



INFORMATION REGARDING ENVIRONMENTAL AUDIT REPORTS

August 2007

VICTORIA'S AUDIT SYSTEM

An environmental audit system has operated in Victoria since 1989. The *Environment Protection Act 1970* (the Act) provides for the appointment by the Environment Protection Authority (EPA Victoria) of environmental auditors and the conduct of independent, high quality and rigorous environmental audits.

An environmental audit is an assessment of the condition of the environment, or the nature and extent of harm (or risk of harm) posed by an industrial process or activity, waste, substance or noise. Environmental audit reports are prepared by EPA-appointed environmental auditors who are highly qualified and skilled individuals.

Under the Act, the function of an environmental auditor is to conduct environmental audits and prepare environmental audit reports. Where an environmental audit is conducted to determine the condition of a site or its suitability for certain uses, an environmental auditor may issue either a certificate or statement of environmental audit.

A certificate indicates that the auditor is of the opinion that the site is suitable for any beneficial use defined in the Act, whilst a statement indicates that there is some restriction on the use of the site.

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FURTHER INFORMATION

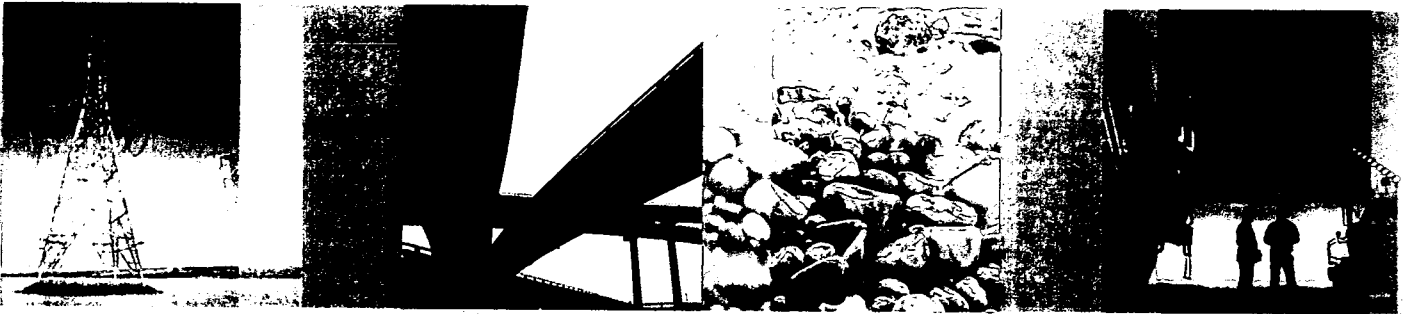
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Statutory Audit Report

International Power Hazelwood

EPA Victoria

February 2006

MAUNSELL | AECOM

Statutory Audit Report

Prepared for

**EPA Victoria : in Accordance to Part IXD of the Environment Protection Act
1970**

Prepared by

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Quality Information

Document Statutory Audit Report

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Prepared by Vic Natoli

Reviewed by David Hyett

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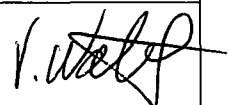
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			Name/Position	Signature
A	15/12/2005	Draft Report for Internal Reviewer	David Hyett Project Manager	
B	25/01/2006	Statutory Audit Report	David Hyett Project Manager	
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Executive Summary

Vic Natoli, an EPA Appointed Auditor, was retained by International Power Hazelwood to assess compliance of the Power Station and mine operations with legal requirements relevant to the site and its operations.

The verification included:

- a review of the sites EPA and DPI licences;
- an assessment of available monitoring data with licence and State Environment Protection Policy requirements;
- a review of on-site programs to implement the requirements of relevant National Environment Protection Measures; and
- an on-site inspection of operations, plant and equipment and interview with environmental personnel.

Conclusions

Based on the data available at the time of the audit, it was concluded that the site operations demonstrated a high level of compliance with relevant legal requirements. There were a number of areas where compliance could not be assessed due to lack of data and a small number of areas where instances of occasional non-compliance were identified (eg. dust emission from the power station stacks). The site inspection also identified a number of housekeeping and storage requirements which could be improved. In all cases where issues were identified, the auditor has documented recommendations for improvement within the audit report.

Vic Natoli
Environmental Auditor
(appointed pursuant to the Environment Protection Act 1970)

1.0 Introduction

1.1 Background

Auditee

International Power Hazelwood.

Audit Objective

To assess International Power Hazelwood's compliance with the audit criteria.

Audit Scope

All operations and facilities operated on the International Power Hazelwood site, including the Mine and Hazelwood Power Station. As compliance audits are scheduled every three years in the site audit program, the period of review was the 2003 and 2004 calendar years and the 2005 year to date. The on-site audit was carried out from the 21 November 2005 to 23 November 2005.

Audit Methodology

- Examining environmental monitoring and performance data.
- Interviews with environmental and relevant operational personnel.
- Observing site practice.
- An inspection of assets and operations to identify actual or potential area of non-compliance.
- Develop recommendations to improve compliance.

Audit Criteria

- EPA Accredited licence.
- DPI Mining licence.
- The EP Act and relevant subordinate State Environment Protection Policies and relevant Regulations.
- Relevant NEPM requirements.

Exclusions

The audit was based on pre-existing information only and did not include:

- any sampling, analysis, or modelling of emissions discharges or contaminants;
- any other legislative requirements outside of those listed above; and
- a review or comment on the systems or procedures operated by the organisation, apart from where an identified non-complying issue was caused by an obvious system deficiency.

Maunsell Pty Ltd was requested to carry out a compliance audit of the Hazelwood Power Station and mine operations by David Addis of International Power Hazelwood. The audit was carried out by Vic Natoli (an EPA Facilities Auditor) from the 21 – 23 November 2005.

The audit was an internal audit carried out as part of the organisation's 2005 audit program. According to EPA Guidelines (No. 952), "an audit conducted as part of an accredited licensee's environmental audit program" is considered an Statutory Audit. However, in this case, the auditee is the client and the EPA Guideline states "There is no specific published guidance for environmental

auditors participating in such an environmental audit program". However, the accredited licenses have an EPA approved audit program, which provides guidance as to the involvement of the auditor and the scope of the audit (as was the case for the audit described in this report).

1.2 Audit Methodology

The audit consisted of:

- an examination of environmental monitoring and performance data;
- interviews with environmental and relevant operational personnel;
- observations of site practices; and
- an inspection of assets and operations to identify actual or potential area of non-compliance.

Recommendations have been made to assist the organisation eliminate or reduce the identified risks and areas of actual or potential non-compliance. In developing the recommendations, the "hierarchy of controls" has been considered to ensure the risk has been minimised, namely:

- priority is given to elimination of the risk if achievable;
- substituting a product or material having a lower impact;
- the use of engineering controls;
- isolating the process and its impacts from the environment; and finally
- the use of administrative controls such as procedures.

The recommendations have also considered other relevant factors, such as the resources available to address the issue and the level of risk, in order produce the optimum environmental benefit.

The impact and risk posed to the environment has been assessed where possible and indicated in the body of the report. This risk is reflected in the priorities set in the "Summary of Recommendations" table. The compliance with legal requirements is also indicated within the report in appropriate locations.

1.3 Discussion of Environmental Risk Assessment

The 53V audit process requires an assessment be made of the risk to the environment due to the facilities and operations being audited. The risks quoted in this report have been determined using the methodology detailed in Appendix 2. The risk assessment calculations have been provided in the body of the report for key issues.

The risks identified in this report have been rated according to the following scale.

Extreme risk:	Immediate action required.
High risk:	Management attention needed and should be resolved as a matter of priority.
Medium risk:	The possibility of additional controls to be assessed and implemented where practicable.
Low risk:	No additional controls required.

The priorities assigned to recommendations are based on the assessed risk.

Note: The risk assessment process is used to determine the risk to the environment. It may also reflect the extent of legal compliance, when the legal requirements are directly related to the impact on the environment. However, the environmental risk assessment may not

accurately reflect the company's compliance with some "administrative" legal requirements, when these requirements are not directly related to an environmental impact. In such instances, a separate comment has been included in the report concerning the legal compliance "risk".

2.0 Site Description

2.1 Site Location and Surrounds

The International Power Hazelwood site is located 160 km east, southeast of Melbourne immediately to the south of Morwell.

Surrounding land use includes:

- North: Freeway borders site and then Morwell township is immediately after the freeway. Wetlands are located to the north-west and light industrial (sawmill, workshops and technical services centre) to the north-east.
- South: Farm land directly south with the township of Churchill to the south-east – approximately 1.6 km from the site boundary.
- East: Energy Brix powerstation, HRL research facility, sawmill, Jeeralang power station, char plant, pine plantations and farmland.
- West: Pine plantations and farmland. This area also covers the HRL exploration license.

The closest residence, is the township of Morwell which abuts the northern boundary of the site. The Morwell River runs along the western boundary. Eel Hole Creek enters the site at the south. The cooling pond is built on the former location of this Creek and exits the site from the north-west corner of the pond. Bennetts Creek crosses into the southeast section of the site for approximately 400 m.



Figure 1 — Aerial photograph of site

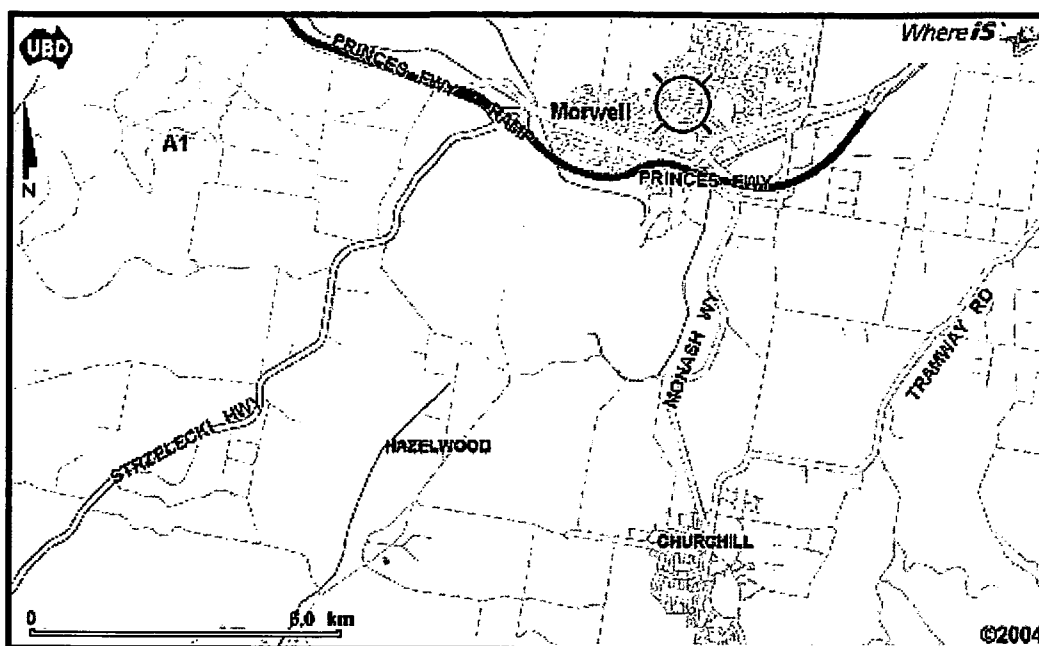


Figure 2 — Site location plan

2.2 Site Operations

International Power Hazelwood (IPRH) is a privately owned business operating an integrated brown coal mine and power station. The business operates a 1600 megawatt (MW) power station fuelled by brown coal from its nearby open cut mine. The power station operates eight 200 MW Units. The complex covers 3554 hectares and provides direct employment to 500 people. Construction of the power station was completed in 1971.

Hazelwood Power Corporation Pty Ltd was formed on 1 February 1995, when the Victorian State Government disaggregated the corporatised generation company, Generation Victoria, into five separate state-owned generating businesses. International Power Hazelwood (trading as Hazelwood Power) is owned by a consortium called The Hazelwood Power Partnership which comprises International Power (UK) (92% share) and the Commonwealth Bank Group (Australia) with an 8% share.

2.2.1 Power Generation

The electricity generated at the Power Station comes from eight "Units". A complete Unit is made up of a boiler, steam turbine, generator, electrostatic precipitators, chimney and many pumps and motors to drive the cooling system.

2.2.2 Boiler and Exhaust

Steam to drive the turbines and generators is created in the eight on-site boilers. The walls of each boiler are made up of many kilometres of steel tubes full of water. The burning coal reaches temperatures in excess of 500 degrees Celsius within the walls and heats the water in the tubes. The water rises through the tubes into the boiler drum, turning first into steam and then into superheated steam at 215 degrees Celsius.

The high temperature and pressure steam is fed into the multi-stage steam turbine. As the steam passes through each successive stage of the turbine, both the temperature and pressure fall as the steam drives the turbine shaft round at 3,000 rpm.

Each boiler is 50 metres high, weighs 1,800 tonnes and has 174 tonnes of water circulating through it. Each boiler is suspended from the roof of the power station to allow for boiler expansion, which can be as much as 20 cm.

The exhaust from the boilers is passed through Electrostatic Precipitators (ESP) to remove fly ash from the flue gas. This is accomplished in the ESPs by applying a very strong negative charge of about 60,000 volts to the flue gasses exiting the boiler, which charges the dust particles in the flue gas. The flue gases and charged particles flow past large metal plates in the precipitators which have a very strong positive charge. The negatively charged airborne dust and ash are attracted to the opposite charge in the plates. The plates provide a total collecting surface of 21,000 square metres in the three precipitators available for each boiler. The plates are then regularly rapped (shaken) with weighted hammers, causing the collected dust to fall off the plates.

2.2.3 Ash Ponds

The dust collected from the bottom of the precipitators is transported hydraulically to the site ash pond. The transported ash is allowed to settle in the pond and the "ash water" pumped back to the station for re-use. The pond is periodically dredged and the collected ash is disposed of on the overburden dumps. The ash contains soluble salts, which increase the salinity of the ash water. To maintain a manageable salinity level, the ash water is supplemented with fresh water. The excess ash water is pumped to the Loy Yang A ash pond and from there it is discharged off-shore at McGaurens Beach via an outfall pipeline (Note: the EPA discharge license for the ash water discharge is in the name of Gippsland Water and is managed by Loy Yang Power).

2.2.4 Chimneys

The exhaust from each boiler is discharged from a dedicated chimney. Each chimney is 137 metres high. It has a diameter of 11 metres at the base, 7.4 metres at the top and is made from self-supporting reinforced concrete lined with fire brick.

2.2.5 Mine

Hazelwood Mine covers an area of around 620 hectares with usable mining reserves of over 600 Mt, enough to last many decades into the future. Average depth of overburden is 15 metres and average coal depth is 100 metres. The coal is mined by bucket wheel dredgers and transported to the power station by an extensive 50 kilometre conveyor belt system.

2.2.6 Overburden Dump

Overburden removed from the mine area is transported by conveyor to the overburden dump. The overburden is spread on the dump using an overburden "stacker", which eventually forms rounded hills of overburden material. Once the overburden is stacked to its final form, it is covered with a layer of topsoil and rehabilitated by planting with grasses.

3.0 Legal Compliance

3.1 EPA Licence Compliance

A review was carried out of the site's EPA accredited licence No. EM 30856. A summary of findings is provided below.

Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
<p>Accreditation</p> <p>The basis for accreditation included implementation of an:</p> <ul style="list-style-type: none"> • Environmental Management System; • Environmental Audit Program; and • Environment Improvement Plan (EIP). 	<p>Site is certified to ISO 14001 - viewed current certificate.</p> <p>Site has an Audit Program - viewed audit schedule and sample of recent audit reports.</p> <p>Site has an EIP - viewed current EIP (6/04).</p>	<p>Y</p>
<p>State Environment Protection Policy</p> <p>1.1 The licence holder must ensure that the waste discharged from the premises at all times complies with the requirements of State environment protection policies.</p>	<p>Refer to findings in following sections.</p>	<p>-</p>
<p>Power Station Fuel</p> <p>1.2 Other than with written approval from EPA, fuel burnt at the power station must only consist of:</p> <ul style="list-style-type: none"> (a) brown coal; (b) biomass consisting of wood materials such as sawdust, wood chips, wood shavings or the like from untreated timber, co-fired to a maximum 10 per cent blend by mass with brown coal, and; (c) for the auxiliary firing of the power station, any combination brown coal, black coal, and liquefied petroleum gas. 	<p>The main fuel is brown coal and the normal start-up fuel is briquettes, which are made from brown coal. Biomass has been used since October 2005. The 10% maximum is the most that can be used operationally, therefore it is not likely the limit will be exceeded. LPG is used to fire up the startup fuel. Black coal has been used as an alternative to briquettes as a start-up fuel.</p>	<p>Y</p>

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
<p>Waste Minimisation</p> <p>1.3 Wastes generated at the premises must be minimised in accordance with an Environment Improvement Plan endorsed by the Authority.</p>	<p>Three waste minimisation actions are listed in the EIP.</p> <ol style="list-style-type: none"> 1. Re-use of saline water and minimising discharges. 2. Investigate/Develop viable waste to fuel opportunities. 3. Review and update PCB management on site. <p>Reviewed annual ash water discharge volumes. These have decreased from a peak of 3207 ML/yr to 1651 ML/yr for the 2005 calendar year to date, apparently due to the water reduction initiatives.</p> <p>Commenced using biomass as a fuel source. Still to optimise the correct chip size to feed into the boiler and supply volumes are variable. Viewed internal newsletter.</p> <p>PCB volumes have been reviewed and the phase out progress has been recorded.</p> <p>Viewed the internal Paradigm EMS improvement opportunity database (lists actions taken). However, only 5 "Opportunities for Improvements" have been completed (due date was 1/6/05).</p>	P
<p>Ashing Waste Discharges</p> <p>1.4 Wastes from the Hazelwood Power Station ashing system may only be discharged into the Hazelwood Ash Pond No. 4 ("HAP4") or Hazelwood Ash Pond No. 1 ("HAP1") and onto the Hazelwood Ash Dump managed in accordance with the certified Environmental</p>	<p>The site inspection confirmed that the ash was discharged into the ash ponds. The excavated ash from the ash ponds is reportedly disposed of onto the ash dumps, however, this could not be positively confirmed as excavations were not</p>	Y

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
Management System, except as specified in condition 1.9(a)(iii).	occurring at the time of the audit.	
<p>1.5 Wastes discharged into HAP4 or HAP1 may only consist of:</p> <p>(a) hydraulically and mechanically transported ash and saline water;</p> <p>(b) wastewater from acid cleaning and conditioning of power station plant; and</p> <p>(c) saline wastewater from demineralisation plants</p> <p>generated in the Hazelwood Power Station and the EBAC production complex¹.</p>	As far as could be confirmed, waste deposited into the ash ponds only consist of the listed wastes.	Y
<p>1.6. Wastes discharged onto the Hazelwood Ash Dump may only consist of:</p> <p>(a) ash excavated from HAP4 or HAP1; and</p> <p>(b) coal sludges excavated from the Works Effluent Pond.</p>	<p>The ash dump area appears to receives excavated ash and coal sludge only.</p> <p>Inspected ash dump.</p>	Y
<p>1.7. Wastes discharged onto the Hazelwood Ash Dump may only consist of:</p> <p>(a) ash excavated from HAP4 or HAP1; and</p> <p>(b) coal sludges excavated from the Works Effluent Pond.</p>	<p>HAP4 supplies ash return water to Hazelwood and EBAC with excess ash water discharging to the Integrated Effluent Disposal System.</p> <p>Viewed during site inspection.</p>	Y
<p>Other Wastewater Discharges</p> <p>1.8 Wastewater, other than ashing and saline wastewater, from the power station and mine areas may only be discharged to:</p>	No other waste discharges were evident during inspection.	Y

¹ The power station operated by Energy Brix Australia Corporation Pty Ltd.

* Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.

N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.

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Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
(a) the Works Effluent Pond; (b) Hazelwood Cooling Pond; (c) Morwell River (via discharge point H110 and Eel Hole Creek); and (d) Morwell River (via discharge point M90).		
1.9 Waste discharged to the locations specified in condition 1.8 may only consist of: (a) to the Works Effluent Pond <ul style="list-style-type: none"> (i) boiler water, blowdown water, washdown water and stormwater from the Hazelwood Power Station; (ii) stormwater, washdown water and fire spray water from Morwell Mine operations; (iii) demineralisation plant effluent, and emergency overflows from the ash and ashwater systems at Hazelwood Power Station; (iv) emergency drainage from boiler cleaning operations; and (v) artesian water from the Morwell Mine. (b) to Hazelwood Cooling Pond <ul style="list-style-type: none"> (i) treated wastewater and stormwater from the Works Effluent Pond; (ii) cooling water from Hazelwood Power Station; (iii) artesian water from the Morwell Mine; (iv) demineralisation plant draindown; and (v) stormwater and washdown water from the south side of Hazelwood Power Station. (c) to Morwell River (via discharge point H110 and Eel Hole Creek) <ul style="list-style-type: none"> (i) treated wastewater and stormwater from Hazelwood 	Waste streams listed in the licence cover all liquid effluents generated in the respective production areas. Therefore, no other wastes are discharged.	Y

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
<p>Cooling Pond spillway and cooling tower.</p> <p>(d) to Morwell River (via discharge point M90)</p> <p>(i) stormwater from mine west perimeter wetlands (via internal sampling point M90A); and</p> <p>(ii) treated stormwater from the western overburden dump (via internal sampling point M90B).</p> <p>Note: Suitable facilities shall be installed, and precautions shall be taken, to ensure that the overflows and discharges referred to in condition 1.9(a)(iii) and (iv) do not normally occur. When such overflows occur the Authority shall be notified in writing in accordance with condition 2.3 of this licence.</p>		
<p>1.10 Treated wastewater and stormwater from the Hazelwood Cooling Pond may only be discharged to Eel Hole Creek at the discharge point H110 shown on the attached Plan of Premises 1.</p>	<p>The only spill way from the pond and the cooling towers into the pond is into Ed Hole Creek.</p>	<p>Y</p>
<p>1.11 Stormwater from the western perimeter of the Morwell Mine may only be discharged:</p> <p>(i) after treatment;</p> <p>(ii) to the Morwell River at the discharge point M90 shown on the attached Plan of Premises 1.</p>	<p>Stormwater from the mine perimeter is treated in a polymer dosing station to settle out suspended solids prior to discharge to the Morwell River flood plain, which drains to the River.</p> <p>Viewed during inspection.</p>	<p>Y</p>
<p>1.12 The characteristics of the wastewater discharged from each of discharge points H110 and M90 must not exceed the values, range or requirement set out in Table 1.</p> <p>Table 1: — Wastewater discharge limits⁴</p>	<p>Test results identified elevated Total Dissolved Solids (TDS),</p>	<p>Y</p>

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
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Audit Criteria				Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
CHARACTERIS- TIC	DISCHARGE POINT	MAXIMUM VALUE	ANNUAL MEDIAN VALUE	<p>Colour and pH in the cooling pond discharge (H110). The elevated TDS and pH were due to drought conditions which result in a concentration of salts. The site received a Section 30A exemption from EPA on the 17 occasions during 2004 when elevated discharges occurred. Therefore, the site was in technical compliance with legal requirements.</p> <p>Monitoring also identified elevated colour in the cooling pond following a storm event in 2004, but there was no discharge from the site at the time, therefore there was no breach. A single pH reading in 2005 exceeded the Section 30A exemption level of 8.8 (measured 8.9) which was reported to EPA. However, this is within instrument error for pH measurements. The Local EPA has agreed it was not a formal breach, as the apparent exceedance of the criterion was within the error level associated with the test method. Note: this discussions occurred at the most recent EPA Liaison meeting (18/11) and meeting minutes had not been produced and the EPA officer was on-leave at the time of the audit, so could not be confirmed.</p> <p>Viewed report to the Environment Review Committee, Environment Performance Report 2004 to EPA (which includes 2003 monitoring data) and also 2005 test data to date.</p>	
Rate of discharge, Ml/d	H110 M90	n/s ¹ n/s ¹	75 ^{2,3} 3 ²		
Total dissolved solids, mg/l	H110 M90	950 800	900 n/s ¹		
Colour, Pt-Co units	H110 M90	90 see note 4	70 n/s ¹		
Suspended solids, mg/l	H110 M90 ⁵	25 60	15 40		
Turbidity, NTU	H110 M90 ⁵	35 80	20 30		
Temperature, °C	H110	Upstream + 16			
		RANGE			
pH	H110, M90	6.0 to 8.5			
		REQUIREMENT			

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria			Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
Floating oil, grease, scum, litter, foam or other objectionable matter	H110, M90	There must be none visible.		
<p>NOTES:</p> <ol style="list-style-type: none"> 1. "n/s" means not specified. 2. Annual mean. 3. Calculated according to the following formula: Discharge Rate = (Combined discharge flow) - (Combined inflow from North and South branches of Eel Hole Creek) - (Inflow from Nadenbousch's Road) 4. The discharge shall not cause the colour of the Morwell River at the downstream sampling point to breach the <i>State environment protection policy (waters of Victoria)</i>. <p>Limits apply separately at internal sampling points M90A and M90B.</p>				
<p>Asbestos Landfill</p> <p>1.13 Asbestos wastes and synthetic mineral fibre ("SMF") wastes may only be discharged onto or into the asbestos landfill shown on the attached Plan of Premises 1.</p>			<p>Asbestos is disposed of into the asbestos landfill. SMF is no longer disposed of on-site, but taken off-site for disposal.</p> <p>Viewed "Disposal of Asbestos and SMF" record sheets which list quantity disposed, location, driver's name and date. Inspected the asbestos dump.</p>	Y

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 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
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Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
1.14 Wastes deposited at the asbestos landfill may only consist of: (a) asbestos; (b) asbestos products; (c) materials containing asbestos; (d) SMF; and (e) materials containing SMF which has been generated at the premises.	As above	Y
Financial Assurance 1.15 By 1 October 2001 the licence holder must submit a financial assurance proposal in accordance with section 67B of the <i>Environment Protection Act 1970</i> to EPA for approval.	Financial Assurance proposal was submitted to EPA. Viewed proposal to EPA and letter from EPA dated 24/5/02 acknowledging receipt of the proposal submission and that it fulfilled the requirements.	Y
Discharges to Air .16 The total mass discharge rate ¹ of each waste discharged from the discharge points identified on the attached Plan of Premises 2 must not exceed the limit specified for that waste in Table 2.	Maximum current particulate mass rate is approximately half allowable limit. Nitrogen Oxides* – is below target value. Carbon Monoxide* - Three test periods in 2003/04 identified 30 minute peak values above the internal target value (13,277, 16,561 & 25,555 g/min cf. a target of 10,000 g/min). Sulphur dioxide* - Two test periods in 2003/04 identified 30 minute peak values above the internal target value (14,210 &	Unknown (Testing is only on one Unit, while licence limits are based on all 8 units combined. Therefore, cannot confirm if a

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Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
	<p>13,514 g/min cf. a target of 8,338 g/min).</p> <p>Sulphur Trioxide* - Two test periods in 2005 identified emission rates over a 4-5 hour sampling period above the target value (880 & 1170 g/min cf. a target of 838 g/min).</p> <p>Chlorine compounds* - all test results were well below the target value.</p> <p><i>*-One unit is measured every six months, however, the license limit is for all 8 units combined. The Internal Target used to assess compliance is one eighth of license limit.</i></p> <p>Viewed Environment Performance Report 2004 to EPA (which includes 2003 data) and also 2005 test data to date.</p>	<p>licence exceedance has actually occurred, even if the test value was above the internal target of one-eighth of the licence limit).</p>
<p>1.17 The concentration of particulate matter¹ discharged from each of discharge points 1, 2, 3, 4, 5, 6, 7 and 8 must not exceed 0.15 grams per normal cubic metre for more than 30 hours in each calendar month, as provided in Clause 23 of the <i>State environment protection policy (Air Quality Management)</i>.</p>	<p>There have been 170.5 hours of dust emissions above the limit during 2005 to date which could not be claimed under the licence exemption. This compares to 120 hours in 2004 and 118.5 in 2003. This increase in non-claimable hours has been due to a reduction in dust limit from 0.4 g/m³ down to 0.15 g/m³ in October 2004. This has been exacerbated by multiple outages which has required multiple shut downs and run-ups (the dust precipitators are turned off during shuts and run-up periods).</p> <p>Negotiations are currently underway with EPA to allow a station wide period of allowable elevated emissions rather than allowable periods per unit. This would decrease the total</p>	<p>N</p>

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Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)														
<p style="text-align: center;">Table 2 — Air Emission Limits ¹</p> <table border="1" data-bbox="241 832 1057 1216"> <thead> <tr> <th data-bbox="241 832 589 915">WASTE</th> <th data-bbox="589 832 1057 915">TOTAL MASS DISCHARGE RATE (g/min)</th> </tr> </thead> <tbody> <tr> <td data-bbox="241 915 589 965">Particulate Matter ¹</td> <td data-bbox="589 915 1057 965">32,000</td> </tr> <tr> <td data-bbox="241 965 589 1016">Nitrogen oxides ²</td> <td data-bbox="589 965 1057 1016">80,000</td> </tr> <tr> <td data-bbox="241 1016 589 1066">Carbon monoxide</td> <td data-bbox="589 1016 1057 1066">80,000</td> </tr> <tr> <td data-bbox="241 1066 589 1116">Sulfur dioxide</td> <td data-bbox="589 1066 1057 1116">66,700</td> </tr> <tr> <td data-bbox="241 1116 589 1166">Sulfur trioxide</td> <td data-bbox="589 1116 1057 1166">6,700</td> </tr> <tr> <td data-bbox="241 1166 589 1216">Chlorine Compounds ³</td> <td data-bbox="589 1166 1057 1216">26,400</td> </tr> </tbody> </table> <p>NOTES:</p> <ol style="list-style-type: none"> <li data-bbox="219 1266 846 1292">1. Emission limits are calculated as 30-minute averages. <li data-bbox="219 1307 1030 1332">2. "Nitrogen oxides" means the sum of all oxides of nitrogen expressed as 	WASTE	TOTAL MASS DISCHARGE RATE (g/min)	Particulate Matter ¹	32,000	Nitrogen oxides ²	80,000	Carbon monoxide	80,000	Sulfur dioxide	66,700	Sulfur trioxide	6,700	Chlorine Compounds ³	26,400	<p>hours of exceedance as faults causing multiple shutdowns typically occur on one unit at a time.</p> <p>Note: The dust precipitators have been recently replaced, therefore, there is little more than can be implemented to improve their performance.</p> <p>Viewed Environment Performance Report 2004 to EPA (which includes 2003 data) and also 2005 monitoring data to date.</p> <p>Refer above.</p>	-
WASTE	TOTAL MASS DISCHARGE RATE (g/min)															
Particulate Matter ¹	32,000															
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Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
nitrogen dioxide. 3. "Chlorine compounds" includes chlorine and is expressed as chlorine.		
2. MONITORING AND REPORTING Ambient Air Monitoring 2.1 The licence holder must conduct or cause to be conducted an air and meteorological monitoring program which will measure the effect of emissions to air from Latrobe Valley power stations on the quality of ambient air in the Latrobe Valley region, in accordance with requirements specified by the Authority.	Hazelwood Power provides funding for the Latrobe Valley air monitoring network. Viewed receipts from Power Works for the LVAMN funding.	Y
Annual Performance Report 2.2 By 1 April each year, the licence holder must submit a performance report to the Authority for the preceding calendar year, prepared in a form agreed between the Authority and the licence holder. The performance report must be authorised by the chief executive officer of the licence holder.	Performance Reports have been prepared and submitted to EPA. Viewed Environment Performance Reports (2002, 2003 and 2004). Covering letter to EPA is signed by the CEO.	Y
Notifications and Exception Reports 2.3 The licence holder must notify the Authority's Gippsland Office as soon as practicable by fax (03 5174 7851) of: <ul style="list-style-type: none"> (a) any event causing an overflow, discharge or loss of saline wastewater from the premises which is potentially detrimental to the environment; (b) any event causing an overflow, discharge or loss of saline wastewater from any pumping station, pipeline or scour valve associated with the saline waste disposal system between the premises and the Loy Yang Ash Pond which is potentially 	EPA is initially notified of any ash water spills or releases, however, unclear if it is verbally, by fax or E-mail. Viewed letter (6/05) referring to "initial notification", however, could not find a copy of any fax on the EPA correspondence file.	P

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Audit Criteria	Objective Evidence Reviewed	Compliance* (Yes/No/ Partial)
detrimental to the environment; (c) any flow from the ashing systems in Hazelwood Power Station to the Hazelwood Cooling Pond; and (d) any incident that may lead to an unlicensed discharge of waste or an environmental hazard.		
2.4 The licence holder must notify the Authority's Gippsland Office as soon as practicable in writing of any performance monitoring result which indicates a breach of any condition of this licence or any State environment protection policy.	To date, the site has been notifying EPA during the quarterly performance/liaison meetings, rather than as per license conditions.	P
2.5 Within two weeks of the occurrence of any event specified in condition 2.3, the licence holder must provide a written report to the Authority's Gippsland Office detailing the reasons for the event, actions taken to contain the event, and actions taken to prevent a recurrence.	Refer to 2.4 above.	Y

Conclusion

Compliance with licence conditions is high. A number of administrative issues (such as reporting) need to be addressed and there is an on-going issue with compliance to the dust licence limit and excessive dust emissions. The site has recently installed new dust precipitators, therefore, additional engineering works to reduce dust emissions does not appear appropriate. The majority of the excess dust emissions can be attributed to the recent decrease in the licensed dust limit (from 0.4 to 0.15 g/m³) to make the licence limits at Hazelwood consistent with the dust limits at other Latrobe Valley power stations. This was exacerbated by multiple breakdowns requiring units to shut down and restart multiple times (the dust precipitators are turned off during run-ups for safety reasons).

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Risk Assessment

Scenario	=	Licence breach resulting in significant environmental impact (medium term impact, community complaints)
Consequence	=	Major: Off-site impact with medium term (several years) loss of beneficial use/s. Environmental impact is a clear regulatory breach. Will impact on the community.
Likelihood	=	Very unlikely: Event may occur but only in exceptional circumstances
Risk	=	Medium: The possibility of additional controls to be assessed and implemented where practicable

Recommendation/s

The site should review the "Opportunities for Improvements" located in the Paradigm EMS improvement opportunity database and reset the due dates for those items which are past their due dates. Regular reviews should be scheduled to identify items which are due in the near future and ensure actions are in place to meet the scheduled completion dates.

Once the licence is renegotiated with EPA to allow for a site wide exemption for excess dust emissions (rather than the current Unit by Unit basis), the excess dust emission situation should be re-assessed. If excess dust emissions are still occurring, due to multiple breakdown events, the station should make additional efforts to implement corrective maintenance plans to avoid the breakdowns.

The site should ensure that EPA is notified of any ash water spillage by fax as soon as practicable and copies of the fax should be placed on the EPA correspondence file. This requirement should be specified in the site communication procedure.

The site should ensure that EPA is notified in writing of any monitoring results which exceed the licence limits as soon as practicable and copies of the correspondence should be placed on the EPA correspondence file. This requirement should be specified in the site communication procedure.

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3.2 Mining Licence Compliance

A review was carried out of the site's Mining Licence No. 5004. A summary of findings is provided below.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
<p>1. WORK PLANS & ENVIRONMENTAL MANAGEMENT</p> <p>1.1. Work shall be carried out in accordance with the approved work plan. (incorporating a rehabilitation plan) as amended from time to time in accordance with the Mineral Resources Development Act 1990 (MRD Act). Where any inconsistency occurs between the work plan and other licence conditions or regulations, the licence conditions and regulations have precedence.</p>	<p>The Work Plan consists of proposed works and actions and is then progressively updated based on changed conditions.</p> <p>Viewed Workplan, including updates.</p>	Y
<p>1.2. The licensee shall, within 60 days of being requested by the Executive Director, Minerals and Petroleum of the Department of Natural Resources and the Environment, submit a report on the status of work as per Schedule 14 of the MRD Act.</p>	Viewed progress report to DPI.	Y
<p>1.3. An Environmental Review Committee (ERC) shall be formed, comprising appropriate representatives from the Department of Natural Resources and the Environment (DNRE), representatives of the Licensee, the Environment Protection Authority, the responsible water authority and a representative of the Minister responsible for the Water Act 1989, the LaTrobe Council and any other relevant agency with an interest or control over the site or operations. The community shall also be represented, with nominations to come from the Latrobe Council. Up to two community representatives may be selected for renewable fixed terms. The ERC shall be convened at least</p>	<p>ERC has been formed and is constituted as per requirements and meets quarterly.</p> <p>Viewed company annual report that lists committee members and timetable for 2006.</p>	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
once in every 6 months to review environmental effects of the project.		
1.4. Results of environmental monitoring conducted under the Environmental Monitoring Program (EMP) shall be regularly reported to the ERC in a format agreed to by the Committee to enable it to assess environmental performance.	Monitoring reported graphically, showing historical data and trends at each ERC meeting. Viewed reports to ERC.	Y
1.5. The ERC may from time to time recommend variations to the EMP and licence conditions where appropriate. Any variations to the EMP as accepted by the licensee and DNRE shall be registered as a variation to the work plan and shall be implemented.	There does not appear to have been any recommended changes to the licensee or EMP. Statement by mine environment officer and no documented evidence to the contrary.	Y
2. FENCING AND SECURITY		
2.1. Where public access is a safety hazard within the mining licence, the licensee must fence and signpost the area to ensure public safety is maintained.	The inspection did not identify any issues with lack of fencing or security.	Y
2.2. When directed by an Inspector of Mines (hereinafter referred to as an Inspector), a fence or fences shall be erected around specified work site areas to a written specification which may include time limits. Gates of a similar standard shall be provided when directed. Gates and fences shall be maintained during the term of the licence to the satisfaction of an Inspector.	Site staff are unaware of any notices requiring works on site fencing. No issues identified during the inspection.	Y
3. ROADS		
3.1. Internal roads additional to those shown in the working plan	Site staff are unaware of any notices requiring works on roads.	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
shall be sited as approved or directed by an Inspector after consultation with the Department of Natural Resources and the Environment in the case of Crown land.	No issues identified during the inspection.	
<p>3.2. Subject to the approval of the Mine Manager and appropriate site induction any such road may be used:\</p> <p>(a) by officers of or persons authorised by the DNRE or employees or persons engaged in fire control. (Mine Managers approval not required by authorised fire fighters in an emergency provided they are under the supervision of a mine employee).</p> <p>(b) for the extraction of forest produce or for mining purposes by any other licensee under the MRD Act 1990 or Forests Act 1958 (or any successor legislation) under such conditions as may be determined by agreement between the parties concerned; and</p> <p>(c) by the landowners or their agents where the licence covers private land.</p>	Roads are available for use by the listed persons provided they have undergone site induction.	Y
<p>3.3. The licensee shall ensure that all internal roads are properly formed, drained, surface treated and maintained to the satisfaction of an Inspector and that any dust nuisance originating from use of the roads by the licensee shall be controlled to the satisfaction of an Inspector.</p>	Reportedly, no notices have been received from a mining inspector concerning the condition of the roads. No issues were identified with the mine roads during the inspection.	Y
<p>4. SURFACE DISTURBANCE</p> <p>4.1. The area of surface disturbance must be kept to a minimum.</p>	For cost considerations, soil stripping and dumping only occurs as required immediately in front of the working mine face.	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
	Observed tree clearing and stripping operations immediately in advance of the mine working face during inspection.	
4.2. Adequate provision shall be made for the separate stockpiling or immediate utilisation for rehabilitation of any soils. These materials, if stored, are to be stored in neat and tidy dumps not exceeding 2 metres in height and such dumps are to be protected from erosion.	Stored soil stockpiles are sown with temporary grass cover to avoid erosion. Observed during inspection.	Y
4.3. No area shall be opened up for exploration, mining and ancillary operations, except where approved as part of the approved work plan.	Mining occurs as per the current Work Plan, however, the Work Plan does not address the cultural heritage stripping (identifying cultural & heritage sites in future mining areas) or the exploratory drilling operations that were happening at the time of the audit.	N
4.4. Where the licence covers Crown land all surface activity may be subject to compliance with the Forests Act 1958 and Regulations.	There is Crown land around the Morwell River, however, it is not forested.	NA
4.5. Where the licence covers private land, such fire fighting equipment and appliances shall be kept on site in working order as may be required by the Country Fire Authority. With respect to public land, the Forest Fire Regulations 1992 require the provision of fire fighting equipment and the provision of spark arrestors on engine powered equipment.	The site does have some private land (no public land). The site maintains fire fighting crews, tankers, fire fighting equipment and provides fire training.	Y
4.6. Burning of any timber at the site shall be done in accordance	No on-site burning is permitted.	NA

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
with any requirements of the Local Municipality, DNRE and the Country Fire Authority.		
5. DRAINAGE AND DISCHARGE CONTROL 5.1. Any discharges from the licence area shall be minimised and any water discharged must be as free as possible of pollutants, save as provided by any licence issued pursuant to the Environment Protection Act.	All discharges from the license area are controlled by the EPA license (refer to findings in section 4 above).	Y
5.2. All discharges shall meet the standards required under the State Environment Protection Policies under the Environment Protection Act 1970	All monitoring results are in compliance with the EPA license limits, or with the granted exemptions (refer to findings in section 4 above). Viewed monitoring results.	Y
5.3. Sediment retention structures, including dams, shall be constructed in accordance with the approved work plan. An Inspector may also direct such works to be undertaken, where necessary, to control drainage from any disturbed area.	The sedimentation system was reportedly approved by EPA over 10 years ago (could not be confirmed, but is likely the case given EPA scrutiny over the years). The Work Plan does not specify the design, but it does reference the polymer dosing station.	Y
5.4. Rainfall and other natural waters shall be diverted away from works area so as to control erosion, pursuant to Condition 7. However, such works shall, as far as practicable, not cause undue alteration to the general drainage pattern beyond the licensed area.	Perimeter drains are installed between the Morwell township and the mine. The recent mine expansion has overrun previous perimeter drains to the west and water into the mine has subsequently increased. However, this has not resulted in erosion. Viewed work area during inspection.	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
6. TAILING DAMS 6.1. All proposed work associated with the construction of tailing dams or other tailing impoundment areas, shall be subject to written approval by the Chief Administrator (or his delegate) following certification by an approved geotechnical engineer.	The site does not have a tailings dam.	NA
7. GROUNDWATER 7.1. Any aquifer dewatering and/or depressurisation must be carried out in accordance with the conditions specified in the Groundwater Licence issued by the Minister responsible for the Water Act 1989.	Refer to Groundwater License compliance review in the following section.	-
7.2. A monitoring program consistent with the programs previously carried out by the State Electricity Commission of Victoria and Generation Victoria to determine the impacts of dewatering/depressurisation both on site and regionally must be maintained to the satisfaction of an Inspector and the responsible Minister under the Water Act 1989 or his delegate. The licensee shall ensure that results of the monitoring program are reported to the responsible Minister under the Water Act 1989 or his delegate and the Environmental Review Committee annually and at whatever times required by the Groundwater Licence.	Annual depressurisation report provided to Southern Rural Water and DPI. Viewed 2004/05 report.	Y
7.3. In the event that the monitoring program in 7.2 indicates	No adverse impacts identified by the monitoring.	NA

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material adverse impacts beyond those evident at the date of issue of the licence which are attributable to the dewatering/depressurisation by the licensee after the date of issuing of the licence then the licensee must institute such reasonable remedial action as may be required by the Inspector and the responsible Minister under the Water Act 1989 or his delegate to ameliorate these effects, proportionate to the licensee's contribution.	Viewed 2004/05 report.	
7.4. For the purposes of 7.3 material adverse impacts comprise effects on aquifers in the LaTrobe Valley such that the interests of other users are materially prejudiced or subsidence on a significant scale occurs as a direct result of ground water extraction which materially adversely affects private property or public lands.	As above.	NA
7.5. Any remedial action under 7.3 must be to the satisfaction of the Inspector and the responsible Minister under the Water Act 1989 or his delegate.	As above.	NA
8. EROSION 8.1. The licensee shall undertake all necessary works to ensure that the potential for erosion of land affected by mining is minimised.	Long term stockpiles are revegetated. A "Disturbed Land Erosion" audit was carried out in early 2005. A number of erosion issues were identified. The three high priority issues identified are being actioned. Viewed audit report and action items.	Y
8.2. Should erosion occur, the licensee shall take all practical steps to minimise the erosion to the satisfaction of an Inspector.	As above	Y

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9. HYDROCARBONS		
9.1. Storage of hydrocarbons shall be undertaken in general accordance with AS 1940. Bunding or other methods to the satisfaction of an Inspector, capable of containing 125% of the maximum volume stored, shall be constructed around all fuel and lubricant storage facilities.	Refer to site inspection section of this report	-
.2. Any drainage from an area that may be subject to hydrocarbon spillage, such as a machinery maintenance area, shall be free from hydrocarbon contamination and directed to a sump or interceptor trap.	Fuel farms and oil storage areas drain to interceptor pits. Inspected fuel farms.	Y
10. DUST EMISSIONS		
10.1. Dust control measures must be in place to minimise dust generation so that detriment is not caused to surrounding areas and residents.	The site has a dust control plan as part of the site Environmental Management System (EMS). This mainly requires road watering with tankers and use of water sprays in the mine. Dust monitoring is carried out in 4 locations along the boundary. Monitoring has shown dust levels were below the target of 4 g/m ² . There were 3 complaints in 2005 due to a single severe storm event in February. Viewed EMS plans and monitoring records. Viewed several operating water tankers during site inspection. Their effectiveness was evident.	Y
10.2. Dust resulting from all operations including extraction, loading,	As above.	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
transport and stockpiling shall be controlled to the satisfaction of an Inspector. The licensee must install any dust control measures to the satisfaction of an Inspector.	Site staff are not aware of any notices from mine inspectors regarding dust.	
<p>11. NOISE</p> <p>11.1. Precautions to the satisfaction of an Inspector shall be taken to ensure that noise emissions comply with the provisions of any regulations under the MRD Act as they relate to noise exposure to workmen. Noise emissions measured at any residence within the vicinity of the licensed area shall comply with limits set using the procedures described in State Environment Protection Policy No. N1 (SEPPN-1) or any other limit set under the Environment Protection Act where SEPPN-1 is not applicable.</p>	<p>Noise monitoring was carried out on the 15/7/02 at one location close to a residential site during night time overburden removal activities. The noise level was measured at between 49 and 52 dB(A) during operations and 49 dB(A) when no activities were being carried out. The "background" level is typical of an industrial area, therefore the N-1 Policy is applicable. However, the noise report notes that a formal assessment to determine the allowable noise level had not been carried out, therefore, it was not possible to assess compliance with the N-1 Policy. This is still the case, therefore, it is not possible to determine compliance during this audit. However, there have been no noise complaints due to mine operations.</p> <p>Viewed noise report and complaints log.</p>	Unknown
11.2. The mines are permitted to operate 24 hours per day 7 days per week.	Operations are continuous.	Y
<p>12. PARKING AREAS</p> <p>Parking areas are to be provided within the licensed area for all vehicles used in connection with the operation, including private vehicles used by employees and visitors.</p>	Parking areas have been established with segregated visitors, employees and contractors.	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
	Viewed parking areas.	
<p>13. DERELICT AND REDUNDANT PLANT</p> <p>All derelict and redundant plant, vehicles, machinery and equipment shall be either:</p> <ul style="list-style-type: none"> • removed from the licensed area and deposited at an appropriate waste disposal site; or • properly stored/stockpiled on the licensed area in a location and manner approved by an inspector. 	<p>Redundant plant is either reused, out up for swap or stored in a lay down yard.</p> <p>The lay down yards were inspected. some issues were identified with house keeping, however, these comments are contained in the "Site Inspection" section of this report below.</p>	Y
<p>14. BUFFER ZONES AND VISUAL SCREENING</p> <p>14.1. No excavation shall take place within 20 metres of the licence boundary, except that this requirement shall not apply with respect to any common licence boundary with an adjacent mining licence.</p>	<p>Closest works to boundary is currently 50 metres.</p> <p>Inspected the site boundary.</p>	Y
<p>14.2. Existing vegetation outside of the area subject to surface disturbance shall be preserved and maintained provided due regard is taken of fire protection arrangements.</p>	<p>Screening trees are maintained.</p> <p>Areas on boundary inspected.</p>	Y
<p>14.3. The licensee shall supplement existing vegetation by additional planting to provide a screen for mining and allied operations as required by the rehabilitation plan and any additional plantings as required by an Inspector. The fire protection at the site shall be considered.</p>	<p>Screening trees have been planted where required.</p> <p>Inspected site boundary, revegetation and works areas.</p>	Y

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 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
14.4. Unless otherwise approved by an Inspector, the licensee shall take precautions to ensure that no species inconsistent with the surrounding vegetation are introduced to the area.	The site has a DSE approved planting guide which lists the species which can be planted. Viewed the "Code of Practice Re-vegetation Guide 2004".	Y
15. PROGRESSIVE REHABILITATION 15.1. Progressive reclamation will be conducted as per the rehabilitation plan. In addition, any further rehabilitation work will be carried out at the direction of an Inspector.	Rehabilitation plans are in the Work Plan. The actual rehabilitation versus targets varies from year to year, but is averaging close to the target values. Viewed Work plan and "Progress Against Workplan Target" graph.	Y
15.2. As and when directed by an Inspector of Mines, despite any compensation agreements between the licensee and the owner of any private land in the licence, the licensee shall undertake progressive reclamation of land on the area subject to surface disturbance.	Reportedly, there have not been any recent requirement to carry out additional rehabilitation by DPI.	NA
16. FINAL REHABILITATION 16.1. Final reclamation will be in accordance with the rehabilitation plan and any additional requirements as directed by an Inspector.	The final rehab plan is to partly flood the mine and revegetate surrounding areas. This is still the intention. Viewed the mine Workplan.	Y
16.2. Failure to complete works in accordance with the rehabilitation plan or in accordance with the directions of an inspector, shall	Does not appear to have occurred.	NA

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 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
constitute grounds upon which the rehabilitation bond may be forfeited either in whole or in part in accordance with Section 83 of the MRD Act.		
17. HERITAGE SITES 17.1. Any significant historic sites or relics that are to be removed shall be accurately mapped and documented prior to the commencement of any mining or allied operations. Such documentation shall be made available to the relevant section of the Department of Natural Resources and the Environment.	The mine maintains a map of cultural and heritage sites and provides it to DPI and Heritage Victoria. Note: DNRE does not need to be informed as required by the licence, due to the restructure of Government Departments. Viewed site map showing cultural and heritage sites.	Y
17.2. Tenure of this licence does not exempt the holder from the following provisions of the Archaeological and Aboriginal Relics Preservation Act 1972: Section 21(1) - "A person who wilfully or negligently defaces or damages or otherwise interferes with a relic or carries out an act likely to endanger a relic shall be guilty of an offence against this Act"; and Section 23(1) - "A person who discovers a relic shall forthwith report the discovery unless he has reasonable grounds to believe that the relic is recorded in the register". Reports in compliance with Section 23(1) should be submitted to	Reportedly, all relics found are investigated and reported as per the mine's work instructions. Viewed work Hazelwood "Cultural Heritage Instruction".	Y

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- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
<p>The Director Aboriginal Affairs Victoria Department of Human Services 2nd Floor, 115 Victoria Parade FITZROY VIC. 3065 (Telephone (03) 9412 7498)</p>		
<p>18. BUILDINGS 18.1. No buildings shall be erected before any relevant building permits have been obtained.</p>	<p>No new buildings have been constructed in recent times.</p>	<p>Y</p>
<p>18.2. All fixed plant and buildings shall be painted or surface treated in a colour to blend with the surroundings to the satisfaction of an Inspector in consultation with the local municipality and in the case of Crown land, Department of Natural Resources and the Environment.</p>	<p>Offices and plant are painted brown or green to blend in.</p>	<p>Y</p>
<p>19. ROYALTY 19.1. Each mining company must pay to the Minister for payment to the Consolidated Fund in each financial year an amount equal to the prescribed amount in respect of each gigajoule unit of coal produced from its brown coal workings in the State and used or sold by the company in the last preceding financial year.</p>	<p>Royalties are paid to the State Government.</p> <p>Viewed latest International Power Hazelwood Annual Report showing royalty payments.</p>	<p>Y</p>
<p>19.2. For the purposes of 19.1, a gigajoule unit of coal is a quantity of coal which, when mined, has a net wet specific energy content of 1 gigajoule.</p>	<p>NA</p>	<p>NA</p>

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
19.3. The net wet specific energy content of coal produced by a company from its brown coal workings and used or sold by the company in a financial year shall be calculated in such manner and in accordance with such method of sampling as is agreed to by the Minister and the company or as is, in default of the agreement, determined by the Governor in Council.	NA	NA
19.4. For the purposes of 19.1, the prescribed amount shall be the amount derived by multiplying \$0.0239 by <u>A and B</u> where A is the consumer price index number in respect of the relevant quarter; and B is the consumer price index in respect of the quarter ending on 30 June 1993.	NA	NA
19.5. The payment of the amount to the Minister under 19.1 shall be made in accordance with the Mineral Resources (Royalties) Regulations 1991.	NA	NA
19.6. In this section "consumer price index number" means the all groups consumer price index number for Melbourne published by the Commonwealth Statistician in respect of the quarter ending on	NA	NA

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
<p>30 June in each year or, if that statistic is no longer calculated, the nearest substitute for it;</p> <p>"relevant quarter" means the quarter ending on 30 June immediately preceding the financial year in relation to which the prescribed amount is being calculated.</p>		
<p>20. REHABILITATION BOND</p> <p>20.1. The licensee shall lodge with the DNRE a rehabilitation bond as described in Section 80(1) of the Act when required in accordance with these conditions. The bond must be lodged in the form of a bank guarantee issued by a bank licensed under the Banking Act 1959 (Cth).</p>	<p>A bank guarantee for \$15 million has been lodged.</p> <p>Mining licence could not be maintained without the bond.</p>	Y
<p>20.2. The licensee shall be required to lodge that bond upon the licensee ceasing to be a State Owned Corporation and upon being directed to do so by the Minister for Agriculture and Resources.</p>	NA	NA
<p>20.3. The level of this bond has initially been assessed at \$15 million.</p>	NA	NA
<p>21. APPLICATION OF REGULATIONS</p> <p>21.1. The Mineral Resources (Health and Safety for large Open Cut Mines) Regulations 1995 will apply to the licensee.</p>		NA
<p>21.2 Any subsequent Regulations issued under the act will also</p>	No known additional environmental Regulations have been	NA

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 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
apply.	enacted under the Act.	

Conclusion

Compliance with the mining licence is high. There are administrative issues relating to the Work Plan reflecting current exploration practices, which is not considered high risk.

Risk Assessment:

Scenario = Breach of the mining licence resulting in a significant environmental impact (medium term impact, community complaints)
 Consequence = Major: Off-site impact with medium term (several years) loss of beneficial use/s. Environmental impact is a clear regulatory breach. Will impact on the community.
 Likelihood = Very Unlikely: Event may occur but only in exceptional circumstances.
 Risk = Medium: The possibility of additional controls to be assessed and implemented where practicable.

Recommendation/s

The mining Work Plan should be amended to address cultural heritage stripping operations and the exploratory drilling operations and then submitted to DPI for approval.

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3.3 Groundwater Licence

A review was carried out of the site's Groundwater licence No. 2007412. A summary of findings is provided below.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
1. This licence is valid for a period of thirty years from 1 September 1995	NA	NA
2. The licensee is authorised to take and use groundwater to facilitate mining for coal and generation of electrical energy and purposes incidental thereto.	Groundwater is used in the cooling pond or in the fine services system.	Y
3. The licensee is authorised to extract groundwater from the aquifers at quantities and during the times specified in the First Schedule or on application by the licensee such other quantities and during such other times as from time to time approved by the Minister or his delegate.	Refer below.	-
4. The licensee may vary the maximum monthly rate of extraction from any particular aquifer or the maximum annual volume to be extracted from any particular aquifer provided that the total monthly rate of extraction and the total annual volume from all aquifers is not exceeded and shall report at monthly intervals such variations as they occur to the Minister or his delegate.	Extraction rates are well below the licensed maximums (approximately half). This due to better understanding of the underlying aquifers. Viewed monthly report to the ERC and internal management memo.	Y
5. The licensee may only take and use groundwater under this licence on the land with respect to which the licensee holds a mining licence for the Hazelwood Power mine.	Groundwater is only used in the cooling pond or as fire services water.	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
6. Annual fee at date of issue \$19,300.	NA	NA
7. The licensee shall pay annual charges for the forthcoming year due under the licence in quarterly instalments or on an annual basis as agreed between the licensee and the Minister or his delegate.	NA	NA
8. The licensee shall meter all groundwater extractions and shall keep an accurate record of the quantity of groundwater taken or used under this licence and allow the Minister or his delegate to inspect this record during normal business hours and to provide a copy of such record to the Minister or his delegate within seven days of a notice given by post to the licensee at the address contained in this licence.	Each bore has a flow meter installed. The data is supplied to the ERC which has government representatives. Viewed groundwater flows in monthly report to the ERC.	Y
9. The licensee shall provide to the Minister or his delegate annually details of the location of each bore from which groundwater is extracted under this licence.	The "Annual Depressurisation Annual Performance Report" includes bore locations and is provided to Southern Rural Water and DPI. Viewed the 2004/05 "Annual Depressurisation Annual Performance Report".	Y
10. By the issue of this licence the Minister or his delegate in no way accepts any liability for injury to any party arising as a consequence of any adverse effects that may be deemed to have been caused by the extraction of groundwater under the licence.	NA	NA

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 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
11. The licensee shall compensate any person whose existing authorised use of water is adversely and materially affected by the taking of water under this licence. The compensation may be either financial or may be constituted by the making available of, or granting access to, water. If the licensee is unable to or unwilling to make compensation by the making available of or granting access to water in the quantities previously enjoyed by the person so affected then the amount of financial compensation payable shall be that as determined by a Valuer nominated by the President of the Victorian Division of The Australian Institute of Valuers and Land Economists (Inc)	Such an event has not occurred.	NA
12. The licensee shall undertake a regional monitoring program of the nature scope and extent as that previously undertaken by the State Electricity Commission of Victoria as detailed in the approved work plan and the information is to be provided on request to the Minister or his delegate and as required under the work plan.	A regional report has been prepared jointly with other power stations, groundwater users and Government via the Regional Groundwater Monitoring Committee. Site does not have a copy of the report, however auditor is aware of the existence of the report.	Y
13. All information obtained from the regional monitoring program belongs to the generation companies, the State Electricity Commission of Victoria and the Minister jointly.	NA	NA
14. The licensee must maintain the existing data bases, and undertake additional work that may be required from time to time by the Minister or his delegate to maintain the effectiveness of the regional monitoring program.	All monitoring data is stored electronically on the company system. Reportedly, no additional work has been requested. Viewed examples of data.	Y

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Audit Criteria		Objective Evidence Reviewed	Compliance (Yes/No/ Partial)				
15.	If the licensee fails to provide the information required under condition 12 the Minister or his delegate may undertake any necessary work to obtain the information and recover the costs of such work from the licensee.	Reportedly, such an event has not yet occurred.	NA				
16.	The regional monitoring program and any remedial measures must be incorporated in the approved work plan and the rehabilitation plan to the satisfaction of the Minister or his delegate.	Reportedly, no additional requirements have been requested. Note: the monitoring is specified in the mining license not the mine Work Plan as specified in the Groundwater licence requirement. The auditor does not consider this discrepancy material.	Y				
17.	The licensee shall comply with the provisions in its mining licence, approved work plan and the rehabilitation plan dealing with the regional monitoring program and remedial action.	Reportedly, no additional requirements have been requested. Monitoring is carried out as per the mining license.	Y				
FIRST SCHEDULE		Refer above	-				
	M1 Aquifer			M2 Aquifer			
	Rate of Extract.			Annul Vol.	Rate of Extract.	Annul. Vol.	Total Vol.
Year	ML/Mth			ML	ML/Mth	ML	ML
1996	367			3,212	1,640	19,680	22,892
1997	367			3,212	1,640	19,680	22,892
1998	367	3,212	1,640	19,680	22,892		
1999	367	3,212	1,640	19,680	22,892		

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Audit Criteria						Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
2000	367	3,212	1,640	19,680	22,892		
2001	367	3,212	1,640	19,680	22,892		
2002	367	3,212	1,640	19,680	22,892		
2003	367	3,212	1,640	19,680	22,892		
2004	367	3,212	1,640	19,680	22,892		
2005	367	3,212	1,640	19,680	22,892		
2006	367	3,212	1,640	19,680	22,892		
2007	367	3,212	1,640	19,680	22,892		
2008	367	3,212	1,606	19,272	22,484		
2009	367	3,212	1,606	19,272	22,484		
2010	367	3,212	1,606	19,272	22,484		
2011	367	3,212	1,606	19,272	22,484		
2012	367	3,212	1,606	19,272	22,484		
2013	367	3,212	1,606	19,272	22,484		
2014	367	3,212	1,606	19,272	22,484		
2015	367	3,212	1,606	19,272	22,484		
2016	367	3,212	1,606	19,272	22,484		
2017	367	3,212	1,606	19,272	22,484		

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Audit Criteria						Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
2018	367	3,212	1,606	19,272	22,484		
2019	367	3,212	1,606	19,272	22,484		
2020	367	3,212	1,439	17,268	20,480		
2021	367	3,212	1,439	17,268	20,480		
2022	367	3,212	1,439	17,268	20,480		
2023	367	3,212	1,439	17,268	20,480		
2024	367	3,212	1,439	17,268	20,480		
2025	367	3,212	1,439	17,268	20,480		

Conclusion

Based on the available evidence, the site is in compliance with the requirements of its Groundwater Licence.

Risk Assessment

- Scenario = Breach of Groundwater Licence resulting in a significant environmental impact (medium term impact, community complaints)
- Consequence = Major : Off-site impact with medium term (several years) loss of beneficial use/s. Environmental impact is a clear regulatory breach. Will impact on the community.
- Likelihood = Very Unlikely: Event may occur but only in exceptional circumstances.
- Risk = Medium :The possibility of additional controls to be assessed and implemented where practicable.

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Recommendation

Nil

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3.4 SEPP (Air Quality Management) 2001 and SEPP (Ambient Air Quality) 1999

The SEPP (Air Quality Management) 2001 is one of the legislative tool used to manage emissions to air. It details air quality "design criteria" which are used for dispersion modelling purposes and that need to be maintained to ensure the beneficial uses made of the air environment are protected. The beneficial uses defined in Clause 9 of the Policy are:

- (a) life, health and well-being of humans;
- (b) life, health and well-being of other forms of life, including the protection of ecosystems and biodiversity;
- (c) local amenity and aesthetic enjoyment;
- (d) visibility;
- (e) the useful life and aesthetic appearance of buildings, structures, property and materials; and
- (f) climate systems that are consistent with human development, the life, health and well-being of humans, and the protection of ecosystems and biodiversity.

Hazelwood lies in the "Latrobe Valley Air Quality Control Region", as prescribed in Schedule F of the Policy.

The SEPP (Ambient Air Quality) 1999 sets air quality objectives and goals for the whole State of Victoria. The SEPP adopts the requirements of the National Environment Protection Council (Ambient Air Quality) Measure (NEPM). This NEPM sets standards, goals, monitoring and reporting protocols for six common pollutants: CO, NO₂, photochemical oxidants (as ozone), SO₂, lead and particles as PM₁₀. The SEPP also includes ambient air quality objectives for photochemical oxidant and visibility reducing particles, standards which are not included in the NEPM.

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Schedule A of the SEPP (Air Quality Management) defines a series of ambient air quality "design criteria" which are used for dispersion modelling purposes.</p> <p>The criteria of interest at Hazelwood are the "Class 1" indicators listed below. The "Design Criteria" (maximum concentration measured at ground level) for each is also shown.</p> <p>Carbon monoxide 1-hour average: 29 mg/m³ Nitrogen dioxide 1-hour average: 0.19 mg/m³ Sulphur dioxide 1-hour average: 0.45 mg/m³ Particles as PM10 1-hour average: 0.080 mg/m³ Lead Toxicity 1-hour average: 0.003 mg/m³</p> <p>Of these, NO_x, SO₂ and particulates are the pollutants of major concern, as emissions from the station are more likely to result in an exceedance of the above limits.</p>	<p>Ausplume and Auspuff modelling was carried out in 1998 of NO_x, SO₂ and PM10 particulates. The modelling found:</p> <ul style="list-style-type: none"> if every discharge point was emitting at the maximum licence limit simultaneously, the 1 hr average design level limits for NO_x and SO₂ would be exceeded at times; and modelling of actual emissions as measured at the station found the 1 hour average design criteria for NO_x and SO₂ would not be exceeded. <p>The modelling was carried out prior to the release of the SEPP (Air Quality Management). Therefore, the modelling carried out for PM10 was for 24 hr and annual average PM10 levels, as set in the SEPP (Ambient Air Quality) detailed immediately below. It is therefore not possible to confirm whether the predicted PM10 levels comply with the requirements of the SEPP (Air Quality Management).</p> <p>Viewed CAMM modelling reports 12/98 and 8/98.</p>	Y (based on those criteria for which data is available)
<p>SEPP (Ambient Air Quality) sets a number of Ambient Air Quality Objectives, as listed below:</p> <p>Carbon monoxide 8-hour average: 9.0 ppm</p> <p>Nitrogen dioxide 1-hour average: 0.12 ppm 1-year average: 0.03 ppm</p>	<p>The PM10 modelling discussed immediately above predicted that even at the maximum licensed emission rate, the ground level concentrations would be below the 24 hour and annual average objectives set in the SEPP (Ambient Air Quality).</p> <p>The Latrobe Valley Ambient Air Monitoring Network (LVAMN) results have shown that there are non-compliance issue with the ambient SO₂, PM10 and the minimum visual distance</p>	Y

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Photochemical 1-hour average: 0.10 ppm</p> <p>Oxidants (as ozone) 4-hour average: 0.08 ppm</p> <p>Sulphur dioxide 1-hour average: 0.2 ppm 1-day average: 0.08 ppm 1-year average 0.02 ppm</p> <p>Lead 1-year average: 0.05µg/m³</p> <p>Particles as PM10 1-day average: 50 µg/m³</p> <p>Visibility reducing 1-hour average: 20 km Particles (minimum visual distance)</p> <p>The objectives are used to compare ambient air monitoring data.</p>	<p>Objectives.</p> <p>EPA investigations have attributed the elevated SO₂ levels to plume strikes originating from the Loy Yang power station complex. The non-compliance with PM10 and LVD has been associated with fuel reduction burn-offs and bushfires. Fuel reduction burn-offs typically occur during days of low wind speed for safety reasons, however, this results in poor dispersion of the smoke, a significant reduction in visibility and increase in airborne particulate matter. There was also a single exceedance of the ozone objective in 2003 (0.09 ppm cf. to the 0.08 ppm objective - no single source was attributed to this exceedance).</p> <p>Therefore, the auditor concludes that even though the station emissions would contribute to pollutants in the Latrobe Valley air shed, they are not responsible for the observed non-compliances.</p> <p>Four dust deposit gauges are maintained around the mine to assess the impact of fugitive dust from mining operations. All the monthly results since 2003 have been below the target value of 4 g/m²/month except for one reading in March 2004 of 4.1g/m² on the Strezlecki Hwy. The results are supplied to the ERC. A review of the complaints log has found a single event over the past 3 years which generated 3 complaints on the 1/2/05, which was related to ambient dust from the mine. This occurred during a severe storm event. Observations made during the site and boundary inspection found the greatest level of dust impacting off-site amenity was due to</p>	

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Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
	<p>public traffic on unpaved roads <u>external</u> to the site. Dust generated on internal roads was, in most instances, not noticeable at the boundary. However, as the mine expands to the west, operations will be carried out close to the Strezlecki Hwy. Care will need to be taken to avoid excessive levels of dust blowing across the site boundary.</p> <p>Note: the target value of 4 g/m²/month has been adopted as a Guideline value by the NSW EPA, but is not legally recognised in Victoria. However, it has been used in Victorian to determine the nuisance value of inert dusts.</p> <p>Viewed summary of the LVAMN results, the dust gauge reports and the complaints log. Note: Auditor has been involved in the Loy Yang SO₂ plume strike issue.</p>	

Conclusion

The modelling evidence available predicts that emissions from the station will comply with the ambient air quality design criteria and air quality objectives set in the two air quality Policies. The modelling results are supported by the ambient air monitoring carried out by the Latrobe Valley Air Monitoring Network.

The results of the deposit gauges also indicates the current ambient dust level from the site is acceptable, apart from the one storm event which resulted in a slight exceedance. Based on monitoring and observations during the audit, the most noticeable dust impact in the immediate area is due to off-site traffic on unpaved roads.

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Risk Assessment:

Scenario	=	Exceedance of SEPP(Air Quality Management) or SEPP (Ambient Air Quality) Criteria and Objectives due to emissions from the Hazelwood site
Consequence	=	Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
Likelihood	=	Unlikely: Event is conceivable but unlikely to occur
Risk	=	Medium risk: the possibility of additional controls to be assessed and implemented where practicable

Recommendation

The off-site impact of dust due to stripping operations close to the Strezlecki Hwy needs to be considered when determining the timing of operations and the allocation of resources to suppress dust. This should include consideration of weather conditions, the time the area will remain cleared and the proposed relocation of the Highway.

Ausplume modelling should be carried out on actual emissions to determine compliance with the 1 hr PM10 criteria set in the SEPP (Air Quality Management).

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Clause 33 of the SEPP (Air) requires "<i>Generators of emissions of greenhouse gases must manage their emissions...</i>". The same Clause also refers to "<i>...protocols for environmental management relating to greenhouse gas emissions developed by the Authority....</i>" and that "<i>The Authority will apply these protocols to generators of emissions subject to works approvals and licences...</i>"</p> <p>EPA publication 824, Greenhouse Gas Emissions and Energy Efficiency in Industry (Protocol for Environmental Management) states that: "<i>All current EPA licence holders will need to demonstrate compliance with this protocol...</i>" Specifically, existing licence holders must:</p>	<p>An energy audit was carried out, in Sept. 1999. This audit was accepted by EPA as a suitable audit. An energy reduction action plan was submitted to EPA in December 2003 and accepted. The first review and progress report occurred in the 2004 Environmental Performance Report to EPA.</p> <p>Viewed energy audit and reduction action plan, Environmental Performance Report 2004 and correspondences from EPA.</p>	<p>Y</p>

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
<p><i>" Step 1: Conduct an energy audit and estimate energy consumption"</i></p> <p><i>" Step 2: Estimate direct greenhouse gas emissions"</i></p> <p><i>" Step 3: Identify opportunities to reduce greenhouse gas emissions"</i></p> <p><i>" Step 4: Document steps 1 to 3"</i></p> <p><i>" Step 5: Implementation of action plan"</i></p> <p><i>" Step 6: Ongoing reporting to EPA"</i></p> <p><i>" Step 7: Regular review"</i></p>		

Conclusion

The site is complying with EPA's greenhouse reduction requirements.

Risk Assessment

Scenario = Greenhouse commitment non-compliance
 Consequence = Insignificant: No detectable impact on receiving environment.
 Likelihood = Possible: The event might occur at some time
 Risk = Low risk; no additional controls required

Recommendation

Nil

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>As the Station pre-dates the original SEPP (The Air Environment) 1981, the in-stack emissions set in Schedule D of the current SEPP (Air Quality Management), "Emission Limits for Stationary Sources in Victoria", are applicable. Schedule D sets the maximum permitted emission limits. Note: the current EPA licence limits for particulates and NOx are more stringent than the Policy limits. Other limits set in Schedule D relevant to the site consist of:</p> <ol style="list-style-type: none"> 1. Visible emissions - Ringelmann 1 (BS 2742C, 1957); or of such opacity as to obscure an observer's view to the same degree as emissions corresponding with Ringelmann 1 above. Ringelmann 2 acceptable for periods aggregating not more than 3 minutes in any 60 minute period. 6. Sulphuric acid mist and sulphur trioxide: 0.2 g/m³ as SO₃ 7. Hydrogen sulphide: 7.5 mg/m³ 10. Lead and its compounds: 10 mg/m³ expressed as lead 11. Fluorine compounds: 0.05 g/m³ expressed as HF 12. Chlorine and chlorine compounds: 0.2 g/m³ expressed as chlorine 13. Total of antimony, arsenic, cadmium and mercury: 10 mg/m³ 	<p>Ringelmann values have not been determined and therefore cannot be assessed.</p> <p>Latest stack test in 10/05 and 3/05 were 0.05 and 0.04g/m³ SO₃.</p> <p>Not determined.</p> <p>Max. of 0.014mg/m³</p> <p>Latest stack test in 10/05 and 3/05 were <0.0001 and 0.0002 g/m³ HF</p> <p>Latest stack test in 10/05 and 3/05 were 0.025 and 0.05 g/m³ Cl₂ respectively.</p>	<p>Y</p> <p>(based on those criteria for which data is available)</p>

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>expressed as each metal</p> <p>14. Antimony and its compounds: 10 mg/m³ expressed as antimony</p> <p>15. Arsenic and its compounds: 10 mg/m³ expressed as arsenic</p> <p>16. Cadmium 3 mg/m³ expressed as cadmium</p> <p>17. Nickel and its compounds except nickel carbonyl: 20 mg/m³ expressed as nickel</p> <p>18. Nickel carbonyl: 0.5 mg/m³ expressed as nickel</p>	<p>Max. of 0.0036 mg/m³ (R&D Report)</p> <p><0.0008 mg/m³ (R&D Report)</p> <p><0.0008 mg/m³ (R&D Report)</p> <p>0.0004 mg/m³ (R&D Report)</p> <p>0.0065 mg/m³ (R&D Report)</p> <p>Not determined.</p> <p>The auditor does not consider it necessary to test for the parameters which have not been determined ie. Ringelmann, Hydrogen Sulphide and Nickel Carbonyl as:</p> <ul style="list-style-type: none"> - based on the auditor's experience, the Ringelmann limits will be easily complied with given the new particulate licence limit of 0.15 g/m³; - the coal used is low in sulphur and the boiler operates at excess air levels, which will significantly reduce the potential for production of hydrogen sulphide; and - the "...primary sources of nickel carbonyl are the industries that manufacture it or use it in production, such as nickel mining and refining, the chemical industry, glass and metal plating companies." - referenced from the NPI website. 	

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
	Viewed stack emission results and the R&D Report on trace emissions from brown coal power stations.	

Conclusion

Based on the available data, the station is in compliance with the applicable requirements set in Schedule D of the SEPP (Air Quality Management).

Risk Assessment

- Scenario = Exceedance of a maximum emission limit set in Schedule D of the Policy
- Consequence = Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
- Likelihood = Unlikely: Event is conceivable but unlikely to occur
- Risk = Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Recommendation

Nil

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

3.5 Industrial Waste Management

3.5.1 IWMP (Protection of the Ozone Layer) 2001

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Clause 14 of the Policy requires:</p> <p><i>"Any person who handles an ozone-depleting substance or equipment or products that use an ozone-depleting substance must, so as to achieve the best environmental outcome -</i></p> <p><i>(a) replace the ozone-depleting substance with an alternative substance or technology, where practicable; and</i></p> <p><i>(b) where there are no practicable alternatives, avoid or minimise emissions of the ozone depleting substance to the atmosphere."</i></p>	<p>The BCF fire extinguishers and the Halon deluge system in computer room were disposed of by the former SECV.</p> <p>Freon has been replaced with Helium for leak testing.</p> <p>There is only one air conditioner and 8-10 older water coolers left on-site that still contain ozone depleting substances. This equipment is scheduled for removal by the end of 2006. The site contracts the company Haden to maintain the equipment. This company is registered with the Ozone Protection Board/Artec for handling these gases.</p> <p>Viewed correspondence from asset contract manager responsible for on-site air conditioners. Auditor was involved in the SECV's phase out and disposal of CFC and Halon extinguishers. Haden's registration certificate was viewed by the auditor during a recent audit at another site.</p>	<p>Y</p>

Conclusion

The site is appropriately managing and phasing out the use of ozone depleting substances.

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Risk Assessment

Scenario	=	The uncontrolled release of ozone depleting substances.
Consequence	=	Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
Likelihood	=	Unlikely: Event is conceivable but unlikely to occur
Risk	=	Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Recommendations

Nil

3.5.2 IWMP (Prescribed Industrial Wastes) 2000

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Clause 9 of the Policy states that: <i>"Prescribed industrial waste generators must ensure their waste is managed:</i> <i>(a) in accordance with the order of preference indicated in the policy principles and intent; and</i> <i>(b) in a manner that achieves the best environmental outcome."</i></p> <p>The order or preference detained in Schedule 2 of the Policy can be summarised as:</p> <ol style="list-style-type: none"> 1. Avoid 2. Reuse 3. Recycle 	<p>A bulk grease lubrication system has been developed to service plant in the mine, reducing the number of grease drums requiring disposal (over 100 drums per year).</p> <p>Equipment is reused wherever possible, eg. Conveyor components in the mine.</p> <p>Scrap metal is recycled (4,659t in 2004)</p> <p>Oil is recycled (107,400l in 2004).</p> <p>Empty oil drums sent for recycling (804 in 2004).</p>	<p>Y</p>

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>4. Energy recovery</p> <p>5. Store pending development of reuse, recycle or energy recovery options</p> <p>6. Treatment</p>	<p>Some ash is sold as a soil conditioner (2,024t in 2004).</p> <p>Coal fines are sold as soil conditioner (9,000 t in 2004).</p> <p>Kaolin days were found in the mine for use in the ceramics industry (2,806 t in 2004).</p> <p>Paper is recycled (128 bales in 2004).</p> <p>Non functioning computer equipment is disposed of by Chemsel for gold and metal recovery.</p> <p>Fluorescent lamps are disposed of by Chemsel for mercury recovery.</p> <p>The site will be changing to the 35% recycled Reflex paper once the current contract finishes.</p> <p>The on-site inspection noted:</p> <ul style="list-style-type: none"> - waste recycling bins (scrap metal, rubber, fluorescent tubes, paper) - the installation of waste oil recovery drums; - empty drums storage areas; - lay-down yards for redundant equipment - mine equipment bulk lubrication tanks. <p>The site also carries out internal on-site waste audits on an annual basis. The audits target various operational areas.</p>	

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
	Viewed 2004 Environmental Performance Report and Internal Waste Audit Report (IT area). Inspected mine area and inspected bulk greasing equipment.	

Conclusion

The site is actively pursuing methods of reducing, reusing and recycling waste materials where practical.

Risk Assessment

Scenario = Disposal of wastes which could be avoided, reduced, reused or recycled.
 Consequence = Minor: On-site impact immediately contained and can be remediated in short term with little effort or cost.
 Likelihood = Possible: The event might occur at some time
 Risk = Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Recommendations

Nil

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

3.5.3 Environment Protection (Prescribed Waste) Regulations 1998

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Regulation 12 requires: <i>"The annual return must be prepared for the period of 12 months ending on 30 June in each year or....the date specified for the preparation of an annual return in the works approval or licence."</i></p> <p>However, Regulation 12 also states that: <i>"...this regulation does not apply to a prescribed industrial waste producer who arranges for the removal from the waste producer's premises, and the transport, of 5 or less consignments of prescribed industrial waste in the return period."</i></p>	<p>An Annual Waste Return was lodged with EPA in 4/2/05 detailing the necessary information (107 Waste Transport Certificates in 2004).</p> <p>Viewed the Annual Return.</p>	Y
<p>Regulation 13 of the Prescribed Waste Regulations states that: <i>"A prescribed industrial waste producer must ensure that for each consignment of prescribed industrial waste transported from the premises of that waste producer the consignment is accompanied by a transport certificate setting out the information in Part A of Schedule 2."</i> and <i>"A prescribed industrial waste producer who receives a copy of the information in Part A and Part B of Schedule 2 from the waste transporter under sub-regulation (3) must, within 7 days after receipt of the information, send the information to the Authority."</i></p>	<p>Waste Transport Certificates are completed for each load of Prescribed Industrial Waite. The site uses electronic certificates, however, paper copies are maintained. All Part C sections have been returned for Certificates to date.</p> <p>Use of the electronic certificate system also ensures the waste transporter and receiver are licensed to manage the particular waste type.</p> <p>Viewed the hardcopies of certificates and electronic register on EPA website.</p>	Y
<p>Regulation 14 requires these <i>"Records to be retained"</i>.</p>	<p>As above.</p>	Y

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Conclusion

The site completes EPA waste transport certificates as required and maintains copies of all certificates in both hard copy and electronic copy via the EPA website. The Annual Returns to EPA are occurring as required.

Risk Assessment

Scenario	=	Waste is disposed of to an unlicensed facility.
Consequence	=	Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
Likelihood	=	Very Unlikely: Event may occur but only in exceptional circumstances
Risk	=	Low risk; no additional controls required

Recommendations

Nil

3.5.4 IWMP (National Pollution Inventory) 1998 / National Pollution Inventory NEPM

The IWMP (National Pollution Inventory) 1998 was issued by the EPA to enact the requirements of the National Pollution Inventory NEPM.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Hazelwood is required to report on the emission of a number of pollutants (eg. carbon monoxide, nitrogen dioxide, sulphur dioxide, particulate mater, total volatile organic compounds) as it:</p> <ul style="list-style-type: none"> • uses "25 tonnes or more" of Volatile Organic Substances (clause 10); • burns "400 tonnes or more of fuel...in the period" (clause 11); and • burns "2,000 tonnes or more of fuel...in the period" (clause 12). 	<p>The site submits NPI reports to EPA on the prescribed form.</p> <p>Viewed the 1/7/04-30/6/05 NPI report and covering letter to EPA.</p>	<p>Y</p>

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Conclusion

The site is compliance with its NPI requirements.

Risk Assessment

Scenario	=	Site does not report it's emissions are required by the IWMP (National Pollution Inventory)
Consequence	=	Insignificant: No detectable impact on receiving environment.
Likelihood	=	Very unlikely: Event may occur but only in exceptional circumstances
Risk	=	Low risk; no additional controls required

Recommendations

Nil

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

3.5.5 PCB Chemical Control Order

An Order was issued by EPA in 1997 under section 30D of the Environment Protection Act 1970 which established PCBs as "notifiable chemicals". A variation to the Order was issued in February 2000 which set a number of requirements for any person that manages PCBs.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Condition 3 of the Order included:</p> <ul style="list-style-type: none"> • the need to develop and have approved by the EPA a PCB Environment Improvement Plan (PCB EIP); • the requirement to incorporate requirements of the Polychlorinated Biphenyls Management Plan (ANZECC) 1996 into the PCB EIPs (NOTE: The Plan was updated and reissued in 2003); • the need to notify the EPA if there is more than 10 kg of "scheduled" PCB material on-site; • the need to follow a process for tracking and recording the transport and disposal of PCB wastes. 	<p>The site has an EPA approved PCB EIP. The EIP contains all the necessary requirements, such as preferred disposal method, reporting requirements, maintaining a PCB register and storage requirements.</p> <p>Hazelwood maintains waste transport certificates of PCBs removed from site. Once the PCBs have been destroyed, certificates of destruction should be forwarded to Hazelwood. However, this has not been occurring of recent times, therefore, the requirement to track waste to its eventual disposal is not being fulfilled.</p> <p>NOTE: Following the on-site audit, Hazelwood contacted Chemsal and obtained a certificate of destruction for the PCBs processed over the missing period (2004/05).</p> <p>Viewed PCB EIP and waste transport certificates. Viewed Chemsal Certificate of Destruction.</p>	<p>P</p>

Conclusion

The site has an EPA approved PCB EIP, as required by the Chemical Control Order, which includes all the necessary requirements to manage PCBs. The site is also contracting a suitable and EPA licensed waste disposal firm and Waste Transport Certificates are maintained. However, confirmation of destruction has not been verified recently.

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Risk Assessment

Scenario	=	PCBs are not destroyed as required.
Consequence	=	Major: Off-site impact with medium term (several years) loss of beneficial use/s. Environmental impact is a clear regulatory breach. Will impact on the community.
Likelihood	=	Unlikely: Event is conceivable but unlikely to occur
Risk	=	High risk; management attention needed and should be resolved as a matter of priority

Recommendations

Hazelwood should ensure Chemsal provides certificates of destruction for waste PCBs in the future.

3.5.6 IWMP (Movement of Controlled Waste Between States and Territories) 2001 / Waste NEPM

This Policy describes the method to transport wastes into other jurisdictions. The Policy also enacts the requirements of the "Movement of Controlled Waste Between States and Territories" NEPM.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Clause 11(1) of the Policy states that:</p> <p><i>"...the movement of controlled waste from the State of Victoria to or through another participating State or Territory is subject to a licence having sufficient control over the carriage of that waste to enable agreement to mutual recognition between participating States or Territories."</i></p>	<p>The only wastes requiring interstate transport are PCB wastes. These wastes are transported to Chemsal in Laverton North for interim storage. Chemsal then organises the interstate transport permits via licensed transporters. Chemsal is the nominated waste disposal contractor in Hazelwood's EIP which has been approved by EPA.</p> <p>Viewed PCB EIP and EPA Waste Transport Certificates to Chemsal's site.</p>	Y
<p>Clause 11(8)(a) of the Policy states that:</p> <p><i>"The producer must provide relevant information as set out in Part 1 of Schedule B;"</i></p> <p>of the waste Tracking Certificate.</p>	<p>Information is provided by Chemsal as the EPA approved disposer, as above.</p>	Y

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Conclusion

Wastes requiring interstate transport are being processed as per EPA requirements.

Risk Assessment

Scenario	=	PCBs are not destroyed as required.
Consequence	=	Major: Off-site impact with medium term (several years) loss of beneficial use/s. Environmental impact is a clear regulatory breach. Will impact on the community.
Likelihood	=	Unlikely: Event may occur but only in exceptional circumstances
Risk	=	Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Recommendations

As per previous recommendation.

3.6 Contamination of Land and Groundwater

Management of land and its protection is defined in the State Environment Protection Policy (Prevention and Management of Contamination of Land) 2002. The Policy defines a number of beneficial uses based on land type that need to be protected and maintained. The Hazelwood site is located on industrial land and the relevant beneficial uses are:

- (a) highly modified ecosystems;
- (b) human health; and
- (c) buildings and structures.

The management and protection of groundwater is controlled by the State Environment Protection Policy (Groundwaters of Victoria) 1997. The Policy defines a number of beneficial uses, based on the salinity of the groundwater. There are a number of aquifers underlying the Latrobe Valley, covering a large range of salinities and therefore beneficial uses. These uses range from potable water to aquifers which are only suitable for stock watering.

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

The major aquifers underlying the Hazelwood site is the Haunted Hills Formation. Total Dissolved Solids (TDS) levels have been measured from less than 1000 mg/l to over 7000 mg/l from different bores located on-site and in the region immediately surrounding the site. The beneficial uses set in the Policy are determined by the ground water quality. The aquifer immediately below the site is classified as belonging to Segments B and C of the Policy (ie between 1000 and 13000 mg/l TDS). The potential beneficial uses are:

- a) Maintenance at ecosystems;
- b) Potable mineral water;
- c) Stock watering and irrigation;
- d) Industrial water use;
- e) Primary contact recreation; and
- f) Buildings and structures.

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Clause 17(2) of the State Environment Protection Policy (Prevention and Management of Contamination of Land) 2002 states that:</p> <p><i>"To prevent contamination of land, any occupier or other person within the policy area involved in the transport, storage or handling of any chemical substance or waste must:</i></p> <p><i>(a) apply best practice;</i></p> <p><i>(b) comply with any Industrial waste management policy or relevant dangerous goods legislation; and</i></p> <p><i>(c) have regard to any guidance document approved by the Authority."</i></p>	<p>Refer to site inspection for findings, conclusions and recommendations concerning actual and potential ground contamination.</p>	-
<p>Clause 12 of the State Environment Protection Policy (Groundwaters of Victoria) 1997 states that:</p> <p><i>"All practical measures must be taken to prevent pollution of groundwater."</i></p>	<p>The main potential sources of impact on the underlying aquifer are the ash ponds and the overburden dump, which contains waste coal, leached ash and various rubbish dumps which have been used on-site since the station commenced operations (on-site dumping of hard rubbish no longer occurs).</p> <p>Regular surveys of the underlying natural aquifer have been carried out, which includes surveys of groundwater flow, TDS and contaminants such as heavy metals, PAHs , PCB's TPH and ionic species.</p> <p>Of the parameters tested, the surveys has identified a slight increase in TDS and a change in groundwater flow direction which is localized to the site, due to the affect of the overburden dumps. These impacts have not changed the water quality segment or beneficial uses which can be made</p>	Y

- * Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
	<p>of the groundwater.</p> <p>The past practices of burying wastes in the overburden dump is not longer occurring (ie. no on-site hard rubbish dump), further decreasing the potential for groundwater contamination.</p> <p>Viewed Environmental & Earth Science Groundwater Quality reports (4/05 and 11/05)</p>	

Conclusion

Surveys to date have shown the beneficial use of the underlying aquifer has not changed, with the main impact being a slight increase in the background level of TDS. The site has a comprehensive and regular groundwater monitoring program and has decreased the potential for groundwater contamination by discontinuing the on-site dumping of rubbish. As the types of operation which can result in groundwater impact are not expected to change and the site has been operational for over 30 years, it would be very unlikely that the beneficial uses will be adversely impacted by future operations.

Risk Assessment

Scenario = Future site operations result in a loss of beneficial use of the aquifer.

Consequence = Major: Off-site impact with medium term (several years) loss of beneficial use/s. Environmental impact is a clear regulatory breach. Will impact on the community.

Likelihood = Very Unlikely: Event may occur but only in exceptional circumstances

Risk = Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Recommendations

Nil

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

3.7 Surface Waters

The management of surface waters and discharges into these waters is controlled by the State Environment Protection Policy (Waters of Victoria) 2003. The Policy sets a number of beneficial uses that must be protected, depending on the location of the surface water. The relevant segment for the Hazelwood site is Segment E of Schedule F5 of the Policy (Waters of the Latrobe and Thomson River Basins and Merriman Creek Catchment). The beneficial uses set in F5 for this Segment include:

- (a) Modified Ecosystems;
- (b) Highly modified ecosystems with some habitat values;
- (c) Recreation
- (d) Agriculture water supply;
- (e) Fishing and aquaculture
- (f) Industrial water use; and
- (g) Aquifer recharge.

The Policy also sets a series of water quality objectives, based on the location of the surface water. All licenses need to reflect these objectives and discharges to surface waters should not result in an exceedance of the objectives, or loss of a beneficial use that can be made of that water.

The Hazelwood site discharges to the Morwell River from the site cooling pond (discharge point H110) and from the mine area (discharge point M90). The relevant water quality objectives would be the those specified in the "Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)" (Table 3.4.1, 95% criteria for slightly to moderately modified aquatic ecosystems as defined in Schedule A, A1 (1) of the Policy).

A number of additional water quality indicators and objectives have been set for surface waters surrounding Bennetts Creek in Schedule F5, Segment E of the Policy (Waters of the Latrobe and Thomson River Basins and Merriman Creek Catchment).

Stormwater drainage from the site is contained on the site as far as possible. Only excess water as a result of significant rain events is pumped off-site into surface water (ie the Morwell River). Therefore, all on-site drainage is controlled and any spillage into drains can be recovered, treated or contained. However, for the purpose of this audit, areas which pose a risk of a release into drains have been identified for the purpose of good practice.

- Y — Yes: Confirmed total compliance, or appeared to be in compliance based on the evidence available.
- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/Partial)
<p>Clauses 37 and 38 of the State Environment Protection Policy (Waters of Victoria) 2003 states that:</p> <p><i>"chemicals and hazardous substances must not be stored in or adjacent to surface waters, drainage lines or floodplains, unless the storage facilities prevent them from coming into contact with surface waters;"</i></p> <p>and</p> <p><i>"businesses must undertake measures to prevent the spillage of chemicals, oil, grease, oily mixtures or other hazardous substances into surface waters."</i></p>	<p>Refer to site inspection for findings related to actual and potential releases into water.</p>	<p>-</p>
<p>Clause 11 of the Policy states:</p> <p><i>"The environmental quality objectives describe the level of environmental quality needed, in most surface waters, to avoid risks to beneficial uses and to protect them."</i></p> <p>The Policy lists objectives in Schedule F5 (refer below) and the ANZECC Guidelines (refer to Appendix 3 for Table 3.4.1, "Australian and New Zealand Guidelines for Fresh and Marine Water Quality (2000)" - 95% criteria for freshwater).</p> <p>The in-stream objectives specified in Schedule F5 are:</p> <p>pH 6.0-8.5 & <1.0 increase from</p>	<p>The site carries out monitoring as per its EPA license requirements (ie. discharge rate, TDS, colour, Suspended Solids, Turbidity and Temperature).</p> <p>The site also monitors for a number of other parameters on a quarterly basis from the cooling pond discharge point and annually from the mine discharge point. This testing is above that required by its license and includes flow rate, temperature, suspended solids, Ph TDS, colour, Turbidity, Electrical Conductivity, Reactive silica, Sulphate, chloride, sodium, potassium, calcium, magnesium, dissolved oxygen, aluminium, Iron, Nitrate, nitrite, O-phosphate, T-Phosphate, carbonate, hydroxides ammonia, mercury, selenium, manganese, Zinc, copper, cadmium, nickel,</p>	<p>Y</p>

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 N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
 P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Audit Criteria		Objective Evidence Reviewed	Compliance (Yes/No/Partial)
DO (mg/l)	background >5.0 & >55% saturation	<p>lead, chromium, chromium IV, molybdenum, Kjeldahl nitrogen, Fluoride, Arsenic, PCB, Barium, Cobalt, Beryllium, Tin and Boron, Ecoli, Enterococci and Aeromonas. River water samples are also taken up-stream and downstream of the cooling pond discharge point.</p> <p><u>Cooling Pond Discharge (H110)</u></p> <p>Monitoring has found a number of issues with the cooling pond discharge:</p> <p>A number of parameters are above the license limit:</p> <ul style="list-style-type: none"> - TDS (medium of 1500 cf. 900 and max. of 1600 cf. 950) - pH (max. of 9 cf. 8.5) <p>The elevated levels were due to the recent drought. A 30A exemption was received from EPA for these discharges - refer to EPA licence compliance Section above. Therefore the elevated levels were not a technical licence exceedance.</p> <p>A number of parameters measured in the Morwell River were above the ANZECC limits. However, in all cases the exceedances occurred both upstream downstream of the discharge point:</p> <ul style="list-style-type: none"> - Aluminium (2.1 mg/l cf. 0.055 mg/l) - Magnesium (12 mg/l cf. 1.9 mg/l) <p>Not all SEPP limits are met:</p> <ul style="list-style-type: none"> - Ecoli objective is sometimes exceeded within the Morwell River (340 org/100 ml both upstream and downstream cf. 200 org/100 ml) 	
Toxicants	<T		
Salinity (mg/l)	<500 (90 th percentile), <700 (maximum) & <10% increase from background		
SS (mg/l)	<50 (50 th percentile) & <90 (90 th percentile)		
Turbidity (NTU)	<25 (50 th percentile) & <50 (90 th percentile)		
Colour (PtCo units)	<60 (50 th percentile), <100 (90 th percentile) & <20% increase from background		
Total P (mg/l)	<0.06 (50 th percentile) & <0.1 (90 th percentile)		
Total N (mg/l)	<0.9 (50 th percentile) & <1.6 (90 th percentile)		
E. Coli (org/100ml)	<200		
Temperature (°C)	<1.5 above background (90 th percentile), <2.0 (maximum) & <1.0 rate of change in 30 minutes		

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N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.

P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

Conclusion

As noted in the EPA licence compliance section, the cooling pond discharges have resulted in elevated pH and TDS levels due to the drought however, exemptions for these discharges have been obtained from EPA and is therefore in legal compliance. A number of Schedule F5 and ANZECC ambient Objectives and limits are exceeded, but this is due to elevated levels already present in the Morwell River rather than any contribution made by the site discharges, therefore, these parameters are also in compliance with Policy requirements.

Risk Assessment

Scenario	=	Exceedance of a legislative limit resulting in significant detriment to the receiving water ecosystem and loss of beneficial use.
Consequence	=	Major: Off-site impact with medium term (several years) loss of beneficial use/s. Environmental impact is a clear regulatory breach. Will impact on the community.
Likelihood	=	Very Unlikely: Event may occur but only in exceptional circumstances
Risk	=	Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Recommendations

Nil

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- N — No: Confirmed a failure in compliance, or appeared to be non-complying based on the evidence available.
- P — Confirmed that a portion of the requirement was being complied with, or appeared to be the case based on the evidence available.

3.8 Noise

Hazelwood is located outside of Metropolitan Melbourne, therefore, the provisions of the State Environment Protection Policy N-1 do not legally apply. The EPA has developed "Interim Guidelines for the Control of Noise From Industry in Country Victoria, Publication No. N3/98: 1989".

Audit Criteria	Objective Evidence Reviewed	Compliance (Yes/No/ Partial)
<p>The Interim Guidelines state that in rural areas with background levels similar to Metropolitan Melbourne, the N-1 Policy limits should be applied. Given the heavily industrialised nature of the area surrounding Hazelwood the background noise levels may make the N-1 noise policy applicable.</p>	<p>There have been two noise surveys carried out around the site. One was assessing noise from mining operations (refer to Mining Licence compliance section above) and one was to assess the affect of a cooling tower. The site has also carried out spot noise readings around the site perimeter and made a subjective assessment of noise levels.</p> <p>The surveys found:</p> <ul style="list-style-type: none"> - the noise levels around the site varied from mid 40 to low 50 dB(A); - the main noise source was due to local traffic (over 70 dB(A)); - as a formal assessment to determine the applicable noise limits (as per the N-1 Policy) has not been carried out, it is not possible to determine compliance with the Policy. <p>There have been five noise complaints in the 2005 year to date, two in 2004 and one in 2003. In each case the noise appears to have been due to a short term event, such as a steam valve lifting or steam release, ie they were not due to more typical operations.</p> <p>Viewed complaints log and noise survey reports.</p>	<p>Unknown (formal noise assessment to determine noise limits based on background, zoning, time of day, tonality, impulse etc. has not been carried out)</p>

Conclusion

It is not possible to determine compliance with the N-1 Policy as a formal noise assessment has not been carried out. However, noise levels due to normal operations have not resulted in noise complaints. Complaints have occurred in response to short term events, such as activation of safety valves or steam

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releases. NOTE: Given the size of the site and the various surroundings in different locations, there may be more than one set of applicable noise levels which can be applied around the site.

Risk Assessment

Scenario	=	Noise from Hazelwood operations results in a community noise complaint
Consequence	=	Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
Likelihood	=	Possible: The event might occur at some time
Risk	=	High risk; management attention needed and should be resolved as a matter of priority

Recommendations

The site should carry out a noise assessment according to the N-1 Policy to determine the permissible noise level/s around the site.

The site should investigate the installation of silencers on safety valves, steam release points and other "non-typical" noise sources which appear to occur periodically.

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3.9 Interview with EPA and DPI

Discussions were also held with the EPA officer based at the regional EPA office in Traralgon, Ms Bianca Craddock, who was responsible for managing environmental issues at the time of the audit. NOTE: The regular EPA client manager, Mr David Guy, was on leave at the time. There were no issues of concern which were raised by EPA during these discussions. Ms Craddock made further enquiries of other office staff, however, no issues were relayed back to the auditor.

Discussions were also held with the Environmental Officer at DPI Traralgon (Martin Bonwick) and the Manager Gippsland Region (Greg Sleziak). Reportedly, DPI conducted an audit of the site in approximately 2003-4. The audit findings were provided to Hazelwood for actioning, however, there has never been any follow-up to assess close out of the audit recommendations. Review of the DPI audit report is outside the scope of this audit, however, the auditor would consider close out of the DPI audit findings would be necessary in order to ensure compliance with the legal requirements DPI's jurisdiction. Neither Mr Bonwick or Sleziak were aware of any on-going issues of concern at the site.

Recommendations

The DPI audit report conducted in approximately 2003/4 should be obtained to ensure the audit recommendations have been addressed. If not, the outstanding audit recommendations should be scheduled for actioning.

4.0 Site Inspection

4.1 Mine

An inspection was carried out of the mine, overburden dump and ancillary support areas, including refuelling areas, workshops and lay down yards.

4.1.1 Findings From Mine works Area Inspection

An inspection of the mine works area made identified few issues. The following photographs summarise a number of positive management practices.



**Figure 3 — Use of water truck to reduce dust.
Note the lack of dust from the heavy vehicle travelling on the watered roadway**



**Figure 4 — View from the top of the overburden dump.
Note the successful rehabilitation in the foreground. The area to the right of centre in the background is an empty ash pond awaiting use. The bare area to the left of centre in the background is a section of the dump awaiting rehabilitation.**



Figure 5 — Rehabilitated overburden dump viewed from the Strezlecki Highway.
The photograph shows a portion of the tree and shrubs that have been planted recently.

One issue that was identified during the inspection was a leaking waste water line. The line pumps saline overburden run-off water from a catchment pond at the toe of the dump into the ash pond. The line is badly corroded and several substantial leaks were noted. It also appears the outlet of the line is buried in ash. Blocking of the outlet may account for the leaks.



Figure 6 — Leaking waste water pipeline carrying saline overburden dump run-off water into the ash pond

Recommendation

Leaks in the waste water pipeline carrying saline overburden dump run-off water into the ash pond should be repaired or sections replaced. The outlet of the pipeline should also be cleared of any blockages and relocated so that it does not become buried in ash.

4.1.2 Findings from Refuelling and Oil Storage Area Inspection

The fuel tanks are banded and are fitted with locked valves or manually actuated pumps. The oil storage area is banded and covered and a spill kit is available.

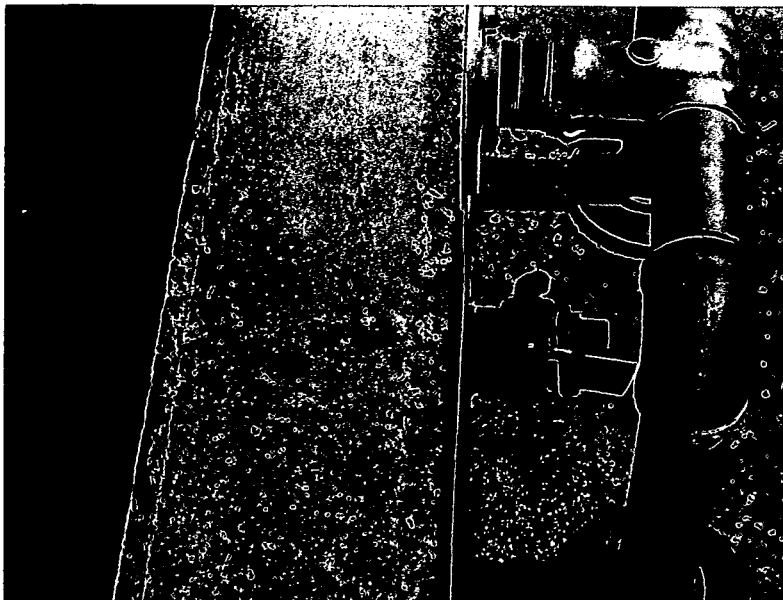


Figure 7 — Locked drain valve on above ground fuel tank

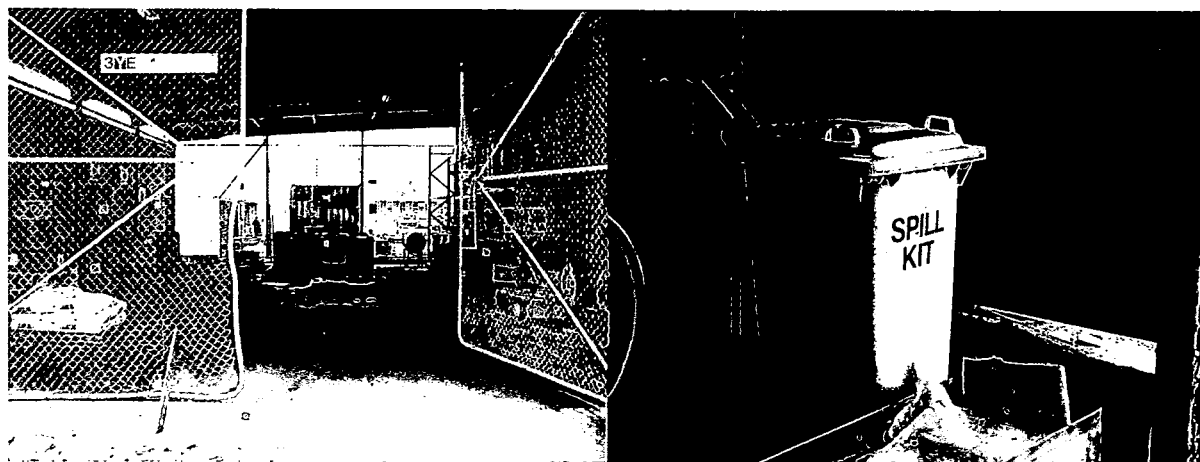


Figure 8 — Bunded oil store

Figure 9— Spill kit in the oil store

As detailed earlier in the report, the site is utilising bulk portable tanks for lubricating purposes, reducing the quantity of waste drums generated on the site.



Figure 10 — Bulk grease tank at left of photograph and portable oil tanks for lubricating equipment in the field

Waste oil is placed into an underground tank located in the refuelling area. Reportedly the tank underwent integrity testing in February 2000 by the firm Premo and found to be sound. However, integrity testing with a frequency of greater than 5 years is not considered adequate to ensure the underground tank is sound. According to EPA Publication 888, "Guidelines on the Design, Installation and Management Requirements for Underground Petroleum Storage Systems (UPSS)", integrity testing alone is insufficient and all underground tanks should be fitted with a leak detection system. For systems used to store waste oil, a suitable leak detection system consists of:

- Automatic Tank Gauging
- Interstitial Monitoring (as back-up only); or
- Manual Tank Gauging (for Used Oil Tanks less than 5,500 litres)

As the current underground tank is 11,000 litres, the site should be installing an automatic tank gauging system. Alternatively, the underground tank could be replaced by a bunded above ground tank.

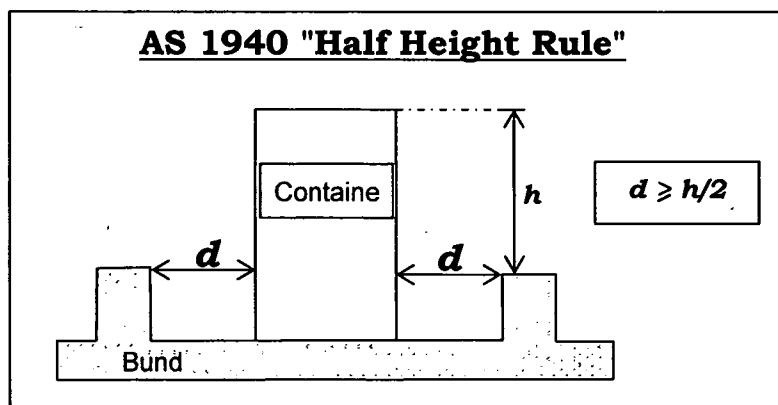
Recommendation

The site should install an automatic tank gauging system on the underground waste oil tank located in the mine workshop area, or the underground tank replaced by a bunded above ground tank.



Figure 11 — Underground waste oil tank filler pipe in foreground, funnel in centre (used for emptying containers of waste oil) and tank eductor pipe in background

The bunding surrounding the above ground tanks in the mine refuelling area do not comply with what is often referred to as the "half height rule" detailed in AS 1940 "The Storage and Handling of Flammable and Combustible Liquids" and as specified in the EPA Bunding Guidelines, Publication No. 347 (refer to diagram below). Consequently, material may spill outside of the bund if a tank is punctured or a fitting were to leak.



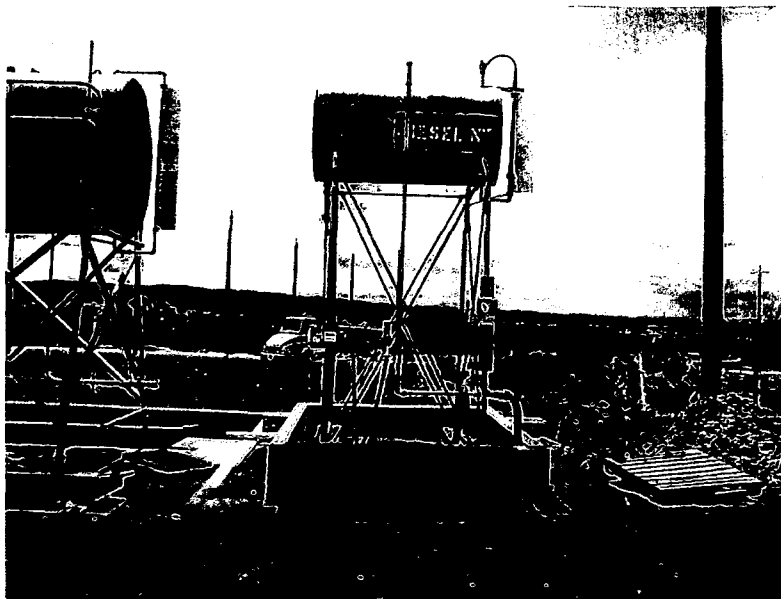


Figure 12 — Distillate tank in the mine re-fuelling area

Recommendation

Splash shields should be placed around the outer sides of those tanks which are on the perimeter of the compound, to prevent any leaks from exiting the compound area and contaminating bare soil and possibly surface water. The splash shields should direct any leakage back into the bunded area.

The area also operates an "Empty Drum Store". However, the inspection revealed that the majority of the drums (200 litre and 20 litre) were full or partially full. The storage area contained 200 litre drums with used absorbent booms, a number of 20 litre drums containing what appeared to be waste grease and several used, but sealed 200 litre drums containing unknown material.



Figure 13 — Empty Drum Shed in the Mine re-fuelling and oil storage area. Drums stored contain waste materials

Recommendation

The waste materials being stored in the mine compound Empty Drum Storage Shed should be removed and disposed of as per EPA waste transport and disposal requirements.

Recommendation

Personnel in the mine who may utilise the mine refuelling and oil storage compound should be made aware of the appropriate waste storage areas and procedures.

4.1.3 Findings from Mine Workshop Inspection

An inspection of the mine workshops found that scrap material was being segregated prior to disposal. This included scrap metal and rubber for recycling and wastes, such as fluorescent lamps, were stored for disposal.

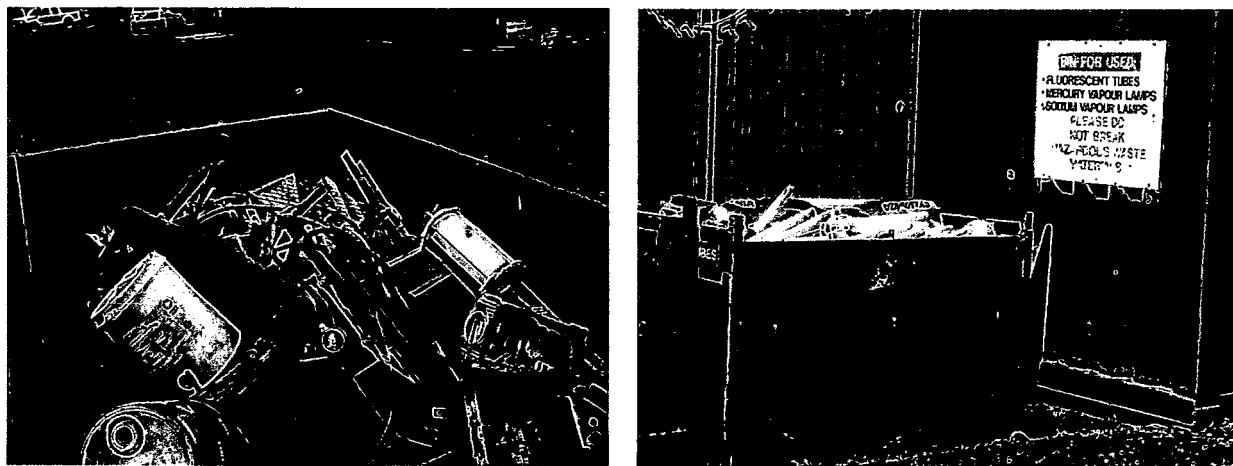


Figure 14 — Waste and scrap recycling bins serving the mine workshop

The mine also maintains "lay-down yards for redundant equipment which could be reused in the future. However, the house keeping in some areas could be substantially improved. The auditor suspects that some stored equipment could be scrapped, while other equipment which could be re-used is becoming "lost" or damaged. In particular, attention should be paid to the lay-down yard around the mine workshop and opposite the refuelling and oil storage compound.

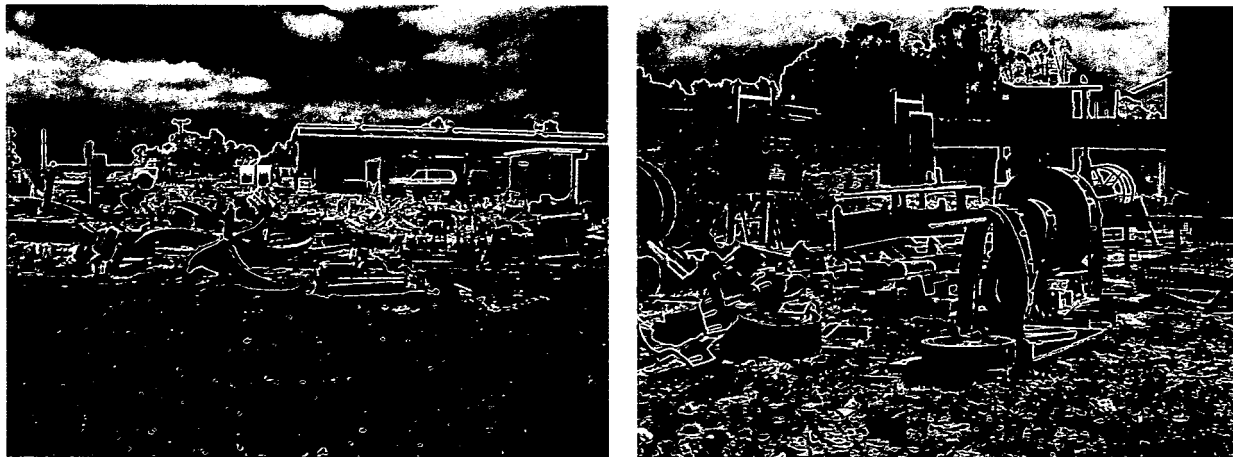




Figure 15 — Lay-down yard around the mine workshop and opposite the refuelling and oil storage compound

Recommendation

The mine lay-down yards should be inspected to identify any equipment which should be scrapped and to improve the housekeeping of these areas. The aim should be to preserve equipment for future use and ensure the equipment can be found when required.

The inspection also identified drums of new oil being stored on bare soil outside of the workshop area. The oil appears to have spilt over time resulting in a small section of soil contamination.



Figure 16 — Oil drums stored and in-use outside of the mine workshop. Note soil staining in foreground

Recommendation

The oil drums stored outside of the mine workshop should be relocated to an area which is paved, covered and contained to prevent the contamination of soil or surface water.

4.1.4 Mine Inspection Conclusions and Risk Assessment

Based on the mine inspection, the following conclusions are reached and risks determined for the previous recommendations, to quantify the level of risk and therefore establish the priority.

Conclusion

Given the volumes of oils and fuel maintained in the mine and the containment of all surface water within the mine, there is little potential for spilt material to discharge off-site.

Risk Assessment

Scenario	=	Spilt hydrocarbons within the mine area discharging offsite and resulting in an observable impact.
Consequence	=	Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
Likelihood	=	Unlikely: Event is conceivable but unlikely to occur
Risk	=	Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Conclusion

As the areas surrounding the oil storage and refuelling compound are bare soil and given the size of the bunds, there is a likelihood that a release could exit the bunds and result in soil contamination.

Risk Assessment

Scenario	=	Spilt hydrocarbons within the mine area resulting in on-site soil contamination.
Consequence	=	Moderate: On-site impact contained with some effort or with outside assistance, may require considerable cost and effort to remediate.
Likelihood	=	Possible: The event might occur at some time
Risk	=	Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Conclusion

All underground tanks eventually leak if left long enough. The underground waste oil tank is not tested with a frequency which would allow leaks to be detected in a timely manner and prevent soil contamination. Therefore, if the current situation prevails, contamination of the surrounding soil is a likely consequence. Also the testing regime does not comply with EPA requirements.

Risk Assessment

Scenario	=	A leak in the underground oil tank results in soil contamination.
Consequence	=	Moderate: On-site impact contained with some effort or with outside assistance, may require considerable cost and effort to remediate.
Likelihood	=	Likely: The event will probably occur
Risk	=	High risk; management attention needed and should be resolved as a matter of priority

4.2 Power Station

4.2.1 Findings from Power Station Inspection

The power station are has a number of bunded oil and waste areas installed to contain hydrocarbons.



Figure 17 — Bunded "New Oil" enclosure (left) and waste oil and rags bund (right)

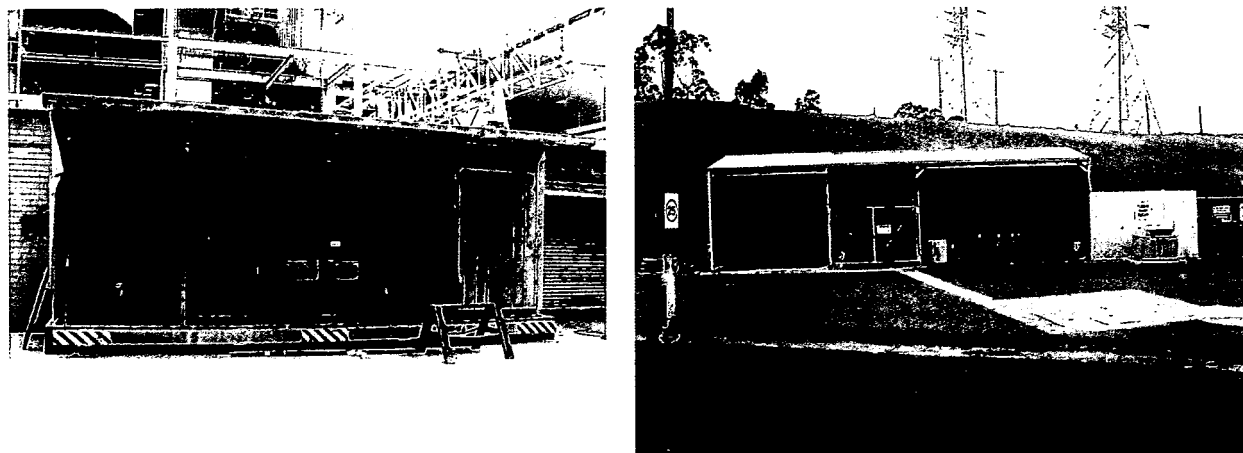


Figure 18 — Bunded oils store in boiler area (left) and waste oil / PCB store (right)



Figure 19 — Bunded chemical store (left) and chemical spill station (right)

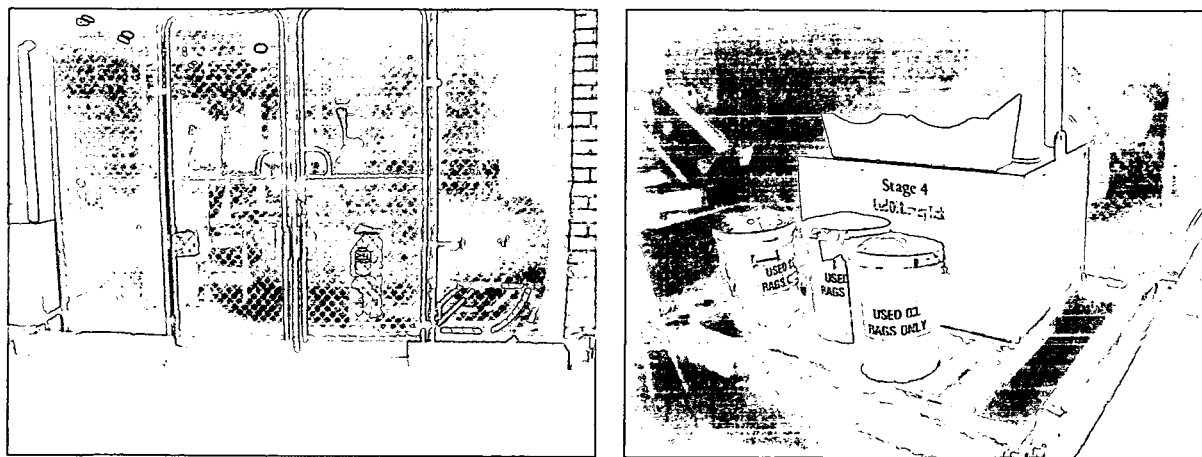


Figure 20 — Oil store (left) and waste oil station (right) inside turbine area



Figure 21 — Bunded Turbine Oil store (left) and bunded diesel tank with contained unloading area (right)

As detailed previously in this report, all surface drains are effectively contained on the site. Surface drains from the station lead to the works effluent pond, which allows any spillage to be contained for retrieval or treatment. Therefore, the site is in technical compliance with the provisions of the Waters of Victoria Policy with respect to the provision of measures to prevent contamination of surface waters. However, the prevention of spillage into the on-site drains is still preferable. Therefore, there were a number of areas identified, which in the auditor's opinion, require attention.

The bunding surrounding the above ground acid and caustic tanks serving the station demineralisation plant do not comply with what is often referred to as the "half height rule" set in AS 1940 "The Storage and Handling of Flammable and Combustible Liquids" and as specified in the EPA Bunding Guidelines, Publication No. 347 (refer to section 4.1.2 above). Consequently, material may spill outside of the bund if a tank is punctured or a fitting were to leak.

The drains in the bottom of the bunded areas are sealed using metal plugs fitted with a rubber gasket which fit into the drain holes. The inspection revealed the plugs were not seated properly. Also, the inside of drain holes into which the plug were seated were covered in a layer of dirt. The auditor was therefore unsure how well the plug and drain arrangement sealed. It was also unclear at the time of the inspection where the drains in the base of the bunded areas drained to.

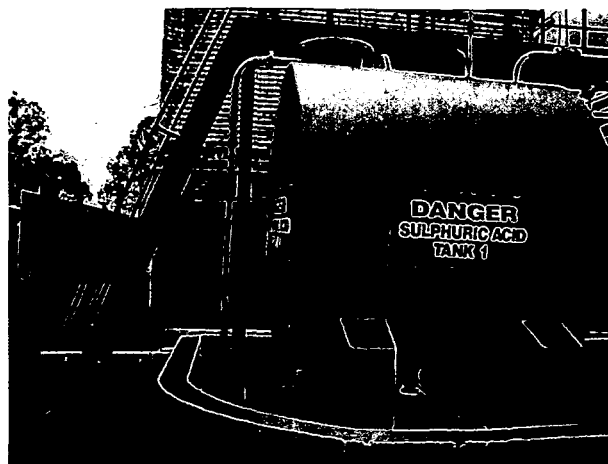


Figure 22 — Above ground acid tank. Note the end of the tank is close to the bund wall



Figure 23 — Plug sealing the acid and caustic bunds. Note plug is not properly seated and the layer of dirt present on all surfaces

Recommendation

The site should investigate means of containing any spill exiting the acid/caustic bunds. This could include sealing of surrounding drains, installation of splash shields or installation of banded mounds to redirect spilt material.

Recommendation

The plugs used to seal the acid/caustic bund drains should be inspected and tested to determine their effectiveness in sealing off the bund. Alternative measures to seal and drain the bund should be implemented if the plugs are found to leak.

Recommendation

The destination of the acid caustic bund drains should be identified and it's suitability assessed. As there is the potential for a large quantity of chemical to enter these drains, an enclosed location which would aid recovery (such as the neutralisation pit) would be preferred.

The concrete under Stage 1 acid/caustic unloading area shows obvious signs of corrosion due to spills of acid. The area is also uncontained and any spill will eventually flow into a nearby drain. A similar situation existed at the Stage 2 unloading area, however, the site has recently constructed an unloading area with a low role-over bund and blind sump to collect these spills. The unloading area is also coated to prevent corrosion of the underlying cement. This new facility will prevent small to medium spills exiting the immediate area. The possibility of a major spill is decreased as personnel are always in attendance. However, it would decrease the risk further if sufficient acid resistant material to block a drain were located close to the nearest surface drain.

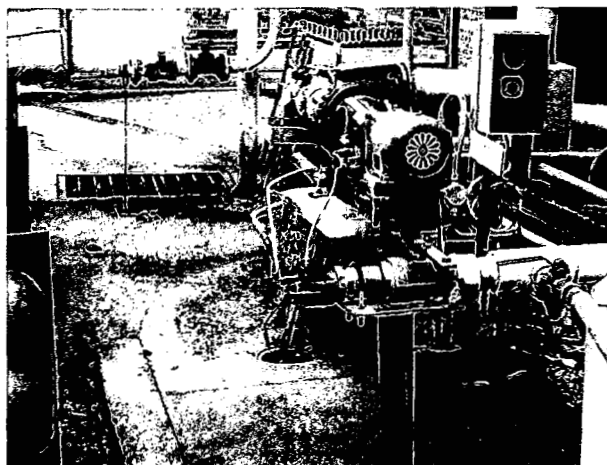


Figure 24 — Stage 1 acid/caustic unloading area.
Note corroded concrete under the unloading points and the stormwater grate in the background.

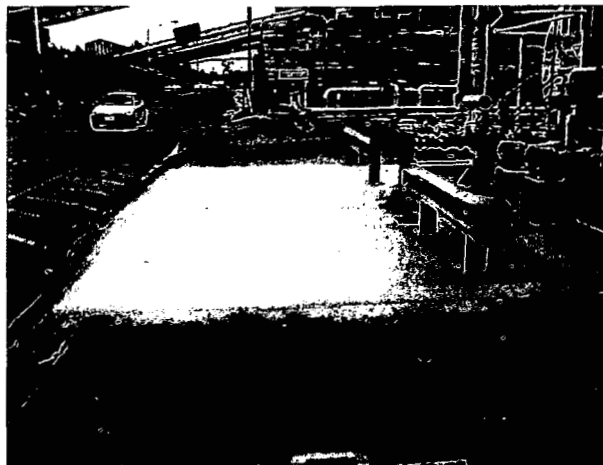


Figure 25 — New Stage 2 acid/caustic unloading area

Recommendation

The Stage 1 acid/caustic unloading area should be reinstated to a similar level as Stage 2.

Recommendation

Sufficient acid resistant material to block a drain should be located close to the nearest surface drains to the Stage 1 and Stage 2 acid/caustic unloading areas.

The inspection found the four alum and three brine bulk tanks are not bunded. As the tanks are constructed from fibreglass and PVC pipe work, there is a potential for damage which could lead to the loss of the entire tank content (maximum of 34 t in each tank). It was also noted that material spilt during deliveries eventually makes it's way to the surface water drain. Even though the quantity is not great, it is not ideal.

Recommendation

The site should investigate the bunding of the alum and brine bulk tanks.

Recommendation

Spill containment measures should be implemented to collect minor spills of alum and brine following unloading. This may consist of collecting the drained product from the delivery hoses and disposal in the neutralisation pit.

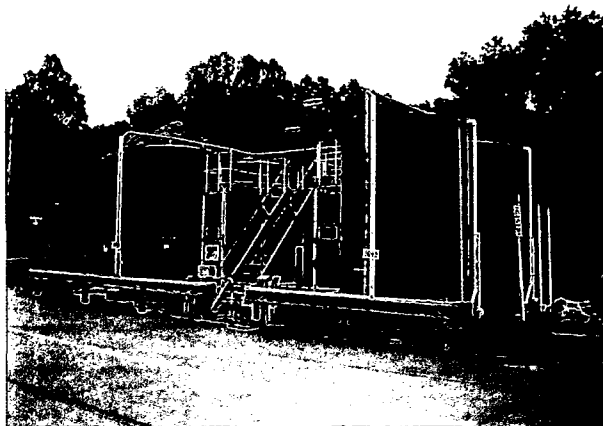


Figure 26 — Note spill of material on roadway following unloading (right). Unbounded alum and brine tanks (above)

Five 1000 litre palecons of anti-scaling chemical were found stored in an unbounded area along the roadway. The location and material of construction make these containers prone to damage.

Recommendation

The 1000 litre palecons of anti-scaling chemical should be relocated from the roadway opposite the bulk brine tanks to a contained and secure area.



Figure 27 — Palecons of anti-scaling chemical stored along the roadway opposite bulk alum tanks

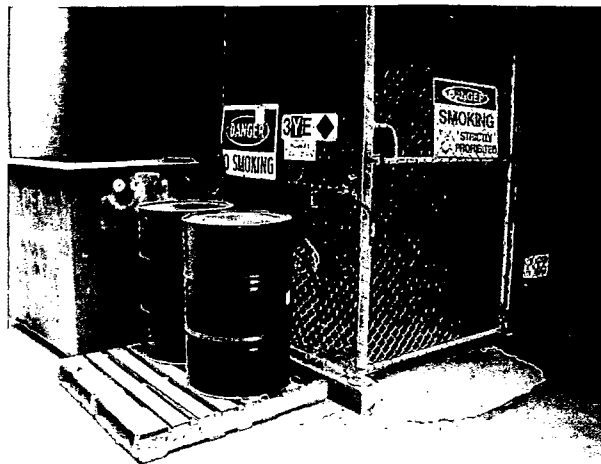


Figure 28 — Two drums of Dispersol (a cleaning chemical) stored outside of the site workshop

There were a significant number of drums containing oil or chemical stored at various locations around the site. A number appear to be stored in these locations temporarily, however, they were uncontained.



Figure 29 — A drum used to collect waste oil (left) and two small drums of new oil (right) under the boiler area



Figure 30 — Drums of waste oil (left) and a drum of waste oil - one drum is empty (right) under the boiler area

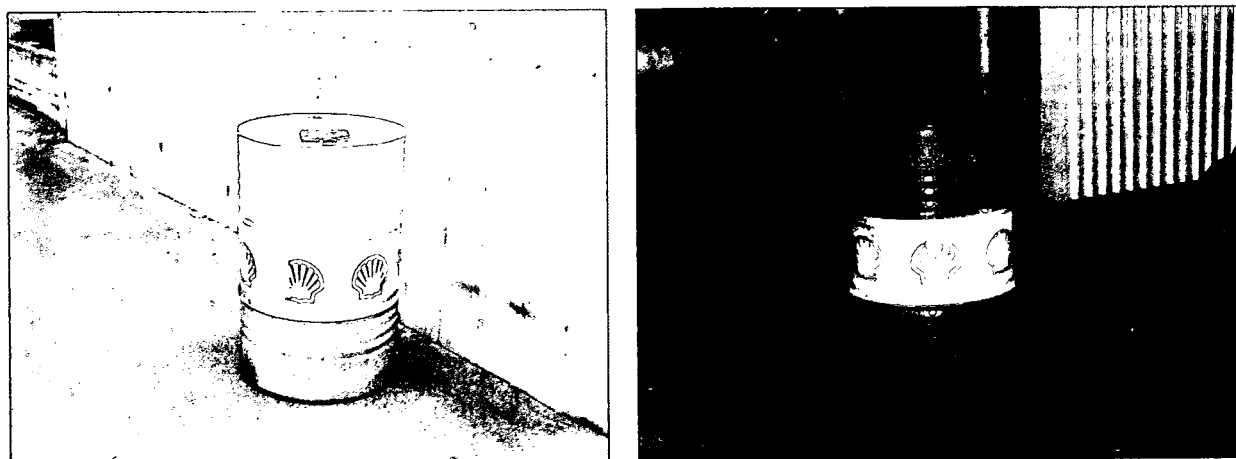


Figure 31 — Drum of dirty oil (left) next to the Turbine Oil store and a drum of oil sitting on a drain in the station on the turbine side (right)

Recommendation

The site should carry out an inspection of the station and remove all drums being temporarily stored in uncontained areas.

Recommendation

The site should purchase banded drum pallets for the temporary storage of drums in field locations. Staff should be:

- instructed in the use of these pallets;
- instructed to only bring out drums for temporary storage immediately prior to use and that they should be transported back into their storage locations as soon as possible.

The inspection identified unrestrained gas cylinders outside of the Alstom Workshop. Any significant damage to gas cylinders may result in an explosion. Even though this issue is not strictly within the scope of the audit, the auditor believes the unrestrained cylinders present an unnecessary risk to human life which can be easily remediated.

Recommendation

Alstom should be instructed to restrain all gas cylinders in suitable cylinder racks.

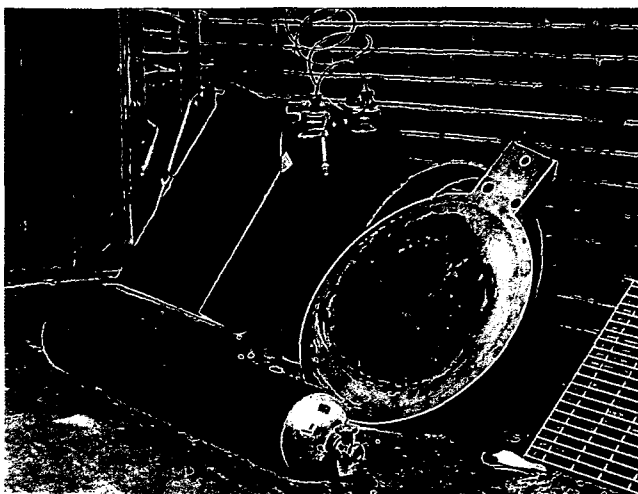


Figure 32 — Unrestrained gas cylinders in front of the Alstom workshop

The inspection found the diesel fuel line supplying the emergency diesel generators runs from the diesel tank, under the roadway, along half the length of the station in a pipe trench and then out to the generators. The pipe is welded and flanged and may be prone to corrosion in certain locations, such as where it is buried and where the pipe trench passes through wet sections of the turbine area. Reportedly, the pipe is not tested in any way. It appears that the pipe trench drains to a large oil interceptor pit, however, this was not clear at the time of the audit. Irrespective of this, the pipe needs to be periodically checked for corrosion to prevent leakage or spills into the pipe trench.

A similar situation exists with the hydrogen line, which runs from the hydrogen trailers located at the western end of the site to each Unit within the station. The line runs within a pipe trench external to the power station. A visual inspection of a small part of the line showed the section of pipe and the its surface coating was in good condition. However, this could not be confirmed for the entire pipeline. The pipeline undergoes an annual inspection of the valves and pipe work to check their condition. There is also a routine to carry out a pressure test. Reportedly, the intention is to review these routines and the related reporting system.

Recommendation

The diesel generator fuel pipeline should undergo regular visual inspections to ensure soundness of the outer protective coating.

Recommendation

Consideration should be given to relocating the section of buried fuel pipeline into a pipe trench which allows visual inspections to be carried out.

Recommendation

The site should confirm that the pipe trench in which the emergency diesel generator fuel pipeline is located drains to the oil interceptor pit.

Recommendation

The inspection of the emergency generator fuel line and the hydrogen line should be in accordance with the inspection requirements detailed in AS 2885.3 2001 "Pipelines - Gas and liquid petroleum, Part 3: Operation and maintenance".

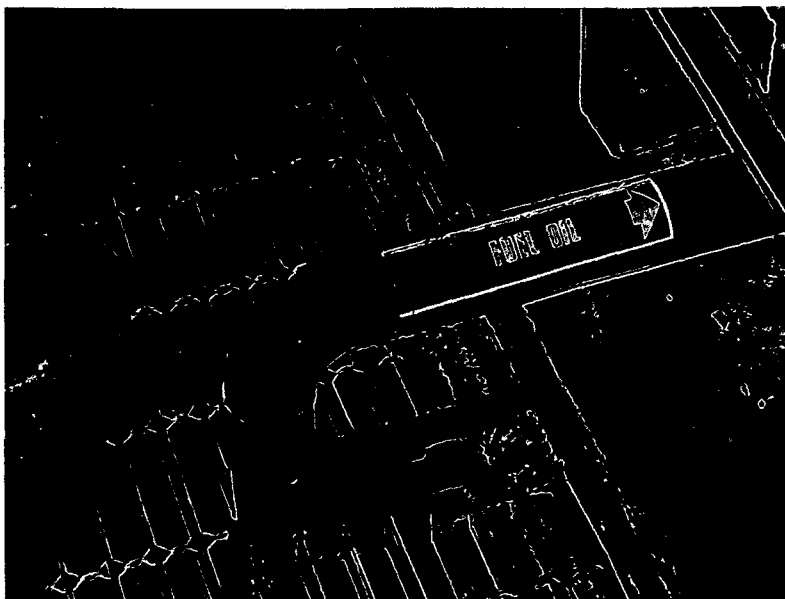


Figure 33 — Emergency diesel generator fuel pipeline

The bulk diesel tank serving the emergency diesel generators drains to a blind sump. The sump is fitted with a float actuated submersible pump. The pump has a single "ON/OFF" control, which was set to "On" at the time of the audit. As was evident from the cob-webs on the switch, this had been the case for some time. In the instance of rain, the pump will automatically drain stormwater from the bunded area into the large oil interceptor pit serving oily drains in the station. However, if there was a leak of distillate into the bunded area, the pump would again be automatically activated and pump the distillate out of the sump. Even though the distillate would be collected in the oil interceptor, the current drainage set-up negates the effectiveness of the bunded area. The auditor therefore believes that the sump pump switch should normally be locked in the "Off" position.

Recommendations

The switch controlling the sump pump in the emergency diesel generator distillate tank bund should be fitted with a lockable switch and locked in the OFF position. A suitable person should be made responsible for turning the pump on and off on an as-needs basis.

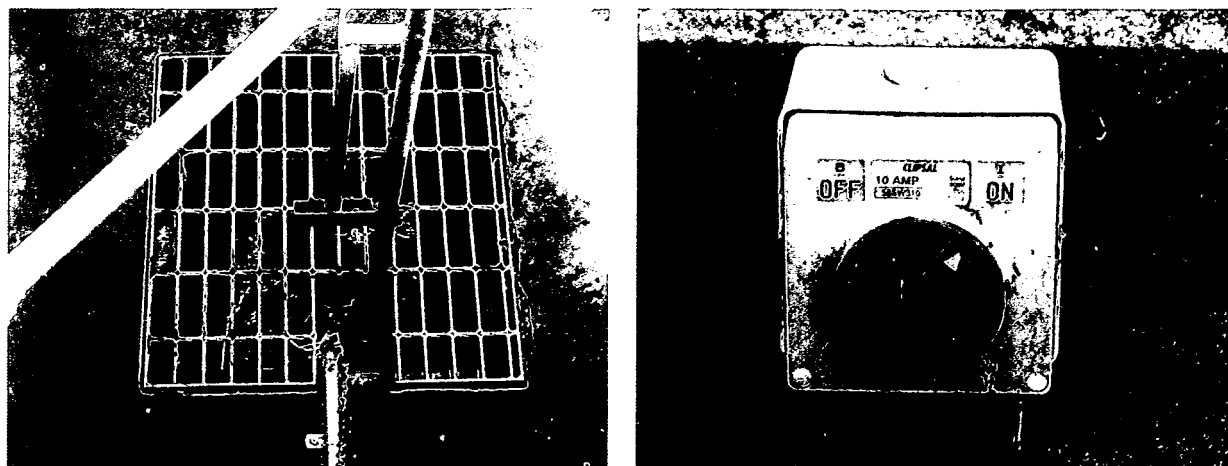


Figure 34 — Emergency diesel generator distillate tank bund sump and control switch

Based on the power station inspection, the following conclusions are reached and risks determined for the previous recommendations, to quantify the level of risk and therefore establish the priority.

4.2.2 Power Station Inspection Conclusions and Risk Assessment

Conclusion

Given the volumes of oils and fuel maintained in and around the power station and the collection of all surface water prior to discharge, there is little potential for spilt material to discharge off-site.

Risk Assessment

Scenario	=	Spilt hydrocarbons within the power station area discharging offsite and results in an observable impact.
Consequence	=	Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
Likelihood	=	Unlikely: Event is conceivable but unlikely to occur
Risk	=	Medium risk; the possibility of additional controls to be assessed and implemented where practicable

Conclusion

Although the acid and caustic tanks are bunded, there is the potential for a release to enter the surface water drains. Some chemicals are also unbunded. All surface water is collected on-site prior to discharge, therefore, there is lower potential for contaminated water to discharge off-site. However, as the majority of the chemicals are water soluble, containment and treatment may be an issue.

Risk Assessment

Scenario	=	Spilt acid/caustic/chemical within the power station area discharging offsite and results in an observable impact.
Consequence	=	Significant: Off-site impact with no medium or long term effects (transient or less than 1-2 years) and can be remediated with some effort and cost. May result in community complaints. Environmental impact may result in a regulatory breach.
Likelihood	=	Possible: The event might occur at some time

Risk = High risk; management attention needed and should be resolved as a matter of priority

Conclusion

The areas surrounding the power station are paved therefore, the likelihood that a release of oil, fuel, or chemical could result in soil contamination is low.

Risk Assessment

Scenario = Spilt hydrocarbons or chemical within the power station area results in on-site soil contamination.

Consequence = Moderate: On-site impact contained with some effort or with outside assistance, may require considerable cost and effort to remediate.

Likelihood = Unlikely: Event is conceivable but unlikely to occur

Risk = Medium risk; the possibility of additional controls to be assessed and implemented where practicable

5.0 Summary of Recommendations

Priority Rating

- A - Action should be taken as a matter of priority (based on environmental risk and regulatory requirement).
- B - Action needs to be taken to rectify (based on risk or regulatory requirements or EMS requirement).
- C - Issue can be improved, action should be considered (based on good practice, or high potential for further reductions in risk).

Recomm. Number	Recommendation	Priority Rating	Proposed Action	Responsibility	Proposed Completion Date
1.	The site should review the "Opportunities for Improvements" located in the Paradigm EMS improvement opportunity database and reset the due dates for those items which are past their due dates. Regular reviews should be scheduled to identify items which are due in the near future and ensure actions are in place to meet the scheduled completion dates.	B			
2.	Once the licence is renegotiated with EPA to allow for a site wide exemption for excess dust emissions (rather than the current Unit by Unit basis), the excess dust emission situation should be re-assessed. If excess dust emissions are still occurring, due to multiple breakdown events, the station should make additional efforts to implement corrective maintenance plans to avoid the breakdowns.	B			
3.	The site should ensure that EPA is notified of any ash water spillage by fax as soon as practicable and copies of the fax should be placed on the EPA correspondence file. This requirement should be specified in the site communication procedure.	B			

Recomm. Number	Recommendation	Priority Rating	Proposed Action	Responsibility	Proposed Completion Date
4.	The site should ensure that EPA is notified in writing of any monitoring results which exceed the licence limits as soon as practicable and copies of the correspondence should be placed on the EPA correspondence file. This requirement should be specified in the site communication procedure.	B			
5.	The mining Work Plan should be amended to address cultural heritage stripping operations and the exploratory drilling operations and then submitted to DPI for approval.	B			
6.	The off-site impact of dust due to stripping operations close to the Strezlecki Hwy needs to be considered when determining the timing of operations and the allocation of resources to suppress dust. This should include consideration of weather conditions, the time the area will remain cleared and the proposed relocation of the Highway.	B			
7.	Ausplume modelling should be carried out on actual emissions to determine compliance with the 1 hr PM10 criteria set in the SEPP (Air Quality Management).	C			
8.	Hazelwood should ensure Chemsal provides certificates of destruction for waste PCBs in the future.	A			
9.	The site should carry out a noise assessment according to the N-1 Policy to determine the permissible noise level/s around the site.	B			

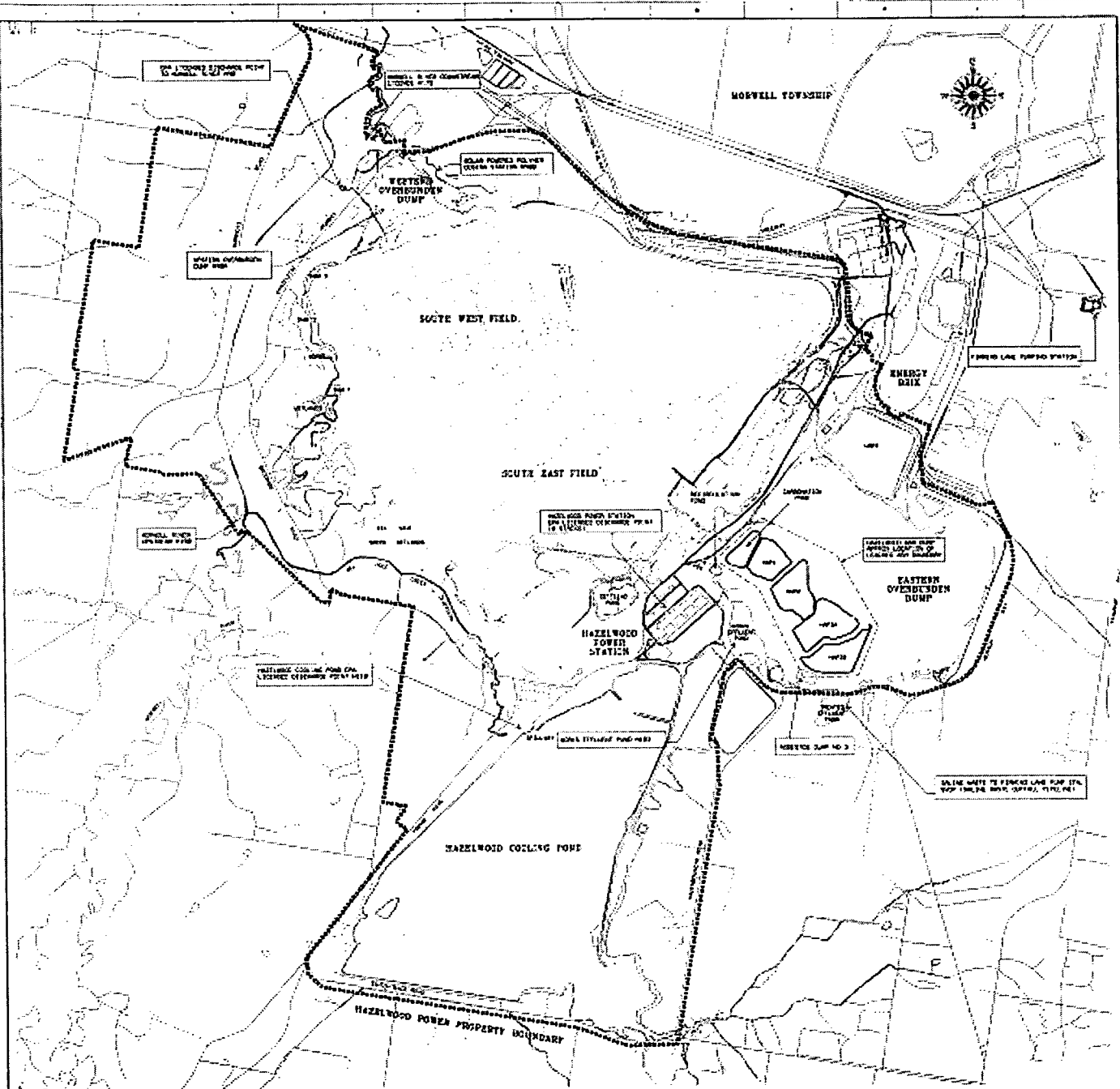
Recomm. Number	Recommendation	Priority Rating	Proposed Action	Responsibility	Proposed Completion Date
10.	The site should investigate the installation of silencers on safety valves, steam release points and other "non-typical" noise sources which appear to occur periodically.	A			
11.	The DPI audit report conducted in approximately 2003/4 should be obtained to ensure the audit recommendations have been addressed. If not, the outstanding audit recommendations should be scheduled for actioning.	B			
12.	Leaks in the waste water pipeline carrying saline overburden dump run-off water into the ash pond should be repaired or sections replaced. The outlet of the pipeline should also be cleared of any blockages and relocated so that it does not become buried in ash.	A			
13.	The site should install an automatic tank gauging system on the underground waste oil tank located in the mine workshop area, or the underground tank replaced by a bunded above ground tank.	A			
14.	Splash shields should be placed around the outer sides of those tanks which are on the perimeter of the compound, to prevent any leaks from exiting the compound area and contaminating bare soil and possibly surface water. The splash shields should direct any leakage back into the bunded area.	B			
15.	The waste materials being stored in the mine compound Empty Drum Storage Shed should be removed and disposed of as per EPA waste transport and disposal requirements.	B			

Recomm. Number	Recommendation	Priority Rating	Proposed Action	Responsibility	Proposed Completion Date
16.	Personnel in the mine who may utilise the mine refuelling and oil storage compound should be made aware of the appropriate waste storage areas and procedures.	B			
17.	The mine lay-down yards should be inspected to identify any equipment which should be scrapped and to improve the housekeeping of these areas. The aim should be to preserve equipment for future use and ensure the equipment can be found when required.	B			
18.	The oil drums stored outside of the mine workshop should be relocated to an area which is paved, covered and contained to prevent the contamination of soil or surface water.	B			
19.	The site should investigate means of containing any spill exiting the acid/caustic bunds. This could include sealing of surrounding drains, installation of splash shields or installation of bunded mounds to redirect spilt material.	A			
20.	The plugs used to seal the acid/caustic bund drains should be inspected and tested to determine their effectiveness in sealing off the bund. Alternative measures to seal and drain the bund should be implemented if the plugs are found to leak.	A			
21.	The destination of the acid caustic bund drains should be identified and it's suitability assessed. As there is the potential for a large quantity of chemical to enter these drains, an enclosed location which would aid recovery (such as the neutralisation pit) would be preferred.	A			
22.	The Stage 1 acid/caustic unloading area should	A			

Recomm. Number	Recommendation	Priority Rating	Proposed Action	Responsibility	Proposed Completion Date
	be reinstated to a similar level as Stage 2				
23.	Sufficient acid resistant material to block a drain should be located close to the nearest surface drains to the Stage 1 and Stage 2 acid/caustic unloading areas.	B			
24.	The site should investigate the bunding of the alum and brine bulk tanks.	B			
25.	Spill containment measures should be implemented to collect minor spills of alum and brine following unloading. This may consist of collecting the drained product from the delivery hoses and disposal in the neutralisation pit.	B			
26.	The 1000 litre palecons of anti-scaling chemical should be relocated from the roadway opposite the bulk brine tanks to a contained and secure area.	A			
27.	The site should carry out an inspection of the station and remove all drums being temporarily stored in uncontained areas.	B			
28.	The site should purchase bunded drum pallets for the temporary storage of drums in field locations. Staff should be: <ul style="list-style-type: none"> - instructed in the use of these pallets; - instructed to only bring out drums for temporary storage immediately prior to use and that they should be transported back into their storage locations as soon as possible. 	A			
29.	Alstom should be instructed to restrain all gas cylinders in suitable cylinder racks.	A			

Recomm. Number	Recommendation	Priority Rating	Proposed Action	Responsibility	Proposed Completion Date
30.	The diesel generator fuel pipeline should undergo regular visual inspections to ensure soundness of the outer protective coating.	B			
31.	Consideration should be given to relocating the section of buried fuel pipeline into a pipe trench which allows visual inspections to be carried out.	B			
32.	The site should confirm that the pipe trench in which the emergency diesel generator fuel pipeline is located drains to the oil interceptor pit.	B			
33.	The inspection of the emergency generator fuel line and the hydrogen line should be in accordance with the inspection requirements detailed in AS 2885.3 2001 "Pipelines - Gas and liquid petroleum, Part 3: Operation and maintenance".	B			
34.	The switch controlling the sump pump in the emergency diesel generator distillate tank bund should be fitted with a lockable switch and locked in the OFF position. A suitable person should be made responsible for turning the pump on and off on an as-needs basis.	A			

Appendix 1 Site Plan



DATE: 12/28/88		DRAWN BY: [Signature]	
SCALE: 1" = 100'		PROJECT NO: LK1778-3/14	
HAZELWOOD POWER PLAN OF PREMISES FOR ENVIRONMENTAL PURPOSES			