Hexham TSF Waste Management Plan

9 August 2024

Plan Approval Table

Position	Name	Signature	Date
Regional Maintenance Manager	Craig Tuffley		09/08/2024

Revision History

Rev	Date	Author	Comments
1	20/02/15	Heath Anderson	DPE Approved
2	18/02/16	Heath Anderson	DIL and WWTP consistency
3	11/10/17	Heath Anderson	S1 Draft for review (third party)
4	20/05/19	Harry Egan	Update following completion of 2018 IEA
5	28/04/20	Harry Egan	Inclusion of turning angle details
6	01/10/21	Harry Egan	Annual Update
7	02/02/23	Harry Egan	Mod 2 Update
8	09/08/24	Harry Egan	Annual Update

Table of Contents

Table of Figures

Table of Tables

Glossary

Term	Definitions
the Approval	State Significant Infrastructure MP07_0171 MOD 1
Aurizon	Aurizon Operations Pty Ltd
CMF	Combined Maintenance Facility
CWR	Coal Washery Reject
DAF	Dissolved aeration floatation
EPL	Environmental Protection Licence
EP&A Act	*Environmental Planning and Assessment Act 1979*
the Guidelines	*Waste Classification Guidelines (EPA, 2014)*
OEMP	14-PLA-0004-HEX Aurizon Hexham TSF OEMP
SDS	Safety Data Sheet
the Site	Hexham Train Support Facility
SoC	Statement of Commitments
SSI	State Significant Infrastructure
WMP	Waste Management Plan
WWTP	Waste Water Treatment Plant

1.0 Introduction

1.1 Site Description

The Aurizon Operations Pty Ltd (Aurizon) Hexham Train Support Facility (the Site) has a total area of 255ha and is located at Hexham approximately 16km north-west of the Newcastle Central Business District.

The Site shares borders with the Main Northern Railway and Pacific Highway to the east and the New England Highway to the north. To the south and west rural properties and the Hexham Swamp Nature Reserve are adjacent. The Site is located within a predominantly industrial setting, with only a small number of residential dwellings within the local vicinity.

The Site's history as a coal handling facility has resulted in the southern portion of the site containing an abandoned rail loop corridor and coal washery reject (CWR). CWR is retained within vegetated stockpiles however it is also present extensively in sub surface deposits. Remediation completed during the construction of the TSF infrastructure has resulted in excavated CWR and Potential Acid Sulphate Soil (PASS) being stockpiled in the southern portion of the site

Brancourts Manufacturing and Processing Pty Ltd are currently licensed to use a portion of the site for a waste water treatment plant and effluent irrigation area under Environmental Protection Licence (EPL) 816. Effluent is irrigated over the above mentioned CWR stockpiles.

1.2 Operational Activities

The Site provides routine and ad hoc provisioning and maintenance services to outbound locomotives and wagons. The treatment of generated septic and operational waste water is undertaken onsite through the utilisation of a septic treatment plant and dissolved aeration floatation (DAF) plant. Waste from onsite activities is managed and removed through the engagement of a certified waste contractor under a national Aurizon contract.

Infrastructure associated with the Site and the above mentioned operational activities are restricted to approximately a 38 hectare portion of the Site and consists of:

- Seven train tracks (10.5 kilometres) parallel to the existing mainline, turning angle and a shunt track;
- Operational depot and wagon stowage area;
- a provisioning building, service vehicle garage and combined maintenance/administrative centre;
- surface water management infrastructure including retention basins;
- bulk fuel storage area; and
- A wastewater treatment plant with on-site effluent irrigation and DAF.

1.3 Legislative Context

The project was assessed and approved as State Significant Infrastructure (SSI) under Part 5.1 of the *Environmental Planning and Assessment Act 1979 (EP&A Act).*

The Site approval history is as follows:

- The Site was approved by a delegate of the Minister for Planning and Infrastructure under MP07_0171, dated 10 October 2013.

- The Hexham TSF Turning Angle (the Turning Angle) Modification MP07_0171 MOD 1 (SSI-6090) was approved on the 09 October 2019.

- The Operational Depot and Long-Term Wagon Storage Modification MP07_0171 MOD 2 (SSI-6090) was approved in September 2022.

This Waste Management Plan (WMP) has been developed and implemented to address Conditions C25 - 28 of the Approval. A matrix of the conditions of approval and Statement of Commitments (SoC) is included as Appendix A. This matrix identifies where these conditions/commitments have been addressed in the WMP.

The WMP has been developed with reference to the Guidelines for the Preparation of Environmental Management Plans (Department of Planning, 2004) and should be read in conjunction with the Aurizon Hexham TSF Operational Environmental Management Plan (OEMP).

1.4 Purpose and Objectives

The WMP has been prepared to support the on-going requirements of the OEMP and to meet relevant regulatory requirements. This WMP details the key information and instructions to undertake waste management during the operational phases of the TSF.

2.0 Waste Context

2.1 Waste Generation

Various wastes will be generated from different activities during operation of the Site. The key waste streams and their sources are outlined in Table 1 below. Waste will be managed in accordance with the waste management hierarchy as per Figure 1.

Table 1 - Key Waste Sources

Source	Waste Type
Combined Maintenance Facility	Waste Water Waste Sludge Oil Waste Coolant Waste Spill Waste Scrap Metal
Provisioning Facility	Waste Water
Waste Water Treatment Plant	Waste Water Waste Sludge
Administration Building	Sewage Waste General Waste (food scraps, plastic, cans, paper)

Figure 1 - Waste Hierarchy

2.2 Waste Classification

Where waste cannot be avoided, reused, recycled or recovered, it will be classified and appropriately disposed of. Waste generated by operations will be classified in accordance with the *Waste Classification Guidelines (EPA, 2014)* (the Guidelines) into the following streams.

- Special waste (e.g. asbestos and tyres);
- general solid waste (putrescible) (e.g. general litter and food waste);
- general solid waste (non-putrescible) (e.g. glass, paper, building demolition waste, concrete);
- restricted solid waste;
- liquid waste (e.g. oil, fuels, chemicals and pesticides); and
- Hazardous waste (e.g. lead-acid batteries and lead paint).

If a material is re-used on site it is not classified as a waste. If a material is being disposed of, waste classification is required as per the Guidelines. The classification process is summarised in Table 2 below.

Table 2 - Waste Classification Summary

Step	Question	Waste Example	Comment
1	Is the waste special waste?	• Clinical. • Asbestos • Waste tyres.	Refer relevant regulatory management and disposal requirements
2	If not special, is the waste liquid waste?	• Water from on-site treatment plants and sediment basins • Waste oils/fuels/chemicals • Concrete washout • Paint • Effluent	• Has an angle of repose of less than 5 degrees above horizontal; or • Becomes free-flowing at or below 60 degrees Celsius or when it is transported; or • Is generally not capable of being picked up by a spade or shovel.
3	If not liquid, has the waste already been pre-classified by EPA.	The EPA has pre-classified several commonly generated wastes in the categories of hazardous, general solid waste (putrescible) and general solid waste (non-putrescible).	If a waste is listed as 'pre-classified', no further assessment is required.
4	If not pre-classified, is the waste hazardous?	• Explosives • Flammable solids • Substances liable to spontaneous combustion • Oxidizing agents • Toxic and corrosive substances	Defined in accordance with the Australian Code for the Transport of Dangerous Goods
5	If not hazardous, undertake chemical assessment to determine classification. If the waste is not chemically assessed, it must be treated as hazardous.		Chemical assessment will determine if the waste is classified as 'general solid waste', 'restricted solid waste' or 'hazardous waste'. If a chemical assessment is not undertaken, the waste must be treated as hazardous waste.
6	If the waste is chemically assessed as general waste, undertake further testing to determine if the waste is putrescible or non-putrescible.	Non-putrescible materials typically do not: • Readily decay under standard conditions; • emit offensive odours; and • Attract vermin or other vectors (such as flies, birds and rodents).	If this test is not undertaken, you must manage the waste as if it were 'general solid (putrescible)'.

2.3 Health and Safety

The handling of all wastes must be undertaken in a safe manner. Where relevant, employees and contractors must make themselves aware of any possible hazards associated with handling, storing or disposing of waste products including referencing relevant Safety Data Sheets (SDS').

3.0 Waste Handling

3.1 Waste Handling

All wastes must be handled in such a manner to avoid accidental release of product to the environment.

Any waste generated outside the Site is not to be received for storage, treatment, processing, reprocessing, or disposal, except where permitted by licence under the *Protection of the Environment Operations Act 1997* (POEO Act), if such a licence is required for the particular waste.

3.2 Storage of Waste

All liquid and solid wastes will be stored in appropriate containers or vessels that are designed to contain the intended contents.

All containers and vessels containing hazardous liquid wastes will be stored in bunded areas or tanks that have the capacity to store 110% the volume of the largest stored container to prevent any leaks or spills that may contaminate the receiving environment.

All solid wastes will be stored in appropriately covered wheelie bins, skips or containers that will not allow the loss or leakage of product or entering of rainwater.

Any containers found to be leaking or likely to leak must be repaired or replaced immediately. Waste contractors that provide containers that cannot contain any leaks or spills must be contacted immediately and requested to either remove and or replace the container immediately.

3.3 Transport and Disposal of Wastes

The EPA specifies categories of waste that are subject to specific monitoring and reporting requirements in accordance with the Guidelines.

The list of trackable wastes is provided in Schedule 1 of the Protection of the Environment Operations (Waste) Regulation 2005. Wastes only need to be tracked under the POEO Act when they are removed from Site.

All wastes are to be transported by a licenced waste transporter and only disposed of at an appropriately licensed waste management facility or premises lawfully permitted to accept the materials as per the requirements of New South Wales waste legislation and regulations.

All controlled waste generated at the site can only be removed off site by a licensed waste transporter and must be tracked with a completed waste transport certificate during transport and disposal. Tracking of wastes shall be through a DECCW approved online waste tracking system. Copies of waste tracking documentation should be retained for a minimum of four years for auditing purposes.

4.0 Waste Management

Onsite waste management onsite is summarised in Table 3 below.

Table 3 - Waste Management Strategies

Waste Type	Management	Disposal
CMF Waste Water	Runoff from the wash down facility (including overflow from the dirty water and sludge collection tank bunds) is directed to a collection pit located centrally within the wash down bay. The collection pit contents is pumped into a Dirty Water collection tank prior to being treated at the DAF plant.	Gross pollutant traps will remove larger coal fragments with pH and flocculent treatment settling out fine sediments. Water is processed through the DAF system with the discharge to be collected into a separate sludge tank for collection by a licensed waste transporter Recycled water is stored after treatment for sanitary and/or machine wash down purposes.
Service Vehicle Garage	Spill kits present and contractors undertaking light vehicle service will be required to demonstrate the availability of emergency spill response control measures prior to work commencing.	Hydrocarbon contaminated material to be removed offsite by licenced contractor.
Sewage	The WWTP will collect grey and black water from the Provisioning Shed and CMF. This water will be collected in three separate wet wells by means of small pump out systems which will then pump to the Buffer Tank which pumps into the WWTP for treatment.	Effluent will be irrigated at the designated effluent irrigation area post treatment. Screening and grit capture will be cleaned and collected in suitable disposable containers while waste sludge will be stored in a covered tank for periodic removal
Sludge	Waste sludge generated at the on-site waste water and trade waste treatment plants will be stored in covered above ground storage tanks.	Sludge shall be removed by a licenced waste transporter for off-site processing and disposal.
Oil	The Provisioning Shed and CMF comprise sealed hardstand areas that drain to dedicated trade-waste systems.	Waste oil will be stored adjacent to the CMF and Provisioning Shed in self-bunded tanks and will be removed by an appropriately licensed waste transporter on a regular basis. A minor spill containment system and spill kits will be located within the unloading area and adjacent to the filling/decanting points.
Filters and Rags	Waste oil filters and oily rags will be stored in separate hydrocarbon receptacles in the CMF.	Oily rags will be removed from site and disposed of by an appropriately licensed waste contractor. Oil filters will be removed and cleaned by an appropriately licensed waste contractor prior to returning to site for re-use.
Coolant	Contaminated coolant will be pumped or drained to a contaminated coolant storage container (capacity 2000L).	The storage container will be either picked up or emptied by an appropriately licensed trade waste contractor.
Sand and Coal Fines	Sand and coal fines within the provisioning facility sealed surfaces will be collected and stored in drums.	Waste will be classified if hydrocarbons identified and disposed by licenced contractor.
Recyclables	Recycling waste stream bins will be available throughout the TSF	Waste will be removed from site by a licenced contractor.

5.0 Compliance and Reporting

5.1 Waste Monitoring and Reporting

Details of all wastes leaving the site will be recorded including:

- Date and time of departure;
- waste classification:
  - special waste (e.g. Asbestos and tyres),
  - general solid waste (putrescible) (e.g. general litter and food waste),
  - general solid waste (non-putrescible) (e.g. glass, paper, building demolition waste, concrete),
  - restricted solid waste,
  - liquid waste (e.g. oil, fuels, chemicals and pesticides),
  - hazardous waste (e.g. lead-acid batteries and lead paint),
  - spoil (clean fill);
- waste description;
- amount;
- transport name;
- receiving facility name and address;
- waste use (recycled/ stored/ treated/ disposed); and
- Reference (docket/ transport certificate/ invoice).

Details of waste removed from Site will be recorded and reported to Aurizon monthly by the contracted waste contractor.

5.2 Corrective Actions

As per Section 4.0 of the OEMP:

- Identified non-conformances with the WMP, legislative or other requirement will be managed in accordance with Aurizon non-conformance and incident reporting guidelines; and
- corrective and preventative actions arising from non-conformances will be managed in accordance with Aurizon corrective actions guidelines.

Non-conformances will be identified by the completion of routine inspections of the Site. Non-conformances with prescribed waste management practices will be identified during monthly review of monitoring data as per Section 5.1 – Waste Monitoring and Reporting and annual auditing detailed in Section 4.0 of the OEMP.

If a non-conformance is identified the Site Environmental Advisor must be notified and the source, handling and destination of the waste will be recorded. The waste management procedures of this WMP would be reviewed to identify and rectify the cause of non-compliance and regulatory notification undertaken as required.

5.3 Plan Revision

The Environmental Advisor will review this WMP and its implementation annually in accordance with Section 7 of the OEMP. The purpose of the review is to ensure that the WMP and operating system is meeting the facility's statutory requirements.

The Senior Adviser Environment has the authority to approve/ reject minor amendments to the WMP. Minor amendments are changes that do not have a detrimental effect on the environment or increase the risk profile.

5.4 Responsibilities

This plan applies to all occupiers of the Aurizon Hexham TSF and includes Aurizon employees, contractors, lessees and visitors.

The Site Manager and his/her delegates are responsible for ensuring all identified strategies are implemented and maintained. The Site Manager is to ensure all persons entering the site are made aware of this plan during site induction processes.

APPENDICIES

APPENDIX A – Minister Conditions of Approval MP07_0171 and Statement of Commitments

Relevant Minister Conditions of Approval

MCoA	Description	WMP Section
C25	The Proponent shall ensure that all liquid and/or non-liquid waste generated on the site is assessed and classified in accordance with *Waste Classification Guidelines* (DECCW, 2009), or any future guideline that may supersede that document, and that it is appropriately handled.	Section 2
C26	The Proponent shall maximise the reuse and/or recycling of waste materials generated on site as far as practicable, to minimise the need for treatment or disposal of those materials off site.	Section 2
C27	The Proponent shall not cause, permit or allow any waste generated outside the site to be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste. This condition is independent of the operation of the Brancourts facility and Sewerage Treatment Plant.	Section 3
C28	All waste materials removed from the site shall be appropriately tracked and shall only be directed to a waste management facility or premises lawfully permitted to accept the materials.	Section 3

Relevant Statement of Commitments

SoC	Description	WMP Section
Item 52	An Operational Waste Management Plan will be prepared to address the ongoing handling, storage and disposal of waste. The Operational Waste Management Plan will provide: a) identification of the types of waste likely to be generated during construction; b) appropriate storage of waste on site; c) measures to minimise the amount of waste produced; d) measures to increase the potential for waste to be re-used and recycled; e) appropriate methods to assess if waste can be re-used, recycled or disposed to landfill; and f) maintaining records of waste re-use, recycling and/or disposal.	WMP
Item 53	Licensed waste contractors will be made responsible for collection and appropriate disposal of waste.	Section 3

APPENDIX B – Trackable Waste

Table A1 Trackable Waste

Description	Waste Code
Acidic solutions or acids in a solid form	B100
Antimony; antimony compounds	D170
Arsenic; arsenic compounds	D130
Barium compounds (excluding barium sulphate)	D290
Basic solutions or bases in solid form	C100
Beryllium; beryllium compounds	D160
Boron compounds	D310
Cadmium; cadmium compounds	D150
Ceramic-based fibres with physico-chemical characteristics similar to those of asbestos	N230
Chlorates	D350
Chromium compounds (hexavalent and trivalent)	D140
Clinical and related wastes	R100
Cobalt compounds	D200
Containers and drums that are contaminated with substances referred to in this list	N100
Copper compounds	D190
Cyanides (inorganic)	A130
Cyanides (organic)	M210
Encapsulated, chemically-fixed, solidified or polymerised wastes	N160
Ethers	G100
Filter cake	N190
Fire debris and fire wash waters	N140
Fly ash	N150
Halogenated organic solvents	G150
Highly odorous organic chemicals (including mercaptans and acrylates)	M260
Inorganic fluorine compounds excluding calcium fluoride	D110

Description	Waste Code
Inorganic sulphides	D330
Isocyanate compounds	M220
Lead; lead compounds	D220
Mercury; mercury compounds	D120
Metal carbonyls	D100
Nickel compounds	D210
Non-toxic salts	D300
Organic phosphorous compounds	H110
Organic solvents excluding halogenated solvents	G110
Organo halogen compounds – other than substances referred to in this Table	M160
Perchlorates	D340
Phenols, phenol compounds including chlorophenols	M150
Phosphorus compounds excluding mineral phosphates	D360
Polychlorinated dibenzo-furan (any congener)	M170
Polychlorinated dibenzo-p-dioxin (any congener)	M180
Residues from industrial waste treatment/disposal operations	N205
Selenium; selenium compounds	D240
Soils contaminated with a substance or waste referred to in this Table	N120
Surface active agents (surfactants), containing principally organic constituents and which may contain metals and inorganic materials	M250
Tellurium; tellurium compounds	D250
Thallium; thallium compounds	D180
Triethylamine catalysts for setting foundry sands	M230
Vanadium compounds	D270
Waste chemical substances arising from research and development or teaching activities, including those which are not identified and/or are new and whose effects on human health and/or the environment are not known	T100
Waste containing peroxides other than hydrogen peroxide	E100

Description	Waste Code
Waste from heat treatment and tempering operations containing cyanides	A110
Waste from manufacture, formulation and use of wood-preserving chemicals	H170
Waste from production, formulation and use of biocides and phytopharmaceuticals	H100
Waste from the production, formulation and use of inks, dyes, pigments, paints, lacquers and varnish	F100
Waste from the production, formulation and use of organic solvents	G160
Waste from the production, formulation and use of photographic chemicals and processing materials	T120
Waste from the production, formulation and use of resins, latex, plasticisers, glues and adhesives	F110
Waste from the production and preparation of pharmaceutical products	R140
Waste mineral oils unfit for their original intended use	J100
Waste oil/water, hydrocarbons/water mixtures or emulsions	J120
Waste pharmaceuticals, drugs and medicines	R120
Waste resulting from surface treatment of metals and plastics	A100
Waste tarry residues arising from refining, distillation and any pyrolytic treatment	J160
Waste substances and articles containing or contaminated with polychlorinated biphenyls, polychlorinated napthalenes, polychlorinated terphenyls and/or polybrominated biphenyls	M100
Waste of an explosive nature not subject to other legislation	T200
Zinc compounds	D230

Table A2 Characteristics of Trackable Waste

Dangerous Good Class (UN Class)	UN Code	Characteristics
1	H1	Explosive An explosive substance or waste is a solid or liquid substance or waste (or mixture of substances or wastes) which is in itself capable by chemical reaction of producing gas at such a temperature and pressure and at such a speed as to cause damage to the surroundings.
3	H3	Flammable liquids The word “flammable” has the same meaning as “inflammable”. Flammable liquids are liquids, or mixtures of liquids, or liquids containing solids in solution or suspension (for example, paints, varnishes, lacquers, etc. but not including substances or wastes) which give off flammable vapour at temperatures of not more than 60.5 degrees Celsius, closed-cup test, of not more than 65.6 degree Celsius, open-cup test.
4.1	H4.1	Flammable solids Solids or waste solids which under conditions encountered in transport are readily combustible, or may cause or contribute to fire through friction.
4.2	H4.2	Substances or wastes liable to spontaneous combustion Substances or wastes which are liable to spontaneous heating under normal conditions encountered in transport, or to heating up in contact with air, and being liable to catch fire.
4.3	H4.3	Substances or wastes which, in contact with water, emit flammable gases Substances or wastes which, by interaction with water, are liable to become spontaneously flammable or to give off flammable gases in dangerous quantities.
5.1	H5.1	Oxidising Substances or wastes which, while in themselves not necessarily combustible, may, generally by yielding oxygen, cause or contribute to, the combustion of other materials.
5.2	H5.2	Organic peroxides Organic substances or wastes which contain the bivalent-O-O structure are thermally unstable substances which may undergo exothermic self-accelerating decomposition.
6.1	H6.1	Poisonous (acute) Substances or wastes liable either to cause death or serious injury or to harm human health if swallowed or inhaled or by skin contact.
6.2	H6.2	Infectious substances Substances or wastes containing viable micro-organisms or their toxins which are known or suspected to cause disease in animals or humans.
8	H8	Corrosives

Dangerous Good Class (UN Class)	UN Code	Characteristics
		Substances or wastes which, by chemical action, will cause severe damage when in contact with living tissue, or in the case of leakage, will materially damage, or even destroy, other goods or the means of transport; they may also cause other hazards.
9	H10	Liberation of toxic gases in contact with air or water Substances or wastes which, by liberation with air or water, are liable to give off toxic gases in dangerous quantities.
9	H11	Toxic (delayed or chronic) Substances or wastes which, if they are inhaled or ingested or if they penetrate the skin, may involve delayed or chronic effects, including carcinogenicity.
9	H12	Ecotoxic Substances or wastes which if released present or may present immediate or delayed adverse impacts to the environment by means of bioaccumulation and/or toxic effects upon biotic systems.
9	H13	Capable of yielding another material which possesses H1–H12 Capable by any means, after disposal, of yielding another material, e.g. leachate, which possesses any of the characteristics listed above.
		Other reasons Potential to have a significant adverse impact on ambient air quality. Potential to have significant adverse impact on ambient marine, estuarine or fresh water quality.