropriate facility.</li></ul>

Performance with respect to OEMP Targets

Based on the information reviewed and the site observations made, the operations of the Stage 2 Kerosene Vale Ash Repository meet the OEMP targets for waste management practices.

Performance Assessment based on Compliance Assessment Observations (detailed in the following section)

No non-conformances were identified with respect to the OEMP requirements relating to waste management.

Management and Mitigation Measures

Evidence sighted in assessing compliance

<ul style="list-style-type: none"> <li>Delta Electricity and the Contractor shall not cause, permit or allow any waste generated outside the ash repository to be received at the ash repository for storage, treatment, processing, reprocessing or disposal. Any waste generated at the ash repository shall not be disposed of at the ash repository, unless expressly permitted by the EPL 766.</li> </ul>	<p>Delta representatives advised that no wastes (other than those expressly permitted by the EPL No. 766) have been received within the Stage 2 KVAR.</p> <p>Delta representatives advised that security patrols are undertaken several times during daylight hours. No patrols are conducted outside of normal operational hours.</p> <p><b>Compliance with recommendation.</b></p> <p><b>Recommendation</b> - Delta to consider conducting security patrols of the Stage 2 KVAR outside of the normal operational hours.</p>
<ul style="list-style-type: none"> <li>Delta Electricity and the Contractor shall ensure that all waste materials are assessed, classified, managed and disposed of in accordance with Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes (EPA, 1999)</li> </ul>	<p>Ash placement within Kerosene Vale Stage 2 Ash Repository Area commenced in April 2009. No construction activities were required to facilitate the placement of ash in the Stage 2 area as the operation is basically a continued progression of placement from Stage 1 to Stage 2 and utilises existing facilities. As such no wastes have been generated by the project requiring off site disposal.</p> <p>Materials placed in the Kerosene Vale Stage 2 Ash Repository Area are limited to ash as per the Environment Protection Licence conditions.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Delta Electricity and the Contractor shall ensure that only the following types of waste are to be disposed of at the ash repository: <ul style="list-style-type: none"> <li>Ash</li> <li>Mill pyrites</li> <li>Demineralisation and polisher plant effluents</li> <li>Chemical clean solutions</li> <li>Cooling tower sediments</li> <li>Ion exchange resins</li> <li>Fabric filter bags</li> <li>Brine conditioned fly ash</li> <li>Biomass co-firing ash</li> <li>Settling pond sediments</li> <li>Oil and grit trap sediments.</li> </ul> </li> </ul>	<p>Delta representatives advised that the only material going into the Stage 2 KVAR is ash.</p> <p>Sighted a series of Monthly Client Reports prepared by Blifinger Berger Services, which confirms that ash is the only materials being placed in the Stage 2 KVAR.</p> <p>Materials being placed in the Stage 2 KVAR are as per the Environment Protection Licence conditions.</p> <p><b>Compliance.</b></p>

<ul style="list-style-type: none"> <li>Maintenance wastes, such as oils and greases, shall be disposed of by the Contractor to an appropriate facility. Waste generated by site personnel shall be collected on a regular basis. Waste must either be recycled or disposed of to an appropriate facility.</li> </ul>	<p>Blifinger Berger Services utilises Delta Electricity's waste management facilities for wastes it generates (eg waste oil, general waste and materials for recycling). Delta Electricity maintains a number of intermediate waste storage facilities from which wastes are collected by Delta Electricity's waste contractors.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>All cleared vegetation shall be mulched, chipped or re-used on-site for sediment filter fences, site rehabilitation or other uses, where appropriate.</li> </ul>	<p>Delta representatives advised that since the commencement of stage 2 KVAR ash placement operations, no vegetation clearance has occurred.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>Illegally dumped rubbish or waste found inside the ash repository boundaries shall be disposed of by the Contractor at an appropriate licensed waste facility.</li> </ul>	<p>Delta representatives advised that no illegally dumped rubbish/waste has occurred within the Stage 2 KVAR site.</p> <p>Sighted incident register for Stage 3 KVAR operations which confirms that there have been no illegally dumped rubbish/waste incidents.</p> <p><b>Compliance.</b></p>
<ul style="list-style-type: none"> <li>The Annual Environmental Management Report will be submitted to the Director-General complete with waste management data gathered throughout the year.</li> </ul>	<p>This OEMP requirement relates to the need for Delta to prepare and submit an Annual Environmental Management Report (AEMR) as per the requirements of MCoA 7.3.</p> <p>This report is the first AEMR covering the period of operations from April 2009 to April 2010.</p> <p><b>Compliance.</b></p>

#### Other Observations and Evidence

None.



## **Appendix C**

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KVAR – EMR Audit  
Actions relating to partial  
compliances and non-conformances

## KVAR – EMR Audit

### Actions Relating To Partial Compliances and Non-Conformances

Task	Issue	Responsibility	PCD	Status
1	(ref MCoA 2.1) Delta Electricity to formally advise Director-General DoP as to the status of its long-term ash management strategy in accordance with the requirements of MCoA 2.1.	Asset Manager - External Plant	ASAP	Advice to be provided.
2	(ref MCoA 2.8) Time entries on BBS Daily Operational Timesheets should be in a standardised format eg 7.00am and 10.00pm or 0700 and 2200.	Contractor - Conneq	ASAP	Contractor instructed to standardise formatting on timesheets.
3	(ref MCoA 2.9) A report (ie review of logistical arrangements for ash haulage and placement to determine the feasibility of reducing hours of operations) needs to be prepared and submitted to Director-General DoP.	Asset Manager - External Plant	ASAP	Report being prepared.
4	(ref MCoA 3.3) Delta to make arrangements for ongoing operational noise monitoring as per the OEMP requirements and recommendations made in the Stage 2 Kerosene Vale Ash Repository Operational Noise Review. This recommendation has linkages to MCoAs 2.18, 2.19 and 2.20.	Environment Manager	COMPLETE	Initial noise monitoring completed and determined no non-compliance with criterion – No ongoing monitoring required at this time.
5	(ref waste management) Delta to consider conducting security patrols of the Stage 2 KVAR outside of the normal operational hours to deter persons from illegally dumping waste at the Kerosene Vale Ash Repository area.	Security Manger	ASAP	Under consideration.
6	(ref environmental inspections) Consideration should be given to expanding the scope of the daily inspection performed by Delta's Contract Administration to address all of the specific potential impacts detailed in Table 4.8 of the OEMP.	Asset Manager - External Plant	Oct-10	Contract Administrator informed and amending daily inspections.
7	(ref: tracking of OEMP requirements) Delta to create an internal compliance tracking and reporting process for OEMP specifics to be performed at a frequency of monthly or every second month.	Asset Manager - External Plant / Environment Manager	Oct-10	Will be facilitated via action plan / Works Management System.
8	(ref MCoA 5.1) – The Delta Electricity web site for the Kerosene Vale Stage 2 Ash Repository to provide a direct link to the DoP project page, OR links to all relevant documentation.	Public Relations Manager	Oct-10	Website to be updated.
9	Annual Environmental Management Report (April 2009 – April 2010) when completed and approved by the Director-General DoP be provided on the Delta Electricity web site.	Environment Manager / Public Relations Manager	Nov-10	Information to be uploaded after submission to DoP.
10	Delta Electricity web site to provide a regular update on operational progress of KVAR Stage 2 and construction activities (if any). This recommendation has linkage to MCoA 5.2	Asset Manager - External Plant / Public Relations Manager	every 6 months	To be updated Oct/Apr each year.

Work Order Number - 40084974

## KVAR – EMR Audit

### Actions Relating To Partial Compliances and Non-Conformances

11	(ref: MCoA7.3d) – Delta Electricity to provide a copy of the Aurecon (2010) and Malfroy Environmental Services (2010) reports to DoP as supporting documentation to this AEMR.	Environment Manager	Oct-10	Both reports in draft for final review and will be submitted.
12	Delta Electricity has engaged a number of consultants to prepare specialist reports that have been sighted and reviewed in preparing this Annual Environmental Management Report. Recommendations should be tracked and reports provided to the relevant government agencies.	Env Manager	Nov-10	All report recommendations are managed via Delta's Works Management System. Reports will be forwarded as required.
13	Review and revise the project's approved OEMP considering operations in the first year as well as findings and recommendations of specialist reports and this AEMR. DoP and relevant agencies to be consulted regarding any amendments.	Env Manager	Apr-11	Complete review of OEMP to be undertaken after initial EMR report submitted.

Work Order Number - 40084974