Prestons Waste Treatment Facility
Amendment Report

Appendix G

Draft Operational air quality management plan

ARCADIS

Table of Contents

List of tables

List of figures

Glossary

Term	Definition
AAQIA	Addendum Air Quality Impact Assessment
ADR	Amendment Report
AQIA	Air Quality Impact Assessment
ASS	Acid sulfate soils
AWS	Automatic Weather Station
CCO	Chemical Control Orders
CLM Act	*Contaminated Land Management Act 1997*
DAF	Dissolved air flotation (DAF)
DCP	Development Control Plan
DPHI	Department of Planning. Housing and Infrastructure
EIS	Environmental Impact Statement
EMS	Environmental Management System
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environmental Protection Authority
EPL	Environmental protection licence
GLCs	Ground Level Concentrations
HiQ	HiQ Waste Treatment Services Pty Ltd
HVAC	Heating, ventilation air conditioning system
LWTP	Liquid Waste Treatment Plant
NEPM	National Environment Protection Measure
NGER Act	*National Greenhouse and Energy Reporting Act 2007*
OAQMP	Operational Air Quality Management Plan
OEMP	Operation Environmental Management Plan
PAH	Polycyclic aromatic hydrocarbons
POEO Act	*Protection of the Environment Operations Act 1997*
PFAS	Per- and poly-fluoroalkyl substances

Term	Definition
PM	Particulate matter
RtS	Response to Submissions
SSD	State Significant Development
TCE	Trichlorethylene
The Facility	9-13 Whyalla Place, Prestons NSW
Tpa	Tonnes per annum
TSP	Total suspended particulates
VOC	Volatile organic compounds
WHS	Work health and safety
WTF	Waste Treatment Facility

1 Introduction

1.1 Overview

[Drafting note: Section to be revised following approval]

HiQ Waste Treatment Services Pty Ltd (HiQ) has submitted a State Significant Development application (SSD 9346594) for the construction and operation of a Waste Treatment Facility (WTF / Facility) at 9-13 Whyalla Place, Prestons NSW (the Site) in accordance with Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The WTF is wholly owned by HiQ (Refer to Figure 1-1).

HiQ is seeking approval to optimise the existing site for the purpose of processing and treating contaminated soils, sludges and liquid wastes to a level suitable for reuse or disposal to a landfill or sewer, with a throughput capacity of up to 210,500 tonnes per annum (tpa). The approval seeks to expand the existing warehouse to a total floor area of about 6,500 m^2 (an increase of 1,300 m^2). This will be achieved through partial demolition of one external wall.

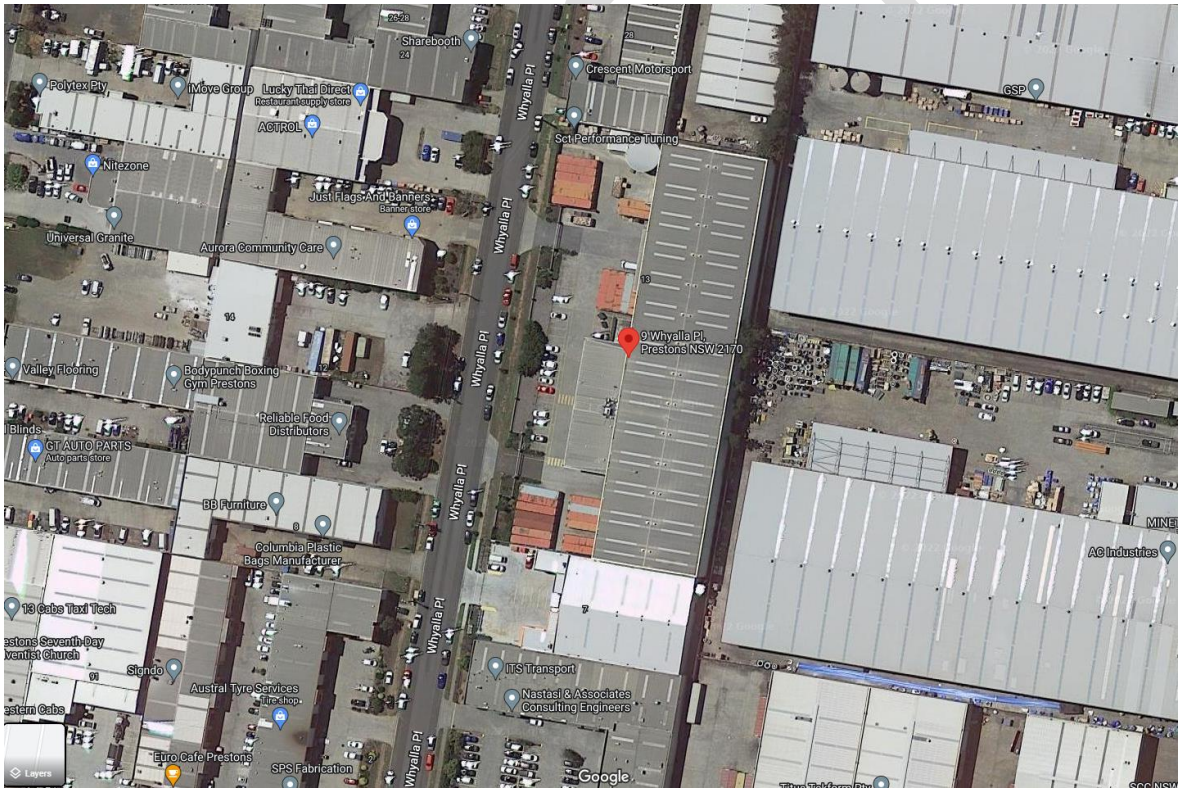

Figure 1-1: Project site (Source: Google Maps)

1.2 Scope and Objectives

[Drafting note: Section to be revised following approval]

This Operational Air Quality Management Plan (OAQMP) has been prepared to support the WTF Amendment Report and is a sub-plan to the Operational Environmental Management Plan (OEMP). The OAQMP will be used to guide the air quality management at the Facility during operation.

This OAQMP provides the framework and guidance for the Facility activities to be conducted in a manner whereby appropriate control measures are implemented to minimise the potential for adverse impacts on the environment and to meet compliance requirements of the approvals and licences.

The objectives of this OAQMP are to:

- Describe the relevant legislation, policies, guidelines and standards which apply to the operation of the WTF and which influence the environmental management principles and procedures to be used at the Facility
- Identify air quality management issues relating to the operation of the WTF
- Minimise potential dust emissions and control
- Address management of the heating, ventilation and air conditioning (HVAC)
- Provide a means of implementing appropriate air quality mitigation measures *[Drafting note: Determined by the Conditions]*
- Define roles and responsibilities for air quality management
- Provide a basis for monitoring, reporting and maintaining compliance.

This OAQMP has been prepared to provide the management measures to be implemented to minimise potential adverse impacts on the environment during the operation of WTF.

1.3 Interactions with other Environmental Management Plans

This OAQMP has the following interrelationships with other management plans and documents:

[Drafting note: Determined by the Conditions of Consent]

- Operational Environmental Management Plan that discusses the proposed waste facility processes
- Operational Waste Management Plan that discusses the management of waste treatment and processes and interactions with the HVAC and air emissions control system.

1.4 Consultation

[Drafting note: If required by the Conditions of Consent, this section will be updated to detail any of the required consultation.]

The OAQMP will be required to be approved by the Department of Planning, Housing and Infrastructure (DPHI) prior to operations commencing.

1.5 Key Performance Indicators

Air quality key performance indicators for the WTF are detailed in Table 1-1.

Table 1-1: Key Performance Indicators

Measure	Target	Timeframe	Responsibility	Documentation
Meeting relevant air quality criteria	Comply with relevant NSW EPA and EPL air quality criteria (see Section 5)	At all times	Site Manager Environmental Manager	Inspection Checklist
Visible dust emissions	Any emissions of visible dust investigated immediately. Review controls applied and increase controls or modify activities.	At all times	Site Manager Environmental Manager	Inspection Checklist
Complaints regarding air quality	Zero complaints. Any complaints would be investigated (Section 8.6.1)	At all times	Site Manager Environmental Manager	Complaints register
Meeting Project Approval Conditions regarding air quality	Compliance with conditions	At all times	Site Manager Environmental Manager	Inspection Checklist Audits

2 Facility Overview and Air Emissions Control System Operation

2.1 Facility Overview

The Facility is located in an existing IN3 Heavy industrial Zone. The nearest commercial receiver is Starfish Learn to Swim located 150 m to the north at 26-28 Whyalla Place, Prestons. The nearest residential receivers are located at 301 Hoxton Park Road, about 450 m north of the Facility.

Access to the Facility is via Hoxton Park Road, Liverpool into Whyalla Place. The surrounding arterial roads include the M7 Motorway to the west and Hume Highway to the east.

The Facility is approximately 9,100 m^2 and currently supports a warehouse building (~4,097 m^2) and 650 m^2 office facility. The existing warehouse includes Compartment 1.

Once upgraded the Facility will feature:

- An enclosed warehouse with a total floor area of 6,400 m^2 for unloading and handling of waste, with environmental controls, including an air extraction system
- An office building with office space and amenities for workers
- Three weighbridges facilitating a single-direction heavy vehicle flow of traffic
- An extension to the Facility to accommodate an additional two Compartments. The three distinct compartments will include:
  - Compartment 1: Waste treatment storage, transfer bays and treatment of soil, muds and sludges, as well as dewatering plant, water tanks, wheel wash, weighbridge, reagent storage and leachate collection pits.
  - Compartment 2: Liquid Waste Treatment Plan (LWTP) and reagent storage.
  - Compartment 3: Mobile plant and equipment, cement silo, storage of packaged waste and resource recovery materials storage area.
- Two 8-metre-wide driveways to Whyalla Place for use by heavy vehicles and a third driveway for light vehicles, allowing for direct access to the carpark, separated from heavy vehicles.

The Facility will house the HiQ Group head office within the existing office space at the Site.

A conceptual layout of the proposed Facility is provided in Figure 2-1.

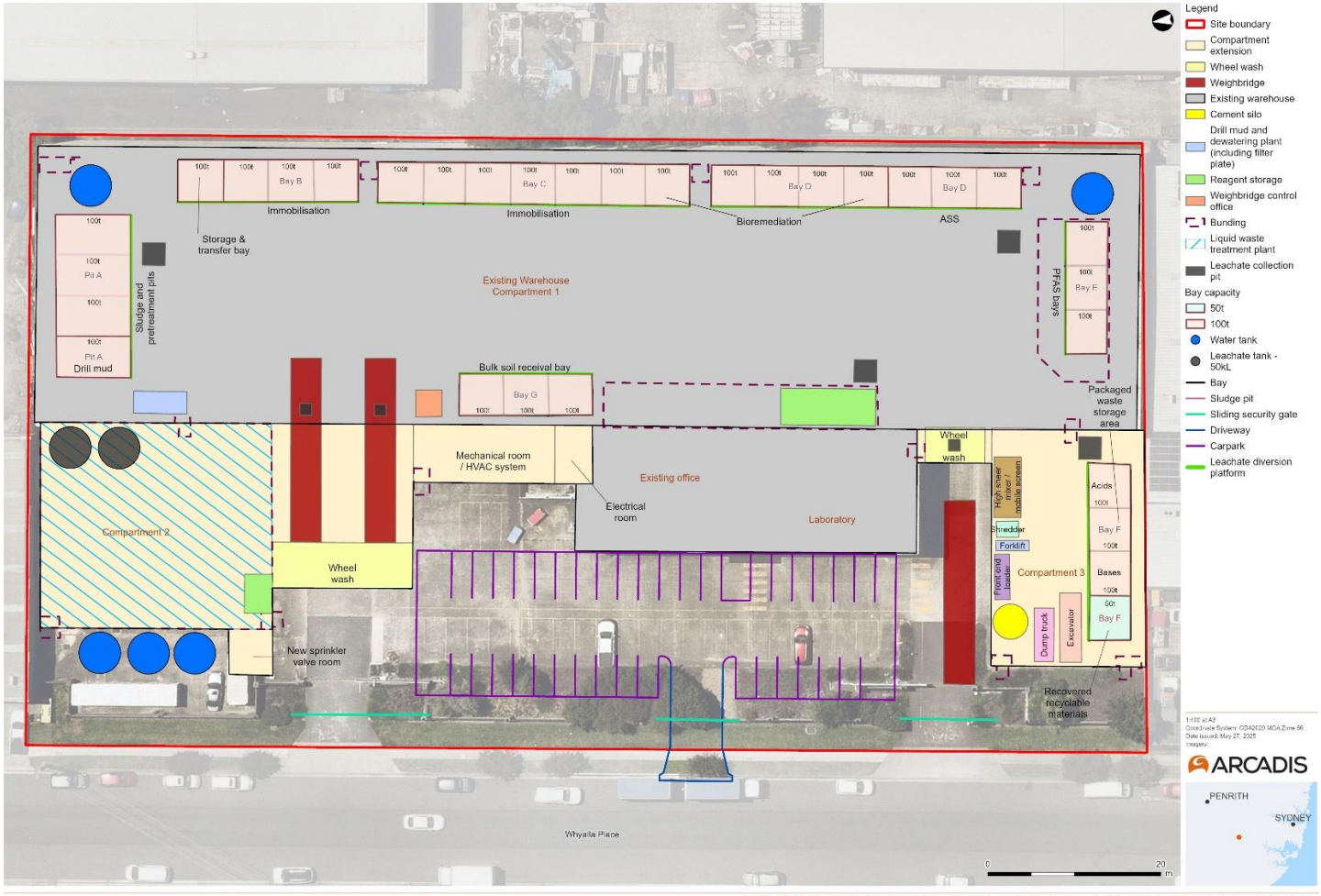

Figure 2-1: Conceptual Facility Layout {Drafting note: Figure to be updated as required during detailed design following project approval]

Facility operations will comprise of the following:

- Storage, classification and transfer of contaminated soil, including Acid Sulfate Soils (ASS) ASS/ Potential Acid Sulfate Soils (PASS)
- Storage, classification and transfer of packaged waste in intact containers
- Storage, classification, transfer and treatment of contaminated liquids and sludges
- Shredding of non-contaminated, inert packaged waste
- Treatment of contaminated soil by bioremediation
- Treatment of ASS
- Treatment of contaminated soil in accordance with both general and specific immobilisation approvals. Soil immobilisation may be undertaken using the mobile high shear mixer, at various locations within the building.
- Operation of the LWTP.

Further details of on-site operations are provided in Section 2 of the OEMP.

The following sections provide specific detail on the Facility components for management of air quality.

2.2 Air Emissions Control System

All air from inside the WTF building is drawn through an emissions control system and is treated prior to discharge. Air is drawn from each area (Compartments 1, 2 and 3) and is routed to the common inlet plenum for the HVAC emissions control system (Figure 2-1). This system includes the following components (in order of exhaust flow):

- Common inlet plenum serving Compartments 1 and 2
- Particulate Matter (PM) filter box
- Volatile Organic Compounds (VOCs) and odour filter box
- Common outlet plenum
- Three strobic exhaust fans operating in parallel.

The air emissions control system and strobic fans are located in, and on, the small compartment outside the "storage and transfer bays" along the western wall of Compartment 1 (see Appendix A).

Compartment 1 is served by a series of overhead vents along the north wall. These are designed to draw contaminated air from near the emitting activities and route this air to the common inlet plenum for the air emissions control system.

The maximum air exchange through the system will be 52.6 m^3/s vented from the building through the three strobic exhaust fans. Each fan is associated with an individual stack and therefore the flow rate through each ventilation outlet is 17.5 m^3/s. The following sections describe each component of the HVAC system.

2.2.1 HVAC System

The HVAC system design has been based on the ultimate building configuration and requires a number of air exchanges to provide fresh air and for human comfort, as well as maintaining a negative air pressure within the building to minimise fugitive air emissions.

The HVAC system includes:

- Smoke exhaust intakes
- Exhaust intakes above the material bays
- Outside air intakes, external to the building
- Installation of strobic air fans and ducting
- Fabric hoods / exhaust hoods above the material bays to be installed as the bays become operational
- Exhaust inlets (internal) and air intakes (external) to the northern building extension (for the LWTP compartment)
- A high-pressure centrifugal fan mounted on top of a cyclone filter unit for Fire Compartment 1 within the existing warehouse building structure.

The HVAC system features PM filters and Activated Carbon (AC) filters to remove volatile organic compounds (VOCs) and odours. These are described in the following sections.

2.2.2 PM Filter Box

The PM filter box will be equipped with a G4-rated, 30/30 Dual 10 high capacity disposable carboard pre-filter and an F7-rated, Hi-Flo spun glass high-capacity filter. The combined removal efficiencies for the two filters are calculated as 75% for $PM_{2.5}$, 95% for PM_{10} and 97.5% for Total Suspended Particulates (TSP).

2.2.3 VOCs and Odour Filter Box

The VOC and odour filter box will be equipped with VG440 molecular filters filled with Camfil's LGS048 media. The carbon based LGS048 media is tailored by the vendor for the removal of VOCs and odour.

2.2.4 Exhaust Ventilation Stacks (Strobic Fans)

The three exhaust ventilation stacks (strobic fans) service the HVAC system and the air emissions control system device for particulate matter and VOCs including an activated carbon chamber.

Following filtration, air will be discharged from the Facility using three vertical strobic fans located on the roof of the Facility at 11.7 m above ground level. The fans will be controlled dynamically, operating at higher flow rates when dusty or volatile materials are being delivered, handled or treated; the fans will be operated via an online application that monitors and controls all strobic fan ventilation levels and/or faults that may occur.

2.3 Operating Hours

The WTF receives waste 24 hours a day.

Processing and dispatch operations will be undertaken between:

- 7:00 am to 6:00 pm Monday to Saturday and
- 8:00 am to 6:00 pm Sundays and Public Holidays.

3 ENVIRONMENTAL REQUIREMENTS

Operation of the WTF is required to comply with all relevant legislation, permits, licences and development approvals that apply to the WTF.

This section provides an overview of the environmental planning and statutory context for the operations of the WTF. It also describes the WTF operations in the context of HiQ's corporate environmental and sustainability policies.

Compliance to applicable regulatory requirements concerning the operations of the WTF will be achieved through:

- Identifying and accessing legal and other requirements which are directly applicable to the organisation
- Consulting and involving relevant government agencies
- Internally communicating relevant information regarding legal and other requirements
- Continually auditing, reviewing and upgrading company systems, management plans and supporting documentation
- Providing relevant training.

3.1 Applicable Legalisation and Guidelines

The legislation, planning instruments and guidelines considered during development of this Plan are listed below with specific details provided in the Legislation Register within Section 3.2 of the OEMP.

- *Environmental Planning and Assessment Act (EP&A) 1979*
- Environmental Planning and Assessment Regulation (EP&A Reg) 2000
- *Protection of the Environment Operations (POEO) Act 1997*
- Protection of the Environment Operations (Clean Air) Regulation 2010
- *National Greenhouse and Energy Reporting (NGER) Act 2007*
- *Work Health and Safety Act 2011.*

Additional legislation, standards and guidelines relating to the management of air quality include:

- Environment Protection Licence [Drafting note: EPL to be obtained]
- *Approved methods for the modelling and assessment of air pollutants in New South Wales (NSW EPA, 2022)*
- *Approved methods for the sampling and analysis of air pollutants in New South Wales (NSW DEC, 2006)*
- *Technical framework: Assessment and management of odour from stationary sources in NSW (NSW DEC, 2006)*
- *Technical notes: Assessment and management of odour from stationary sources in NSW (NSW DEC, 2006).*

3.2 Development Consent

[Drafting note: This Section of the OAQMP will be updated following the issuing of the Conditions of Consent]

A summary of relevant Conditions of Consent (CoC) which relate to the development of an OAQMP is provided in Table 3-2. The table also provides and a cross reference to where the CoC has been addressed in the OAQMP.

Table 3-1: Relevant Conditions of Consent [Drafting note: To be updated once approval is received]

Condition #	Requirement	Where addressed
TBC	The Applicant must prepare an Operation Air Quality Management Plan (OAQMP) to the satisfaction of the secretary.	This Plan

3.3 Revised Environmental Management Measures

A summary of relevant Revised Environmental Management Measures (REMMs) which relate to the development of OAQMP is provided in Table 3-2. The table also provides and a cross reference to where the REMM has been addressed in the OAQMP.

Table 3-2: Anticipated REMMs relevant to the OAQMP

REMM	Requirement	Where addressed
G2	An Operational Environmental Management Plan (OEMP) will be prepared and implemented to guide environmental management and monitoring activities during operation as identified within the EIS in addition to further specific issues identified within the Table. Also refer to Section 16.2 of the EIS. Sub-plans to be prepared as part of the OEMP will include: • Operational Waste Management Plan • Operational Traffic Management Plan • Operational Noise and Vibration Management Plan • Operational Air Quality Management Plan • Stormwater and Leachate Management Plan • Emergency Response Plan. The OEMP will be reviewed annually or more frequently on an as needed basis should there be a change in risk, legislative requirements, or non-compliance.	This Plan
AQ2	An Operational Air Quality Management (OAQMP) plan will be developed for the Proposal. The OAQMP will:	This Plan
	• Establish procedures to routinely maintain and test operation of the Heating Ventilation and Air Conditioning (HVAC) and emissions control systems	Section 2.2 Section 7.1

REMM	Requirement	Where addressed
	• Establish procedures for air quality monitoring	Section 8.3 Section 9.2
	• Minimise the fugitive emissions from the Site	Section 7.2 Section 8.3
	• Identify contingency measures to minimise air quality impacts in the event of failure of the HVAC and emissions control systems	Section 9.2
	• Prevent idling of mobile plant and haul trucks when not in use	Section 7.3
	• Material loading / unloading and handling procedures designed to reduce fugitive dust emissions, e.g. high-speed roller-doors required to be closed during material loading / unloading and handling.	OWMP Section 7.1 Section 7.2
AQ3	Emissions control devices will be operated according to their manufacture's specifications.	Section 7.1
AQ4	Regular preventative maintenance of emissions control devices according to their manufacture's specifications will be carried out.	Section 7.1
AQ5	A truck and wheel wash station at the WTF exit will be installed to reduce soil track-out and generation of fugitive dust outside the building envelope.	Section 7.2 Figure 2-1
AQ6	The need for fogging suppression systems, where deemed necessary, will be determined during detailed design. This potentially includes Compartment 3 Treatment Bays and other areas as needed.	Section 7.1 Table 7-1
AQ7	Compartment 3 on/off switches will be used to focus air collections in the active 1 of 5 Treatment Bays being used for stockpile bay hood to collect, and send for treatment, approximately 95% of the total air flow through the space.	Section 7.1 Table 7-1
AQ8	Fabric side curtains and front drop curtain to 4 m will be installed on the Bioremediation Bays and will be used to contain minor contaminant generation from handling and turning process.	Section 7.1 Table 7-1
AQ9	The building compartments will be maintained at > -5 Pascals (Pa) while in 'daily treatment mode'. When in 'after hours mode', the building exhaust air system from each compartment shall be reduced and associated outside air inlet dampers closed off to maintain > -5 Pa whilst saving energy.	Section 7.1 Table 7-1

REMM	Requirement	Where addressed
AQ10	To validate the model predictions from the Addendum Air Quality Impact Assessment (AAQIA) (Appendix E of the RtS), it is proposed that post-commissioning stack testing be undertaken during the first year of operation of each Stage. This post-commissioning testing will include: • Stack testing upstream and downstream of the air emissions control system to validate the manufactures-stated PM and VOC removal efficiencies. • Stack testing for size resolved PM ($PM_{2.5}$ and PM_{10}) and a metals in PM assay while treating bulk soils or wastes containing heavy metals. • Stack testing for VOCs or odour while treating wastes containing hydrocarbons, industrial solvents and/or odorous wastes. If post-commissioning stack testing indicates the model predictions are conservative, then stack testing will be repeated on a once-in-three years basis.	Section 8.3
AQ11	If post-commissioning testing indicates that there is the potential for air impacts, then fenceline or local air quality monitoring is proposed to be undertaken. This air quality monitoring could include, but may not be limited to, the following: • Size resolved fenceline particulate matter monitoring ($PM_{2.5}$ and PM_{10}) • Dust deposition gauge monitoring • Hydrocarbon or VOC monitoring • Total reduced sulfur compound or odour monitoring.	Section 8.3.1
AQ12	Energy consumption associated with the generation of greenhouse gas (GHG) for the Project will be limited by the following mitigation measures:	Section 7.3
	• Use of fuel-efficient machinery, equipment, and plant	Section 7.3
	• Consider energy rating when purchasing new machinery and equipment	Section 7.3
	• Implementing a maintenance plan for fuel and electricity powered machinery and equipment	Section 7.3
	• Training to and implementing energy conservation practices by all staff	Section 8.9

REMM	Requirement	Where addressed
	• Consider use of solar energy where feasible.	Section 7.3

3.4 Permits and Licences

A summary of the key permits and licences applicable to the WTF in relation to air quality, in addition to the CoC and REMMs is provided in Table 3-3.

Table 3-3: Key permits and licences

Licence / Permit Number	Licence	Regulator	Issued Date	Review Date
TBC	Environment Protection Licence (EPL)	NSW EPA	TBC	TBC
TBC	Trade Waste Agreement	Sydney Water	TBC	TBC

4 EXISTING ENVIRONMENT

The following sections summarise the known factors influencing air quality within and adjacent to the Facility. The key reference documents include:

- Section 10 of the P*restons WTF Environmental Impact Statement* (Golder, 2021)
- *Prestons WTF Response to Submissions Report* (Arcadis, 2022)
- *Addendum Air Quality Impact Assessment* (Zephyr, 2022).

4.1 Meteorological Conditions

The closest meteorological station to the Facility is the Department of Planning and Environment (DPE) Automatic Weather Station (AWS) (ID: 94760) located at Liverpool, approximately two kilometres to the east.

A representative meteorological dataset was chosen by analysing the most recent six years' worth of data from the Liverpool AWS. Annual and seasonal windroses were compiled for six years from 2016 to 2021 and are presented in Figure 4-1.

This analysis shows that wind speed and direction are reasonably consistent from year to year, and that 2021 is a representative year. Winds are predominantly light and from the southwestern quadrant, with stronger winds from the western and eastern quadrants.

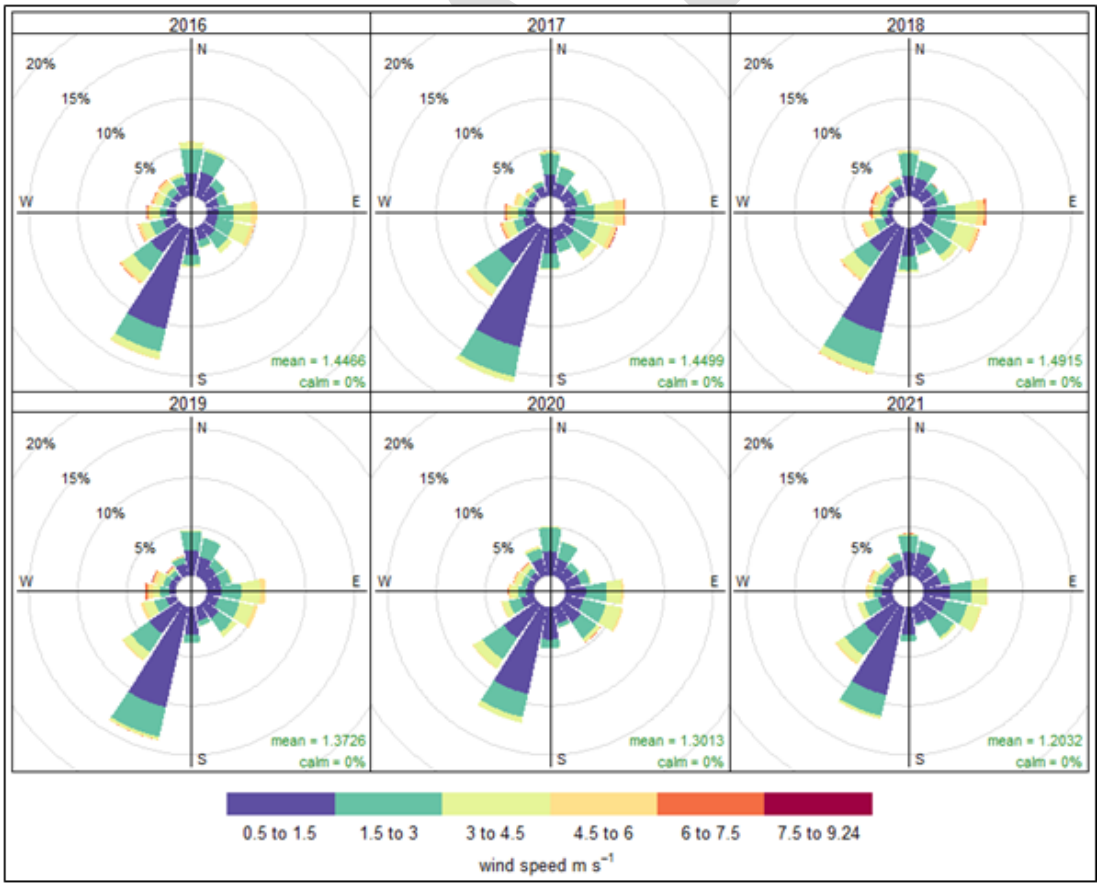

Figure 4-1: Annual windroses 2016-2021 at Liverpool Automatic Weather Station

4.2 Ambient Air Quality

PM_{10} and $PM_{2.5}$ data is collected at a number of sites in the area as part of the DPE monitoring network in NSW. The most representative of these sites is Liverpool.

Table 4-1 presents the annual average PM_{10} and $PM_{2.5}$ concentrations at Liverpool from 2016 to 2021. The 2018 and 2019 concentrations are clearly impacted by the state-wide prolonged drought and extreme bushfires across large parts of NSW during this period. These years are not considered representative of general ambient conditions.

Table 4-1: Annual average PM_{10} and $PM_{2.5}$ concentrations at Liverpool (DPE, 2021)

Year	PM_{10}	$PM_{2.5}$
2016	19.5	8.8
2017	20.6	8.9
2018	24.2	10.1
2019	27.7	12.8
2020	20.8	9.1
2021	18.1	7.9

4.3 Sensitive receptors

As detailed in Section 10 of the EIS, model predictions were made at 12 discrete sensitive receptors near the WTF and at receptors further removed to understand the dispersion patterns. Table 4-2 lists these 12 sensitive receptors and the locations are shown in Figure 4-2.

Table 4-2: Sensitive receptors (Golder, 2021)

Sensitive receptor	MGA location (m)	Type	Address
SR1	303614, 6243619	Hotel	Mercure Sydney Liverpool, Hoxton Park Road, Prestons
SR2	304017, 6243869	Residential	315 Hoxton Park Road, Cartwright
SR3	304149, 6243878	Residential	303 Hoxton Park Road, Cartwright
SR4	304244, 6243884	Residential	295 Hoxton Park Road, Cartwright
SR5	304681, 6243910	Residential	255 Hoxton Park Road, Cartwright
SR6	305180, 6243365	School	Lurnea Public School, Lurnea
SR7	305013, 6243011	Residential	42 Jedda Road, Lurnea

Sensitive receptor	MGA location (m)	Type	Address
SR8	305173, 6242887	Residential	18 Morrison Drive, Lurnea
SR9	305245, 6242806	Residential	8 Wheeler Avenue, Lurnea
SR10	303935, 6243470	Commercial	Starfish Learn to Swim, 26-28 Whyalla Place, Prestons
SR11	304037, 6243744	Place of worship	The Potter's House Christian Church, 1/45-47 Whyalla Place, Prestons
SR12	304290, 6243670	Place of worship	JRM Sydney, 2 Ash Road, Prestons

Figure 4-2: Location of sensitive receptors (Zephyr, 2021)

5 AIR QUALITY CRITERIA

5.1 Particulate Matter Criteria

As detailed in Air Quality Impact Assessment in the EIS, the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2022) lists the statutory methods for modelling and assessing emissions of air pollutants from stationary sources in NSW. The particulate matter criteria applicable to the operation of the WTF are presented in Table 5-1.

Table 5-1: Particulate matter criteria based on NSW EPA air quality impact assessment criteria (EPA, 2022)

Pollutant	Averaging period	Goal
Particulate Matter (PM_{10})	Maximum 24-hour	50 ug/m^3
	Annual	25 ug/m^3
Particulate Matter ($PM_{2.5}$)	Maximum 24-hour	25 ug/m^3
	Annual	8 ug/m^3

5.2 Metals and Other Pollutants Criteria

Table 5-2 details the air quality monitoring for other pollutants for operation of the Facility. This is based on the *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (EPA, 2022).

Table 5-2: Metals and other pollutants criteria based on NSW EPA air quality impact assessment criteria (EPA, 2022)

Pollutant	Averaging period	Goal
Total suspended particulates (TSP)	Annual	90 ug/m^3
Arsenic and compounds (As)	1-hour (99.9th percentile)	0.09 ug/m^3
Chromium VI compounds (Cr)	1-hour (99.9th percentile)	0.09 ug/m^3
Lead (Pb)	Annual	0.5 ug/m^3
Benzene	1-hour (99.9th percentile)	29 ug/m^3
Trichloroethylene (TCE)	1-hour (99.9th percentile)	500 ug/m^3
PFAS[1]	24 hour	0.07 mg/m^3

[1] There is no NSW or Australian ambient air quality criteria for PFAS compounds. Therefore, this assessment has been based upon the Air Quality Division of Michigan's (USA) Department of Environment, Great lakes and Energy, a health based screening level for PFAS of 0.07 mg/m3 for a 24 hour averaging period has been adopted.

5.3 Odour Criteria

The AAQIA (Zephyr, 2022) prepared to support the RtS in September 2022, included a quantitative odour assessment. It describes that dynamic olfactometry is typically used as the basis of odour management by regulatory authorities, as currently, there are no instrument-based methods that can suitably quantify an odour response.

This method involves presenting odorous air to a panel of people with decreasing quantities of clean odour-free air, that is, an increasing concentration of odour. The panellists then note when the smell becomes detectable. The correlations between the known dilution ratios and the panellists' responses are then used to calculate the number of dilutions of the original sample required to achieve the odour detection threshold. The units for odour measurement using dynamic olfactometry are odour units (OU) which are dimensionless.

The EPA (2017) has developed odour goals and the way in which they should be applied with dispersion models to assess the likelihood of nuisance impact arising from the emission of odour. The term "level of exposure" has been used to reflect the fact that odour impacts are determined by several factors the most important of which are the so-called FIDOL factors:

- **F**requency of the exposure
- **I**ntensity of the odour
- **D**uration of the odour episodes
- **O**ffensiveness of the odour
- **L**ocation of the source.

The EPA Approved Methods include ground-level concentration criteria for complex mixtures of odorous air pollutants. Table 5-3 lists the odour thresholds, not to be exceeded more than 1% of the time, for different population densities. The two odour concentration criterion, the most stringent, has been adopted to assess the odour impact for the addendum AQIA.

Table 5-3: NSW EPA odour criteria (EPA, 2022)

Population of affected community	Odour performance criteria (nose response odour units at the 99th percentile)
Single rural residence (≤ ~2)	7
~10	6
~ 30	5
~ 125	4
~ 500	3
Urban (~ 2000) and/or schools and hospitals	2

5.4 Greenhouse Gas Emissions

A greenhouse gas emissions (GHG) assessment was completed for the EIS (Appendix O of the EIS). This considered Scope 1 emissions from the combustion of diesel fuel by equipment and plant and Scope 2 emissions from the consumption of electricity sourced from the NSW grid.

The total annual GHG for the Facility are estimated at 3,639 t CO_2/year. Therefore, the Facility does not meet the National Greenhouse Energy Rating (NGER) facility-level reporting threshold as potential emissions are considered low.

6 OPERATIONAL AIR QUALITY IMPACTS

6.1 Risk Assessment

As per HiQ's Health, Safety, Environment and Quality (HSEQ) system, a summary of the key potential air quality risks is provided in Table 6-1.

Risk assessments are required prior to commencing any previously unforeseen activities at the Facility.

Table 6-1: Environmental Risk Assessment and Management Actions

Operational Activity	Environmental Aspect	Potential Environmental Impact
Waste disposal/treatment	• Wheel generated dust emissions from plant movements and windblown dust from stockpiling and processing • Increased GHG emissions from plant operation • Air contaminants released and mixing on Site • Health impacts from exposure to contaminants during operation.	Air quality Climate change
HVAC Air Emissions Control System	• Treatment of air quality within Facility • Air quality emissions exceedances • Health impacts from increased air emissions and contaminants to receiving receptors.	Air quality
Plant and vehicle maintenance and movements, truck parking and refuelling	• Wheel generated dust emissions from plant movements • Increased GHG emissions from plant and operations emissions impacting upon air quality and increasing contribution to greenhouse gas emission during operation. • Dust, air pollutants and odours from waste during operation.	Air Quality Climate Change
Administration	• Increased GHG emissions from electricity consumption from lighting and air conditioning.	Climate Change

6.2 Operational Air Emissions

This section outlines the potential sources of air pollutants and the air quality impacts which may be associated with the operation of the WTF as detailed in EIS, AQIA (Golder, 2021) and AAQIA (Zephyr, 2022).

The potential air emissions generated from the handling and treatment of bulk soils at the WTF may include:

- Particulate matter (dust) smaller than 2.5 micrometres in aerodynamic diameter ($PM_{2.5}$)
- Particulate matter smaller than 10 micrometres in aerodynamic (PM_{10})
- Total suspended particulate matter (TSP)

- Metal in dust (5 w/w% of metals in PM_{10} including toxic metals arsenic (As), chromium (Cr) and lead (Pb)
- VOCs including halogenated hydrocarbons comprising of either benzene or trichloroethylene
- PFAS compounds in bulk soils or liquids in particular bound maximum permissible PFAS content of 50 mg/kg in solids (DCCEEW, 2020).

These are described in further detail in the following sub-sections.

6.2.1 Particulate Matter

The maximum predicted ground level concentration of pollutants and individual toxic pollutants generated by the WTF were each modelled outside the Facility boundary at gridded sensitive receptors in the AAQIA prepared to support the RtS in September 2022 (Zephyr, 2022).

Table 6-2 presents the potential air quality results for the closest sensitive receptors, showing the contributions from the WTF. Figure 6-1 and Figure 6-2 present the predicted 24-hour PM_{10} and $PM_{2.5.}$ concentrations, respectively. The annual average predictions for PM_{10} and $PM_{2.5}$ are presented in Figure 6-3 and Figure 6-4.

These results show that the predictions are very low and unlikely to be discernible above background. The contribution from the WTF is not predicted to cause any exceedances of the annual criteria or any additional exceedances of the 24-hour criteria when added to the highest (non-exceeding) background concentrations noted in Section 5.3.

Table 6-2: Air quality results at sensitive receptors (Zephyr, 2022)

Sensitive Receptor	24-hour average		Annual average	
	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
	50 µg/m³	25 µg/m³	25 µg/m³	8 µg/m³
SR1	0.074	0.056	0.010	0.008
SR2	0.096	0.072	0.008	0.006
SR3	0.113	0.085	0.008	0.006
SR4	0.063	0.047	0.007	0.005
SR5	0.058	0.044	0.006	0.004
SR6	0.029	0.022	0.003	0.002
SR7	0.030	0.022	0.003	0.002
SR8	0.032	0.024	0.002	0.002
SR9	0.032	0.024	0.002	0.002

Sensitive Receptor	24-hour average		Annual average	
	PM_{10}	$PM_{2.5}$	PM_{10}	$PM_{2.5}$
	50 µg/m³	25 µg/m³	25 µg/m³	8 µg/m³
SR10	0.195	0.147	0.037	0.028
SR11	0.130	0.098	0.012	0.009
SR12	0.120	0.091	0.013	0.010

Figure 6-1: Predicted maximum 24-hour average PM_{10} concentration at the WTF (ug/m³) (Zephyr, 2022)

Figure 6-2: Predicted maximum 24-hour average $PM_{2.5}$ concentration at the WTF (ug/m^3) (Zephyr, 2022)

Figure 6-3: Predicted annual average PM_{10} concentration at the WTF (ug/m^3) (Zephyr, 2022)

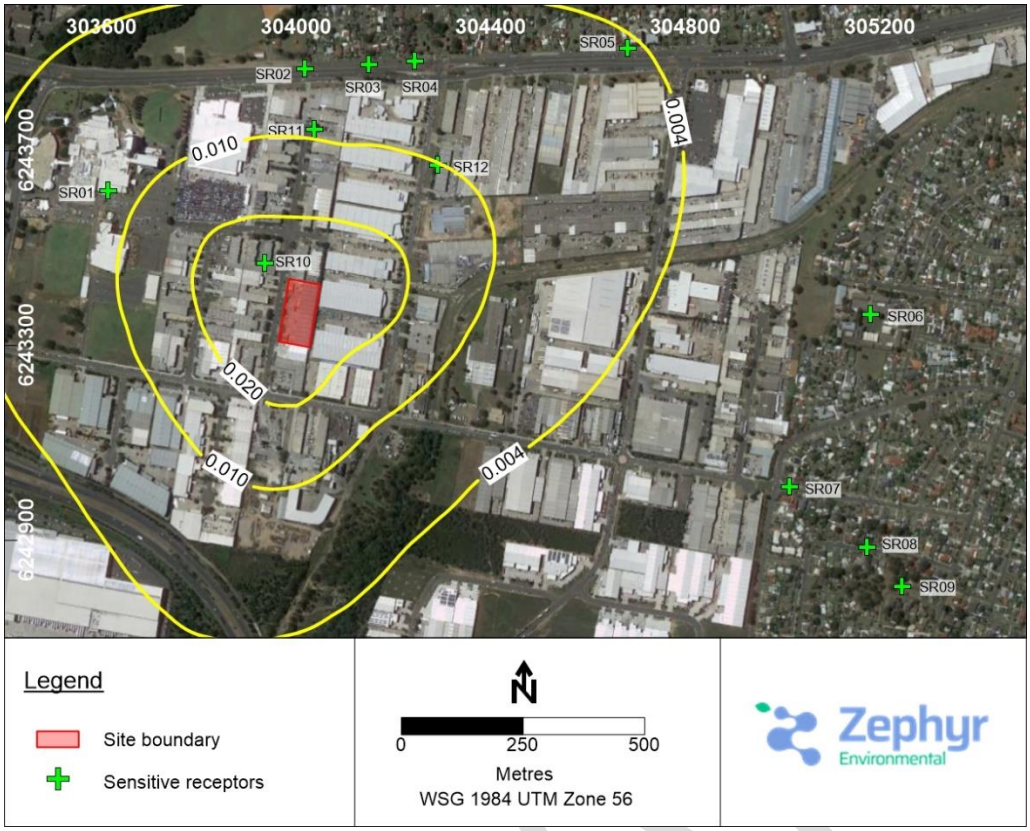

Figure 6-4: Predicted annual average $PM_{2.5}$ concentration at the WTF (ug/m^3) (Zephyr, 2022)

6.2.2 Metals and Other Pollutants

The AAQIA determined the predicted 1-hour 99th percentile concentrations (µg/m^3) of Arsenic, Chromium and Lead to be well below the prescribed criteria from the NSW EPA *Approved Methods for the Modelling and Assessment of Air Pollutants in New South Wales* (Zephyr, 2022; EPA, 2022). Table 6-3 presents the heavy metal predictions for each sensitive receptor.

Table 6-3: Predicted metal concentration (ug/m^3) (Zephyr, 2022)

Sensitive Receptor	1-hour 99.9th percentile		Annual average
	As	Cr (as Cr VI)	Pb
	0.09 µg/m^3	0.09 µg/m^3	0.5 µg/m^3
SR1	0.00084	0.00843	0.00003
SR2	0.00085	0.00853	0.00003
SR3	0.00090	0.00903	0.00003
SR4	0.00083	0.00831	0.00002
SR5	0.00072	0.00720	0.00002
SR6	0.00070	0.00698	0.00001

Sensitive Receptor	1-hour 99.9th percentile		Annual average
	As	Cr (as Cr VI)	Pb
	0.09 µg/m³	0.09 µg/m³	0.5 µg/m³
SR7	0.00056	0.00562	0.00001
SR8	0.00059	0.00590	0.00001
SR9	0.00055	0.00545	0.00001
SR10	0.00215	0.02150	0.00012
SR11	0.00107	0.01066	0.00004
SR12	0.00111	0.01107	0.00005

6.2.3 Odour

The AQIA stated that the ventilation stacks serve as an air emissions control device that include filters to reduce particulate matter emissions and activated carbon to reduce emissions of VOCs and odour.

A quantitative odour assessment in AAQIA (Zephyr, 2022) determined that all receptors are below the criterion. Table 6-4 presents the odour predictions for each of the 12 specific sensitive receptors. These results show that the predictions are very low and all below the two odour concentration criterion. For the majority of sensitive receptors the predictions are below one odour concentration criterion, the theoretical level of detection.

Table 6-4: Predicted 99th percentile, 1-second average odour concentration (Zephyr, 2022)

Sensitive receptor	Odour concentration (OU)
SR1	< 1
SR2	< 1
SR3	< 1
SR4	< 1
SR5	< 1
SR6	< 1
SR7	< 1
SR8	< 1
SR9	< 1
SR10	< 2
SR11	< 1
SR12	< 1

7 AIR QUALITY MANAGEMENT AND IMPLEMENTATION

This section addresses the key air quality management and environmental performance issues associated with the operation of the WTF and the environmental controls established to manage the key risks.

7.1 HVAC and Air Quality Emissions Systems and Ventilation

As described in Section 2.2, air in the Facility is drawn through an HVAC system and air emissions control system for each compartment to minimise fugitive emissions. Each bay will contain a single stockpile bay hood where air is collected and treated. The single stockpile bay hood will collect and send for treatment, approximately 95% of the total air flow through the space.

Each compartment will be treated differently including:

- Compartment 1: Compartment 1 is served by a series of overhead vents along the north wall. These are designed to draw contaminated air from near the emitting activities and route this are to the common inlet plenum for the air emissions control system.
- Compartment 2: VOC and odour emissions will be potentially generated by the LWTP in Compartment 2 while treating hydrocarbon or solvent contaminated liquids. The LWTP is a sealed vessel, so VOCs and odour capture efficiency are predicted to be high. VOC and odour emissions captured in this area are routed directly to the common inlet plenum for the air emissions control system.
- Compartment 3: Treatment processes may potentially generate fugitive dust emissions when the high shear mixer (Reterra) is used to treat bulk soils and sludge in Compartment 3. This will be minimised by using a covered feed belt when transferring materials from the Reterra unit to the storage bays and increasing the moisture content in the material using sprays and/or misting. All emissions from Compartment 3 are routed directly to a dedicated fitter cartridge-based dust controller (Camfil Model GSX48). The dust collector has a manufacturer stated PM removal efficiency of 99.99% or particles down to 0.5 micrometres in geometric diameter.

The HVAC system will be operational during waste delivery, loading and unloading to manage emissions and air quality within the Facility. Overall, the HVAC system and air emissions control system will include two different modes of operation to manage air flow including:

- Daily treatment mode: Maintained > -5 Pa
- After hours mode: Reduced exhaust air and air inlet dampers will be closed off to maintain > - 5 PA.

The air emissions control system will be operated in accordance with the manufacturer's specifications by operational staff at all times and can be managed remotely to the conditions of the Facility by operating staff. The following controls will be implemented to contain any potential contaminant and/or air quality emissions within the Facility:

- Use of vents
- Sealed vessels
- Vapour recovery system
- Operational air quality management procedures.

Preventative maintenance of the air emissions control system and devices will be carried out in accordance with the manufacturer's specifications; however, maintenance of the HVAC system will be undertaken every three months.

Strobic fan stack testing will also be carried out to validate the manufacturer's stated efficiencies. This further described in Section 8.3.

7.2 Traffic Movements, Material Unloading and Handling

As described in Section 7.2 of the EIS, potential air quality impacts associated with traffic movement, material unloading and handling are generally driven by wheel generated dust emissions associated with heavy vehicle movements.

All material unloading, transfer, storage, sorting and loading activities will be undertaken within the enclosed building and any potential emissions including plant and equipment emissions, dust emissions and contaminated air will be ducted via the HVAC and air emissions control system as described in Section 2.2 and Section 7.1. This will ensure that the integrity of the building is maintained, and that cross ventilation and fugitive dust emissions are minimised.

7.2.1 Traffic mitigation measures

The following control measures will be followed to aim to minimise the risk of generated dust emissions by vehicle and plant and equipment operations, including:

- All trucks will be unloaded inside the Facility
- All trucks, skips and other storage vessels within the Facility will be required to keep their load covered until such time as they are ready to unload
- The roller door will be kept closed when unloading material
- Moisture content (i.e. sprays and mists) will be increased following the treatment processes within the high shear mixer to minimise any potential fugitive dust emissions
- Treated materials will be transferred to the storage bays via the covered feed belt on the high shear mixer
- A truck wheel wash is located at the Facility exit. Each heavy vehicle will be required to exit through the truck wheel wash to prevent the generation of fugitive dust and track-out of dust outside the building envelope. The wastewater from the wheel wash will be collected and processed through the LWTP
- Paved roads onsite will be maintained within the Facility
- Stockpiles will be located within the enclosed Facility with dust extraction, suppression and air emissions control system
- A street sweeper will be available onsite at all times to clean paved roadways, hardstand areas and driveways, if required.

7.3 Greenhouse Gas Emissions

A GHG emissions assessment was completed for the EIS (Appendix O of the EIS), identifying that the project will not meet the NGER facility-level reporting threshold as potential emissions were considered low (see Section 5.4). As a preventative measure to minimise greenhouse gas emissions, plant and equipment emissions will be considered during operation of the WTF.

7.3.1 GHG mitigation measures

This will include the following measures:

- The energy rating will be considered when purchasing new machinery and equipment
- Fuel-efficient machinery, equipment, and plant will be used in operation of the Facility
- Vehicles will be maintained and operated in accordance with manufacturer's guidance to minimise emissions
- Plant and equipment will be turned off when not in use to conserve power
- A maintenance plan will be prepared for fuel and electricity powered machinery and equipment
- The use of solar energy will be considered, where feasible.

7.4 Management Measures

HiQ will assess and manage risks to comply with the criteria and management measures outlined within the CoC and REMMs [Drafting note: To be reviewed once CoC and REMMs are received]. Where any exceedance of these criteria and/or performance measures occurs, at the earliest opportunity, HiQ will:

- Take all reasonable and feasible measures to ensure that the exceedance ceases and does not recur
- Consider all reasonable and feasible options for remediation
- Implement remediation measures.

Management actions prescribed by this OAQMP aim to avoid and minimise impacts on air quality and odour are summarised in Table 7-1.

Table 7-1: Air quality management measures

Number	Management Measures	Timing	Responsibility	Evidence	Reference
Air Emissions Control System					
AQ1	Potential particulate matter, VOC and odour emissions will be minimised by using engineering controls including: • Use of vents • Sealed vessels • Vapour recovery systems • Operational air quality management procedures.	Operation	Site Manager Environmental Manager	Air quality monitoring Operational procedures	REMM AQ2
AQ2	Emission control devices will be operated in accordance with manufacturer's specifications and preventative maintenance will be carried out on in accordance with the manufacturer's guidelines. This will be detailed in the Maintenance Plan.	Operation	Site Manager Operational Staff	Inspection Checklist Maintenance Plan	REMM AQ3 REMM AQ4
AQ3	The HVAC control system (Compartment 2 on/off switches) stockpile bay hood will collect and send for treatment approximately 95% of the total air flow through the space above bays where waste is being discharged from the mobile high sheer mixer. Fogging systems (i.e. sprays and mist) will be implemented in Compartment 3 as necessary.	Operation	Site Manager Operational Staff	Inspection Checklist	REMM AQ2 REMM AQ6 REMM AQ7
AQ4	Fabric side and front drop curtain to four metres will be installed on the Bioremediation Bays to contain minor contaminant generation from handling and turning process	Operation	General Manager	Inspection Checklist	REMM AQ8
AQ5	Building compartments will be maintained at > -5 Pa while in 'daily treatment mode'. When in 'after hours mode', the building exhaust air system from each compartment will be reduced and associated outside air inlet dampers closed off to maintain > -5 Pa whilst saving energy.	Operation	Site Manager Operational Staff	Inspection Checklist	REMM AQ9

Number	Management Measures	Timing	Responsibility	Evidence	Reference
Plant and Equipment					
AQ6	Mobile plant and haul trucks will be turned off when not in use	Operation	Site Manager	Inspection Checklist	REMM AQ2
AQ7	The high-speed roller-doors will be closed during material loading/unloading and handling to minimise potential fugitive dust emissions	Operation	Operational Staff	Inspection Checklist	REMM AQ2
AQ8	A truck and wheel wash will be located at the Facility exit to reduce soil track-out and generation of fugitive dust outside the building envelope.	Operation	Site Manager Operational Staff	Inspection Checklist	REMM AQ2 REMM AQ5
Monitoring and Maintenance					
AQ9	Stack testing will be undertaken to validate manufacturers stated efficiencies within the first year of operation. If post-commissioning stack testing indicates the model predictions are conservative, then stack testing will be repeated on a once-in-three years basis.	Operation	Site Manager Environmental Manager	Stack Testing Records	REMM AQ10 REMM AQ11
AQ10	If there is the potential for air impacts following post-stack testing, then fenceline or local air quality monitoring is proposed to be undertaken. This air quality monitoring could include, but may not be limited to, the following: • Size resolved fenceline particulate matter monitoring ($PM_{2.5}$ and PM_{10}) • Dust deposition gauge monitoring • Hydrocarbon or VOC monitoring • Total reduced sulfur compound or odour monitoring.	Operation	Site Manager Environmental Manager	Ambient monitoring program	REMM AQ11 Section 8.3

Number	Management Measures	Timing	Responsibility	Evidence	Reference
AQ11	Air quality monitoring will be conducted to ensure that the engineering controls of the HVAC system and air emissions control system are working correctly and effectively to prevent worker exposure to potential air contaminants within the first year of operation.	Operation	Environmental Manager	Ambient monitoring program	REMM AQ11
Training					
AQ12	Ongoing education and awareness will be provided through the Health & Safety Committee, personal monitoring result discussions, safety alerts and toolbox meetings.	Operation	Site Manager Environmental Manager	Training records Toolbox talks	HiQ EMS
AQ13	Task based training will be provided and include a competency assessment process with personnel not being permitted to work unsupervised until deemed competent.	Operation	Site Manager	Training records	HiQ EMS
Greenhouse Gas Emissions					
AQ14	As a preventative measure, energy consumption associated with the generation of GHG will be minimised including: • The energy rating will be considered when purchasing new machinery and equipment • Fuel-efficient machinery, equipment, and plant will be used in operation of the Facility • Vehicles will be maintained and operated in accordance with manufacturer's guidance to minimise emissions • Plant and equipment will be turned off when not in use to conserve power • A maintenance plan will be prepared for fuel and electricity powered machinery and equipment • The use of solar energy will be considered, where feasible.	Prior to operation Operation	Site Manager Environmental Manager	Maintenance Plan	MM AQ12

8 COMPLIANCE MANAGEMENT

8.1 Roles and Responsibilities

The General Manager for HiQ carries ultimate responsibility for the implementation of this OAQMP and providing the necessary resources as required.

The Site Manager is responsible for coordinating the monitoring, reporting and responsibility requirements of this Plan.

Operational employees and/or contractors are responsible for responding to adverse site conditions and adjusting site operations to minimise environmental impacts. All site employees and/or contractors are responsible for reporting adverse site conditions to the Site Manager, who is responsible for review and formulation of appropriate action planning and response.

Further details related to roles and responsibilities are detailed in Section 5.3 of the OEMP.

8.2 Environmental Inspections

The Environmental Manager will undertake monthly environmental inspections of the Facility using the HiQ Environmental Inspection Checklist. This will include specific air quality and odour aspects including:

- Visual surveillance for dust emissions or sediment tracking off-site
- Inspection of dust controls to ensure effective implementation
- Investigation in response to recurring or major complaints, or authorised agency request, regarding exceedance of air emissions
- Facility entry/ exit integrity to minimise dust tracking onto the street
- Plant / equipment inspections including maintenance logs and emissions
- Maintenance logs for HVAC and air emissions control systems
- Vehicles switched off when not in use to minimise emissions
- Odour monitoring at site boundary.

Any non-compliances will be recorded, and action plans or improvement plans developed. Action and/or improvement plans will be recorded within the HiQ Rapid system with tasks/actions and timeframe for completion assigned to a relevant employee for close out and completion.

8.3 Environmental Monitoring

The CoC and the EPL will identify monitoring regimes which will need to be complied with. *[DRAFTING NOTE: This Section will be updated following the Approval of the Project].* The Environmental Manager will undertake the relevant monitoring requirements.

8.3.1 Air Quality Monitoring

Stack testing will be conducted within the first year of operation in accordance with REMM AQ10 to ensure that the engineering controls of the HVAC system and air emissions control system are working correctly and effectively to prevent worker exposure to potential air contaminants.

To validate the model predictions from the RtS AQIA, post-commissioning stack testing will be undertaken during the first year of operation. This post-commissioning stack testing will include:

- Upstream and downstream testing of the air emissions control system to validate the manufactures-stated PM and VOC removal efficiencies
- Testing for size resolved PM ($PM_{2.5}$ and PM_{10}) and a metals in PM assay while treating bulk soils or wastes containing heavy metals
- Testing for VOCs or odour while treating wastes containing hydrocarbons, industrial solvents and/or odorous wastes.

If post-commissioning stack testing indicates the model predictions are conservative, then stack testing will be repeated on a once-in-three years basis.

If post-commissioning testing indicates that there is the potential for air impacts exceedances of particulate matter criteria at nearby sensitive receptors then fenceline or local air quality monitoring will be undertaken in accordance with REMM AQ11 [Drafting note: To be updated once EPL conditions are received]. This air quality monitoring could include, but may not be limited to, the following:

- Size resolved fenceline particulate matter monitoring ($PM_{2.5}$ and PM_{10}) at the EIS nominated sensitive receptors
- Dust deposition gauge monitoring
- Hydrocarbon or VOC monitoring
- Total reduced sulphur compound.

The Environmental Manager will conduct spot checks during the daily site inspections and if air quality conditions change at the Facility, including:

- Calm morning conditions (when dispersion is weak)
- Dust emissions are observed at the site boundary or outside the Facility
- If mechanical errors occur with the HVAC and air emissions control system within the Facility
- If the Facility receives an air quality complaint.

8.3.2 Odour Monitoring

If post-commissioning testing indicates that there is the potential for odour impacts, odour monitoring will be undertaken in accordance with REMM AQ11.

Odour monitoring will be conducted by personnel trained to conduct odour assessments in accordance with olfactory testing as outlined in *Australian Standard AS 4323.3:2001 Stationary Emissions – Determination of odour concentration by dynamic olfactometry* (Standards Australia, 2001).

If required, monitoring of odour emissions will be performed at the Facility through a daily site inspection and boundary observations by the Site Manager. The odour control observations will be made during the peak morning deliveries and repeated as required to adequately account for changing conditions. This will include boundary observations at suitable locations downwind of the Facility to assess any odour observations beyond the Facility boundary. The trigger applicable for odour monitoring checks is the observation of offensive odour ('yes/no'), conducted over a 10-minute period at a suitable location.

Positive off-site odour observations will necessitate an immediate review of conditions and activities by the Site Manager who will have the authorisation to review operations performed on-site and alter site activities and/or additional controls necessary to effectively manage those risks.

Odour complaints will continue to be managed through the complaints handling procedure outlined in Section 8.6.1. Additional field spot odour surveys will be conducted around the Facility boundary particularly when weather conditions are considered 'worst-case', including:

- Calm morning conditions (when dispersion is weak)
- Middle of hot day
- When wind directions are moving towards sensitive receptors
- If the Facility receives an odour complaint.

8.3.3 Health Monitoring

A Health Monitoring Program will be developed by a competent and independent occupational hygienist to assess for silica dust, dust and vapours. This will include testing for:

- Respirable & Inhalable Dust
- Crystalline Silica
- Asbestos
- Diesel Particulate Matter
- VOC.

The program will be reviewed at the end of the first year of operation and adjusted based on the outcome of the results and site observations. Six monthly testing will continue in the second year of operation.

The Facility will organise and pay for health monitoring of each full time and regular worker at the Facility. Health monitoring of workers will be supervised by a registered medical practitioner with experience in health monitoring. A health monitoring report will be obtained from the supervised by a registered medical practitioner. A copy of this report will be provided to each worker and a copy will be retained as a confidential record by HiQ for a period of 40 years.

A copy of the health monitoring report will also be provided to the regulator if the report identifies that the worker may have contracted a disease, injury, or illness as a result of carrying out the work that required the health monitoring, or the report makes recommendations for remedial measures to be undertaken by HiQ.

8.4 Reporting

Reporting requirements and responsibilities are documented in Section 5.5 of the OEMP. Specific reporting requirements in relation to Air Quality Management are summarised in Table 8-1.

[Drafting note: These reports are based on current experience with waste projects. The table will be updated once the conditions of consent are issued and reporting requirements identified]

Table 8-1: Reporting Requirements

Item	Reporting Requirements	Frequency	Responsible
Air Quality and Odour Management Measures	Inspection Checklist	Daily	Site Manager Environmental Manager
Monthly Environmental Inspections	Monthly Inspection Checklist	Monthly	Site Manager Environmental Manager
Post-commissioning stack testing	Stack Testing and Monitoring	Within 12 months of operation of the Facility and once on a three yearly basis	Environmental Manager
Ambient air quality monitoring	Ambient air quality monitoring program	Ongoing air quality monitoring at nominated sensitive receptors following post-commissioning stack testing if air quality impacts and/or exceedances are detected	Environmental Manager
Odour monitoring	Inspection Checklist	Daily	Site Manager Environmental Manager
Health monitoring	Health monitoring program	Undertaken quarterly within the first year of operation. The program will be reviewed at the end of the first year of operation and adjusted based on the outcome of the results and site observations. Six monthly testing will continue in the second year of operation.	Site Manager Occupational Hygienist

8.4.1 Internal reporting and record keeping

Table 8-2: Internal reporting requirements [Drafting note: To be updated once approval is received]

Subject	Action	Responsible	Frequency
OAQMP Review	Meeting minutes	Environmental Manager	Annually

Subject	Action	Responsible	Frequency
Health Records	Training and health records	Site Manager	When new workers are employed
Maintenance	Preventative maintenance plan for plant and equipment	Site Manager	All new and existing plant and equipment

Accurate records substantiating all activities associated with the Facility or relevant to the CoC, including measures taken to implement this OAQMP will be maintained, including:

- This Plan (current and superseded versions)
- Employee training and induction records
- Site inspection reports
- Maintenance and repair records performed on pollution control equipment (for a period of 2 years as per the CoC) [Drafting note: To be updated once approval is received]
- Environmental monitoring records
- Monitoring equipment calibration reports
- Environmental incidents/emergencies reports
- Non-compliance reports
- Complaints register
- Audit reports
- OAQMP review minutes
- Employee and contractor health records
- Regulatory authority inspection reports and correspondence with regulatory authorities.

8.5 Auditing

Audits (both internal and external) will be undertaken to assess the effectiveness of air quality management measures, compliance with this OAQMP, CoC, REMMs and other relevant approvals, licenses and guidelines.

Audit requirements are detailed in Section 5.7 of the OEMP.

8.6 Communications

Air quality management information will be communicated to the community and stakeholders in accordance with the principles and procedures outlined in the OEMP. Further detail is provided in Section 5.8 of the OEMP.

8.6.1 Complaints Management

A telephone complaints line is available during operating hours to receive complaints from members of the public.

Telephone: 1800 261 666

Email address: community@hiquality.com.au

Complaints relating to air quality will be handled in accordance with Section 5.9 of the OEMP and the Communication Strategy [DRAFTING NOTE: Communication Strategy to be finalised post approval].

8.7 Incident Management

Incident Management and Procedures are discussed in Section 5.10 of the OEMP.

All air quality incidents will be reported and managed in accordance with HiQ Incident and Emergency Response Plan (Appendix B of the OEMP).

8.8 Non-Compliances and Actions

A non-compliance is an occurrence, set of circumstances or development that is a *breach* of any Condition of Approval, REMM, licence condition (where applicable), permit or any other statutory approval relevant to the activity and/or area where the activity occurs, and which triggers a specific statutory requirement to notify a regulatory authority. This will also include any material non-compliance against the OEMP and other plans strategies and monitoring programs required by the CoC.

The Environmental Manager (or delegate) will monitor non-compliances with the CoC and OAQMP and will initiate a corrective and preventative action where required. Non-compliance is reported using the *Non- Conformance Report in HiQ's Management System (RAPID).*

Non-compliances will be reported to the Site Manager within 24 hours of the non-compliance being detected. Details of the remedial action will be reported within one working day of completion of the remedial action. The Safety, Health and Environment electronic online Incident Report in the Hi Quality Management System (ref: RAPID) will be used to document the investigation and implementation of preventative actions.

Corrective actions which can be remedied immediately, will be recorded together with the appropriate remedial action in the weekly environmental checklist. A copy of the checklist will be issued monthly to the General Manager.

In the event of a non-compliance presenting potential or actual harm to the environment, this would trigger the need for the incident management procedure. See Section 5.12 of the OEMP for further information.

8.9 Training and Competence

All personnel undertaking work at the Facility will undergo general environmental awareness training and training relevant to their responsibilities under this OAQMP.

Records of environmental inductions and other environmental training will be maintained and readily accessible within the HiQ SHEQ system.

See Section 5.6 of the OEMP for more details.

8.9.1 Inductions

All employees and contractors are required to complete a HiQ general site induction and will be made aware of their environmental responsibilities. The site induction includes:

- An overview of the Facility Rules, Environment Policy and general environmental requirements

- Legal and other obligations
- Dust suppression management
- HVAC and Air Emission Control System
- Plant and equipment emissions
- Environmental incident and community compliant reporting requirements
- Emergency response procedures on site
- Correct use of spill kit
- Environmental awareness of environmental protection responsibilities and measures to minimise environmental impacts.

8.9.2 Toolbox Talks

Toolbox talks will be used to raise awareness and educate employees and contractors on specific air quality related issues. All site personnel are required to complete refresher training on an annual basis via a toolbox meeting.

Toolbox talks tailored to specific environmental issues include:

- Air quality emissions controls
- HVAC and air emissions systems operating
- Dust suppression and management
- Spills and cross contaminant management
- Unloading and handling procedures
- Energy conservation
- Housekeeping and waste.

Records of Toolbox attendance is maintained within the HiQ SHEQ system.

9 REVIEW AND IMPROVEMENT

9.1 OAQMP Annual Review

The management strategies and control measures detailed within the OAQMP will be reviewed annually as a minimum and updated, where necessary, to reflect changes introduced by the HiQ Group operational team, site specific outcomes, non-compliances and recommendations arising out of inspections, meetings and audits. Updates to this Plan may arise from:

- Communications and complaints from interested parties
- Corrective and preventative actions
- Action items from previous management reviews
- Changing circumstances including developments in legislative and other requirements related to operations at the Facility
- Recommendations for improvements.

Outputs from management reviews will include decisions and actions related to possible changes to the OAQMP which can result in (and is consistent with) continual improvement.

9.2 Contingency Planning

Continency Planning for the Facility is described in Section 6.2 of the OEMP. Contingency measures will be developed in consideration of the specific circumstances of the issue and the assessment of consequences.

If an air or odour exceedance and/or fault occurs, the Operational Staff monitoring the controls system application will be notified via alarm/notification. This will trigger the need to suspend operations. If an incident/emergency occurs the Incident and Emergency Response Plan as detailed in Appendix B of the OEMP will then be followed.

10 REFERENCES

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APPENDIX A HVAC AND AIR EMISSIONS CONTROL SYSTEM DRAWINGS