WASTE AND HYDROCARBON MANAGEMENT PLAN

Edition	Rev.	Comments	Author	Authorised By	Date
1	1	Draft	WCC	Andrew Wright	25/08/2015
1	2	Amendment following Modification to PA 10_0059	RWC		
1	3	Final - Amended following Group comments	MH / LC	Rod Hicks	07/03/2017

TABLE OF CONTENTS

TABLES

FIGURES

ACRONYMS USED THROUGHOUT THIS DOCUMENT

AR	-	Annual Review
AS	-	Australian Standard
CCC	-	Community Consultative Committee
DPE	-	Department of Planning and Environment
EA	-	Environmental Assessment
EPA	-	Environment Protection Authority
EPL	-	Environment Protection Licence
LOM	-	Life of Mine
LPSC	-	Liverpool Plains Shire Council
ML	-	Mining Lease
OEH	-	NSW Office of Environment and Heritage
PA	-	Project Approval Modification 2
WHMP	-	Waste and Hydrocarbon Management Plan
WCC	-	Werris Creek Coal Pty Ltd
WCCM	-	Werris Creek Coal Mine

1 INTRODUCTION

1.1 Overview

The Werris Creek Coal Mine (WCCM) is operated by Werris Creek Coal Pty Ltd (WCC) and is located within the North West Slopes and Plains of New South Wales approximately 45km south west from Tamworth (**Figure 1**). WCCM is located approximately 4km south of Werris Creek township and 11km north-northwest of Quirindi.

WCC was granted Project Approval (PA) 10_0059 on the 25th October 2011 by the Minister of Planning and Infrastructure for the Life of Mine (LOM) project. The Project involves a northerly extension of the existing mine footprint, increasing the projected mine life by approximately 10 to 15

years. PA 10_0059 has subsequently been modified twice under Section 75W of the Environmental Planning and Assessment Act 1979 (EP&A Act) as follows:

- Modification 1 (10_0059 MOD1) dated 30th August 2012 allowing for the relocation of some surface infrastructure.
- Modification 2 (10_0059 MOD2) dated 3rd November 2015 allowing for minor overburden emplacement changes, agricultural water supply, coal deshaling plant and SB18, and is hereafter referred to as the Modified PA.

In accordance with the Statement of Commitments this Waste and Hydrocarbon Management Plan (WHMP) has been prepared. The plan has also been prepared to meet the management plan requirements specified in Condition 2, Schedule 5 of the Project Approval, the commitments made in LOM Project and Modification 2 Environmental Assessments (EA) and Response to Submissions documents, and Environment Protection Licence (EPL) 12290.

The WHMP has been developed using a risk management process that follows hazard identification, impact assessment, development of management and mitigation measures and contingency planning.

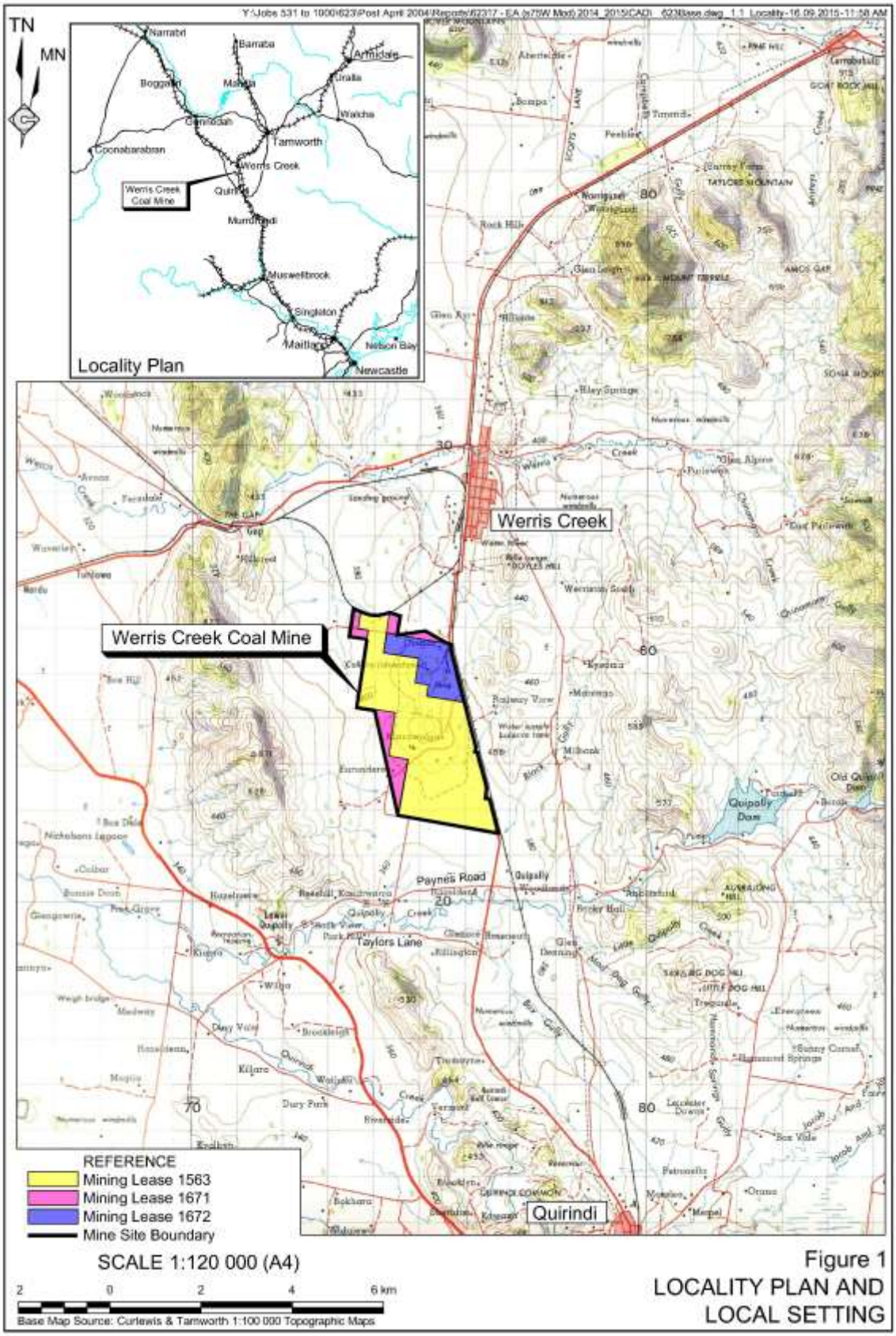

Figure 1 – Locality Plan and Local Setting

1.2 Purpose

The purpose of the WHMP is to:

- Address and comply with the relevant conditions of the Modified PA and EPL 12290;
- Consolidate information relating to baseline conditions, and potential impacts associated with operations associated with the LOM project;
- Outline measures to minimise the waste and hydrocarbon impacts from the WCCM on the surrounding community and environment;
- Establish a waste monitoring program to assess and report on the impact of waste as required by statutory approvals; and

1.3 Scope

The WHMP applies to all activities of WCC which use hydrocarbons or have the potential to generate waste, within the Mine Infrastructure Area as shown in **Figure 2**, with the exception of mineral and non-mineral waste rock from mining operations and dry coal processing residue, which are covered by the Mining Operations Plan for the Werris Creek Coal Mine.

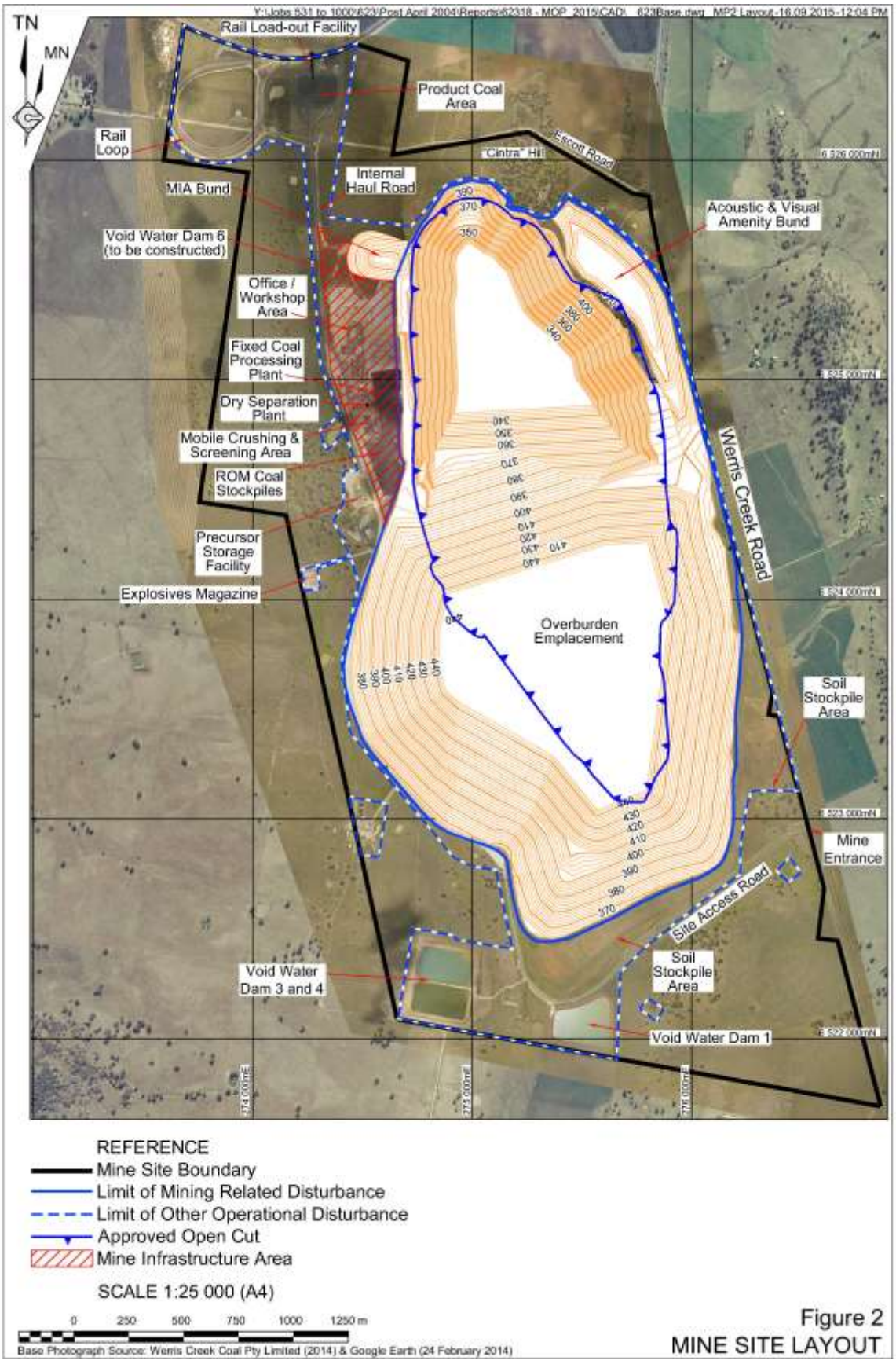

Figure 2 – Mine Site Layout

2 STATUTORY REQUIREMENTS

2.1 The Modified PA

Table 1 details the requirements relating to waste and hydrocarbon management in the Modified PA, and identifies where these requirements are addressed within this management plan.

Table 1: Conditions established in the Modified PA

Schedule (Condition)	Requirement	Section
3(39)	The Proponent shall: (a) implement all reasonable and feasible measures to minimise the waste generated by the project;	6.1
	(b) ensure that the waste generated by the project is appropriately stored, handled and disposed of; and	6.1
	(c) monitor and report on effectiveness of the waste minimisation and management measures in the annual review.	7

2.2 Statement of Commitments

The commitments made in relation to waste and hydrocarbon management outlined in the Modified PA Statement of Commitments are detailed in **Table 2**, which also identifies where these commitments are addressed within the WHMP.

Table 2: Statement of Commitments

Commitment	Action	Section
1.2	Implement the Waste and Hydrocarbon Management Plan.	This Plan
12.1	Prepare and implement waste management activities in accordance with an approved Waste and Hydrocarbon Management Plan (WHMP).	6.1
13.2	Prepare and implement hydrocarbon management activities in accordance with an approved WHMP.	6.2

2.3 Environmental Protection Licence

Table 3 summarises the monitoring and reporting requirements established in the EPL12990 for scheduled activities undertaken as part of the WCCM LOM project.

Table 3: Conditions established in EPL 12290

Condition	Action	Section
L3	**Waste**	
L3.1	The licensee must not cause, permit or allow any waste generated outside the premises to be received at the premises for storage, treatment, processing, reprocessing or disposal or any waste generated at the premises to be disposed of at the premises, except as expressly permitted by the licence.	6.1.1
L3.2	This condition only applies to the storage, treatment, processing, reprocessing or disposal of waste at the premises if those activities require an environment protection licence.	6.1.1
O1.1	Licensed activities must be carried out in a competent manner. This includes: a) the processing, handling, movement and storage of materials and substances used to carry out the activity; and	6 & 7
	b) the treatment, storage, processing, reprocessing, transport and disposal of waste generated by the activity.	

2.4 Relevant Guidelines and Standards

In addition to the regulatory requirements outlined above, waste and hydrocarbon management at WCC will be undertaken in accordance with the following standards and guidelines.

- Australian Standard AS 1940-2004: The storage and handling of flammable and combustible liquids.
- EPA Waste Classification Guidelines, State of NSW Environment Protection Authority November 2014.

3 PERFORMANCE

WCC has recorded data for general waste, scrap metal and waste oil since 2005 when WCC commenced operations. In December 2014 improvements were made to the waste management services, including an increase in the number of waste streams serviced to boost the recovery of recyclable waste products. **Table 4** summarises the waste monitoring results for WCC since 2012.

Table 4: Summary of WCC Waste Monitoring Results 2012 to 2016

	2012-2013	2013-2014	2014-2015	2015-2016	2016*
General Waste (m^3)	1,172	1,596	1,650	1,269	852
Waste Oil (kL)	130	168	182.5	168	120
Scrap Metal (kg)	94	59	80,800	99,430	59,090
Co-Mingled Recycling (m^3)*	No data	No data	55	177	139
Septic (L)	No data	No data	13,000	10,000	0
Cardboard (kg)	No data	No data	1,325	1,300	925
Empty IBCs (kg)	No data	No data	7,200	4,020	1920
Oily Rags (kg)*	No data	No data	6,000	16,080	16,320
Hydraulic Hoses (kg)*	No data	No data	1,000	15,000	15,000
Batteries (kg)*	No data	No data	2,159	3,165	2,042

*Reporting period realigned to reporting period for Annual Review.

There have been no waste or hydrocarbon related non-compliances or complaints since WCC commenced operations in 2005.

4 ENVIRONMENTAL IMPACTS

Risk assessments have been conducted for WCC, part of which identify waste hazard, risk (consequence and likelihood) and management controls to mitigate waste risks.

A summary of the risk assessment for waste is outlined in **Table 5***:* with key waste hazards identified, and an un-mitigated risk ranking for these environmental risk aspects, that is, before any controls are implemented to manage these risks.

Table 5: WCC LOM Project Waste Management Risk Summary

Potential Environmental Impacts	Consequence of Occurrence if not Mitigated	Likelihood of Occurrence if not Mitigated	Unmitigated Risk Rating
Contamination of downstream surface waters	2	C	M
Contamination of groundwater	2	D	L
Contamination of downstream lands	2	D	L
Contamination of site lands			
Reduced visual amenity	2	C	M

5 WASTE AND HYDROCARBON MANAGEMENT OBJECTIVES

The following objectives have been adopted by WCC to ensure the effective management of waste.

- Minimise waste production wherever possible.
- Identify waste types and quantities.
- Identify potential re-use or recycling opportunities and implement appropriate handling and collection procedures where possible.
- Ensure disposal of wastes conforms to applicable guidelines or licences.
- Ensure areas where hydrocarbons are stored are appropriately bunded.
- Ensure sewage disposal does not degrade the waste water utilisation area.

6 MANAGEMENT STRATEGIES AND MEASURES

6.1 Waste Management

6.1.1 General Waste Management Measures

General waste management strategies employed by WCC follow the EPA's Waste Management Hierarchy, as displayed in **Figure 3** below.

Figure 3 – Waste Management Hierarchy

In addition to endeavouring, where reasonable, to follow the Waste Management Hierarchy, the below management strategies will be employed:

- No waste generated off-site will be accepted or disposed of within the WCC infrastructure Area, unless required approvals are held;
- WCC will maintain its Project Area and Premises in an appropriately clean and tidy condition;
- Appropriate waste disposal facilities will be provided in key areas of the mine where waste is likely to be generated. All waste disposal facilities will be clearly identified and will be marked according to the stream of waste accepted;
- Segregation of waste, in particular in relation to recycling, will be encouraged through training, toolbox talks, information material in appropriate locations such as crib rooms and amenities, and provision of appropriate colour-coded bins in suitable locations across the site;
- Only waste for which WCC has specific departmental approval may be disposed of permanently at WCC, e.g. waste water application to a utilisation area. All other waste will be managed according to **Section 6.1.2** of this WHMP;
- A licenced waste contractor is engaged to remove waste at WCC, with contact details and a copy of relevant licenses held by the Environmental Officer; and
- Waste products will be disposed of at appropriate licensed facilities.

6.1.2 Management of Waste Streams

Management of specific waste streams at WCC is carried out as follows.

General Solid Waste

- All non-recyclable general solid wastes are disposed of in onsite bins which are routinely collected for transport to a licenced waste management facility. Cardboard and Co-mingled Recycling;
- Recyclable cardboard is deposited into the designated recycling cage to be collected for offsite sorting and recycling; and
- All other recyclable material, including paper waste, aluminium and steel cans, and certain recyclable plastics are placed within co-mingled recycling bins for collection for offsite segregation and recycling.

Scrap Metal

- Scrap metal is segregated from other waste streams and placed within designated skips that are collected as required by a specialised metal recycler.

Hydrocarbon Contaminated Waste

- Used oil filters are placed in dedicated self-bunded industrial bins or bunded containers and collected as required by the waste management contractor. The oil is drained from the used filters and recycled, while the remaining filter is recycled as scrap steel if possible, or otherwise disposed of as general waste.
- Hydraulic hoses are placed in dedicated self-bunded industrial bins or bunded containers and collected as required by the waste management contractor for offsite treatment or disposal.
- Oil-soaked rags are placed in dedicated wheelie bins or other specific receptacles, which are collected as required by the waste management contractor for offsite treatment or disposal. Dirty rags and those not containing free liquid will be managed as per general solid waste.
- Empty oil drums with no free liquid will be managed as per scrap metal.

Waste Batteries and Tyres

- Waste batteries from maintenance works are stored on a bunded pallet adjacent to the workshop to be collected as required for transport to a recycling facility by the Westpac Rescue Helicopter service;
- Light vehicle and road truck tyres are disposed off-site to a licensed facility at the time of replacement by the relevant tyre service provider;
- Large earthmoving mining equipment tyres are not able to be disposed or recycled off-site and are disposed of on-site, buried by a minimum of 50 metres of spoil within the overburden emplacement. The number of tyres disposed is recorded and surveyed.

Waste timber pallets

- Waste timber pallets are returned to original supplier where possible for re-use.

Sewage/ Waste Water

- WCC has a biocycle sewage treatment system servicing the administration facility and a septic system, both of which are approved by Liverpool Plains Shire Council;
- Treated waste water is discharged onto a utilisation area as outlined in the LOM EA; and
- Solid waste is periodically collected by a licensed waste collection and disposal contractor as required.

From time to time, other waste products will be generated through normal operational activities at WCC. The management of these waste streams will follow the Waste Management Hierarchy, EPA Waste Classification Guidelines, and following advice from our specialist waste management contractor if required.

6.2 Hydrocarbon Management

The following practices are implemented to minimise the risks of pollution of land and water from the storage and use of hydrocarbons at WCC.

- All hydrocarbons are securely stored in appropriate storage tanks or containers in accordance with AS1940-2004;
- All runoff from wash-down areas and workshops is directed to oil/water separators and containment systems. These systems are maintained and cleaned out as required;
- Routine maintenance of mining and earthmoving equipment (with the exception of less mobile mining equipment) will be undertaken in the workshop to allow potential spills to be captured;
- Concrete aprons have been installed at the delivery and fill points of diesel bowsers at the Workshop Fuel Farm. These bunded areas contain spills around the fill point draining back to the oil/water separator;
- Hydrocarbon contaminated soil and silt is remediated within the Bioremediation Area and disposed of on-site following successful treatment of material, as described in **Section 7**;
- Waste oil collected through maintenance work on mining equipment is pumped to a dedicated bulk waste oil tank and is collected routinely for recycling. Waste coolant is also collected through the waste oil system;
- Designated oil filter and hydraulic hose bins are provided to divert these waste streams from general solid waste, increase recycling of recoverable materials, and reduce potential environmental impacts associated with oily residues contaminating general waste;
- Solvent from the industrial parts washer is maintained and disposed of as required; and
- Empty IBC 1,000L pods are collected and recycled as required.

7 MONITORING AND RECORDING

A monthly report prepared by the waste contractor records volumes of each waste stream generated.

Waste production data is used to identify trends in waste disposal, inform continuous improvement in management of waste, as well as identify any changes in waste disposal needs for WCC.

Surface water and groundwater monitoring is also carried out as per the *WCC Site Water Management Plan*, which includes specific monitoring for hydrocarbons in waters on and off site, which are used to identify potential waste or hydrocarbon contamination. Furthermore, monitoring for the presence of hydrocarbons in treated soil in the bioremediation is undertaken prior to the removal of material from this area for beneficial use. Soil samples collected are analysed for a range of hydrocarbon and metal contaminants according to the NSW EPA Technical Note *Investigation of Service Station Sites* (April 2014). The OEH Guideline *Contaminated Sites: Guidelines for*

Consultants Reporting on Contaminated Sites (August 2011) is used in the analysis and interpretation of soil sample results.

8 REPORTING

External reporting related to waste and hydrocarbon management is detailed in **Table 6**.

Table 6: External Reporting Relating to Waste and Hydrocarbon Management

Report	Frequency	Requirements	Distribution	Timing
Non-Compliance (Non-pollution)	As required	Complete Whitehaven Coal Incident Report	Whitehaven	Immediate
		Include in AR and EPL Annual Return	DPE / EPA	Annual
		Detailed report of non-compliance including cause/nature, date, time, duration and location of event; contact details of WCC representatives or witnesses; action taken and measures to prevent recurrence.	Landowner	7 working days of incident
Pollution Incident	As required	Complete Whitehaven Coal Incident Report.	Whitehaven	Immediate
		Response in accordance with PIRMP. *Meet Condition 5(6) of the Modified PA and Conditions R2 & R3.of EPL 12290.*	EPA / DPE (others as required by PIRMP)	Immediate
		Detailed report of any environmental incident and/or non-compliance including cause/nature, date, time, duration and location of event; contact details of WCC representatives or witnesses; action taken and measures to prevent recurrence. *Meet Condition 5(6) of Modified PA and Conditions R2 & R3.of EPL 12290.*	EPA / DPE Director General	immediately within 24 hours of incident occurring
Complaints	As required	Complete Whitehaven Coal/WCC Complaints Form including complainant, complaint reported date & time, date & time of compliant event, complaint method, complainant details, complaint nature, actions taken and follow up contact. *Meet Condition M5 of EPL 12290.*	WCC Complainant	As soon as practicable
			EPA/DPE (if requested)	7 days of complaint
	Monthly	Update Complaints Register with a summary of complaints received. *Meet Modified PA Schedule 5 Condition 10 Dot Point 5.*	Website	Within 14 days of month end
EPL 12290 Annual Return	Annually	Report EPL non-compliances during the period. *Meet Condition R1 of EPL 12290.*	WCC EPA	Due by 31st May
AEMR	Annually	Summarise operational and environmental activities for the previous year as outlined in Section 9.1.	DPE DRE WCC Website	Due by 31st May

9 REVIEW

9.1 Waste and Hydrocarbon Management Review

WCC will implement a number of review processes to ensure that there is continuous improvement in accordance with Schedule 5 (4) of the Modified Project Approval.

9.2 Independent Environmental Audit

WCC is required to undertake an Independent Environmental Audit (IEA) every three years in accordance with the Modified PA (Schedule 5 Condition 8). The IEA will:

- Be conducted by a suitably qualified, experienced and independent team of experts whose appointment will be endorsed by DPE.
- Include consultation with the relevant agencies.
- Assess the environmental performance of the project.
- Assess whether WCC is complying with the requirements of the Modified PA, EPL 12290, ML 1563, ML 1671, ML 1672, including an assessment of the Waste and Hydrocarbon Management Plan.
- Recommend appropriate measures or actions to improve environmental performance relating to waste and hydrocarbon management at WCCM.

10 CONTINGENCY PLAN

WCC is required to implement a contingency plan to manage any unpredicted impacts and their consequences. The need to implement waste and hydrocarbon management contingency plans will be identified by WCC using the reporting processes in **Table 7**.

A number of management measures and actions already discussed in the WHMP can be implemented as waste contingency plans are outlined in **Table 8**.

Table 7: Identification of Waste Contingency Plan Triggers

Reporting Process	Section	Frequency	Method
Community Complaint	8	As required	Complaint investigation identifies waste or hydrocarbon incident.
Waste Non-compliance (Serious Incident)	8	As required	Incident investigation identifies waste or hydrocarbon non-compliance.

Table 8: Waste Management Contingency Plans

Contingency Plan	Method	Section
Community Complaint	Response to community complaint outlining contingency plan actions to be implemented to the satisfaction of the complainant and DPE/EPA if involved	8
Waste Non-compliance (Incident)	Response to relevant government departments regarding non-compliance outlining contingency plan actions to be implemented to the satisfaction of the relevant government departments	8

11 REFERENCES

Environment Protection Authority, Technical Note: *Investigation of Service Station Sites (April 2014)*

Office of Environment and Heritage, Contaminated Sites: *Guidelines for Consultants Reporting on Contaminated Sites (August 2011)*

R.W. Corkery & Co. Pty. Limited, Werris Creek Coal Mine LOM Project: Environmental Assessment, Dec 2010

R.W. Corkery & Co. Pty. Limited, Werris Creek Coal Mine Environmental Assessment Modification 2, April 2015

Werris Creek Coal Pty Ltd, Life of Mine Mining Operations Plan for the Werris Creek Coal Mine, December 2015