URBIS

Statement of Environmental Effects

On-Site Sewer Management System

Prepared for
HB+B Property
1 October 2024

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Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

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1. Introduction

This Statement of Environmental Effects (SEE) has been prepared by Urbis Ltd on behalf of HB+B Property (the Applicant/Proponent) in support of a Development Application (DA) for an on-site sewer management system at 221-235 Luddenham Road, Orchard Hills (the **site**).

The DA seeks consent from Penrith City Council for:

- Plant Shed Building
- Sewer Treatment Tanks
- Associated irrigation area

The proposed works have an estimated development cost of $10,302,609 and development consent is sought in accordance with Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The SEE:

- describes the site and proposed development,
- provides an assessment of the proposal against the relevant matters for consideration under section 4.15 of the EP&A Act 1979,
- explains the likely impacts of the proposed development on the natural and built environment, and
- outlines how these impacts are proposed to be reduced or mitigated.

The SEE should be read together with the architectural plans and supporting documentation submitted with the DA under separate cover as follows.

Table 1 Supporting Documentation

Title	Prepared By
Architectural Plans	Nettleton Tribe
Irrigation Area Plans	Nettleton Tribe
Landscape Documentation	Geoscapes
Sewer Treatment Plant Documentation	Aquacell
Process Flow Diagrams	Aquacell
Recycled Water Quality Management Plan	Aquacell
Wastewater Flow Assessment	Aquacell
Land Capability Assessment	Whitehead
Irrigation Plans	Nettleton Tribe
Irrigation Management Plan	Whitehead
Irrigation Detailed Plans	Total Irrigation Designers
Sewer & Treated Water Reticulation Plans	Arcadis
Civil & Stormwater Documentation	Henry & Hymas
Flood Letter	Arcadis

Title	Prepared By
Traffic & Parking Letter	Arcadis
Bushfire Letter	Peterson Bushfire
Acoustic Assessment	EMM
Air Quality Assessment	EMM
Waste Management Plan	HBB Property
QS Report	Napier & Blakeley
Wildlife Hazards Letter	Ecoplanning

2. Site Analysis

2.1. Site Location

The site is located within the Alspec Industrial Business Park (AIBP) estate at 221-227 Luddenham Road, Orchard Hills and is legally described as Lot 1 in DP DP1293805. Orchard Hills is a Suburb within the Penrith Local Government Area (LGA), located at the heart of Western Sydney. The broader Business Park Boundary is defined by Patons Lane to the north, Luddenham Road to the east, Stockdale Road to the west, and a residential property to the south.

The subject site is located at the north western corner of the AIBP site with a direct interface to a warehouse development on proposed Lot 2 and the internal estate road to the east.

Figure 1 Site Location Map

Source: Geoscapes

2.2. Site Description

The key features of the site are summarised in the following table.

Table 2 Site Description

Site Characteristic	Description
Legal Description (Title Particulars)	Lot 1 in DP1293805
Site Ownership	Atilol Holdings Pty Ltd

Site Characteristic	Description
Title Encumbrances (Easements etc.)	An existing easement for batter which benefits the EE Lot is located along the northern boundary of the site. The easement for batter is proposed to be relinquished as part of the bulk earthworks DA.
Zoning	E4 General Industrial
Existing Use / Structures	The site is currently undeveloped and characterised by former rural residential land.
Site Area	5,242m^2
Existing GFA	N/A
Site Frontage	60.9m
Vegetation	The site comprises of grassed land with some scattered trees.
Hydrology	No watercourses traverse the site.
Heritage	The site does not contain a heritage item of local or state significance, nor is it within a heritage conservation area.
Bushfire	The site is identified as being affected by Vegetation Category 2 for Bushfire hazard.
Biodiversity	The site is not identified as containing biodiversity values.
Vehicular/Site Access	The proposed development has a direct interface with the north-south internal local road, which provides access to Patons Lane and Luddenham Road.
Adjacent land uses North	The surroundings north of the site are predominantly rural residential and agricultural facilities. The Erskine Park Fire Service and Dogs NSW are also located to the north-east. The Western Motorway (M4) is located further north of the site accessed via the Luddenham Road and Mamre Road connection. South Creek flows north-south, with an unnamed tributary connection beginning north of the site and breaking away to the west.
Adjacent land uses East	The eastern boundary divides its interface with Luddenham Road (northern half) and several properties (southern half). These include agricultural, community and cultural uses pertaining to the Bosna Croatian Club, a plant nursery and Luddenham Oval. Further east across Luddenham Road are several rural residential dwellings and South Creek, a major creek line.
Adjacent land uses South	Immediately south of the site are future development applications for the AIBP for industrial land uses. Further south is the Northern Gateway Precinct of the Western Sydney Aerotropolis
Adjacent land uses West	To the west is another property proposed for industrial land uses as part of the AIBP. Further west is an environmental conservation zone which is adjacent to a tributary of South Creek. To the north west of the site is a waste management service relating to a recycling and landfill centre
Public Transport	The surrounding public transport network indicates the area is currently underserviced by public transport. It can be assumed the level of service provision reflects the low travel demands of the locality. The level of public transport

Site Characteristic	Description
	servicing Luddenham Road will increase as the Aerotropolis develops.
Roads	The site is in proximity to existing road networks and planned infrastructure corridors. Luddenham Road provides direct access to the Western Sydney Aerotropolis and the Airport. It also provides connections to Mamre Road with access to the M4 Western Motorway towards the north, and connections to Elizabeth Drive to the south.

Photographs of the existing development and surrounding context are provided below.

Picture 1 View from the junction of Patons Lane and Luddenham Road at the north eastern corner of the AIBP.

Source: Google Maps

Picture 2 View looking north along Luddenham Road.

Source: Google Maps

Picture 3 Picture 4 View looking north towards the undeveloped lot across Patons Lane.

Source: Google Maps

Picture 5 View looking east towards residential properties across Luddenham Road.

Source: Google Maps

3. Development Description

The Development Application seeks development consent for the construction and operation of an On-site sewer management (OSSM) system that will service the Alspec Industrial Business Park (AIBP).

3.1. Key Elements

The key elements of the proposed development are summarised in the table below. Reference should be made to the accompanying architectural plans and supporting documentation for further detail.

Table 3 Summary of Proposal

Key Element	Proposal
Development Types (Land Use)	Waste water infrastructure
Description of Development	The proposal seeks to develop an on-site waste disposal system comprising of 492m^2 of underground tanks, 567m^2 of above ground tanks and 648m^2 of plant shed area. Together a total of 9 tanks are proposed onsite. A service lane is proposed through the site connecting to the AIBP north south road. Landscaped setbacks are proposed comprising of vegetation and tree planting to achieve a total landscape area of 892m^2.
Site Preparation	Earthworks and lot pad design will be approved under a separate DA (DA24/0294). Accordingly, site preparation works can be assumed to have been assessed under DA24/0294. The construction of a retaining wall at the northern boundary is proposed.
Stormwater / drainage	An underground OSD and rainwater tank is proposed to be constructed at the northwest site corner.
Built Form & Design	No buildings are proposed to be constructed. A plant shed is proposed at the south-east corner of the site.
Front setback	The proposed plant shed aligns with the 15m front building setback from the proposed AIBP internal road. This includes a 7.5m landscape setback.
Side setbacks/separation	5m building setback for the north and south boundaries. This includes landscape setbacks as follows: ▪ 2.5m northern side boundary. ▪ 1m southern side boundary. ▪ 2.5m western rear boundary.
Waste	Screenings from the prescreen and biosolids from the screw press will be processed and stored within the sludge handling room for removal by a specialised waste contractor and disposed of at an appropriately licenced facility.
Access and Parking	
Vehicle access	Maintenance vehicles will be able to enter and exit the site in a forward direction from the proposed AIBP local road at the south east corner of the site. There is also a turnaround facility providing space for larger vehicles up to 8.8m in length to turn around within the site.
Pedestrian access	No pedestrian access is provided to the site.

Key Element	Proposal
Car parking	One formal parking space is provided along the southern boundary adjacent to the plant shed. This is sufficient to accommodate the maintenance activities required for the facility.
Proposed new road/lane/access	A 6m wide service lane is proposed to traverse the site from the south eastern corner at the AIBP local road, to the site's north western corner to the adjacent industrial property.
Landscaping and Public Domain	Landscaping is proposed in the form of landscape setbacks and tree planting. 14 trees are proposed to be planted along the setbacks, in addition to shrub and groundcover planting.
Landscape area	892m^2 (17.02%) of landscape area is proposed. Permeable gravel is also proposed for 1,538m^2.
Number of trees to be impacted by the proposed works	No trees are proposed to be removed as part of this application. This has been addressed as part of the AIBP local DA (DA24/0294).
Fencing	A 2.1m high black palisade fence is proposed for the eastern (front) and southern boundaries. The boundaries to the north and west propose a 1.8m high black powder coated chain link fence with barbed wire over.
Staging and Infrastructure Delivery	
Development Staging	The proposal will be constructed in the second stage of the development, once the bulk earthworks are complete.
Operational Details	
Number of Employees	No staff are proposed to be permanently based onsite.
Plans of Management	A Recycled Water Quality Management Plan (RWQMP) has been prepared by Aquacell to identify the microbial objectives for the facility and describes how the implementation of the management plan will ensure the objectives are achieved. Refer to **Section 4.3.2**.
Subdivision	Subdivision is not proposed as part of the application.

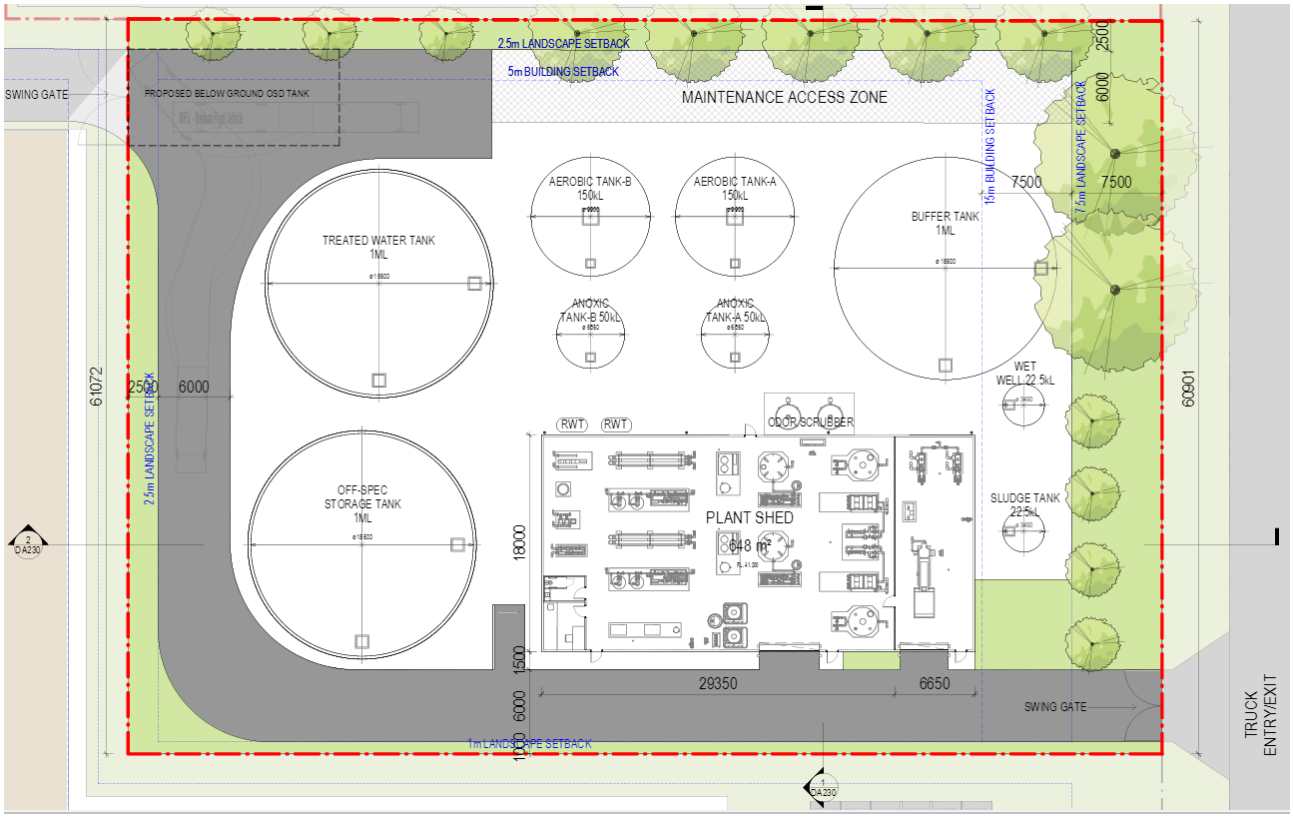
3.2. Site Layout

The proposed OSSM facility comprises the construction of several tanks which will be located above and below ground. Most central to the site is the proposed plant shed which is an enclosed structure adjacent to the tanks and will house the plant and equipment for the sewer treatment process. Most of the tanks will be underground, with two 1ML tanks designed to be aboveground and located to the rear of the site.

Below ground tanks relate to the storage and treatment of sewage and above ground holding tanks are for the storage of treated water. The location and size of each tank is illustrated in Figure 3. An isometric plan is provided to demonstrate the 3D views of the proposed structures, refer Figure 4. The scale of depth of each tank to be constructed is highlighted at Figure 5.

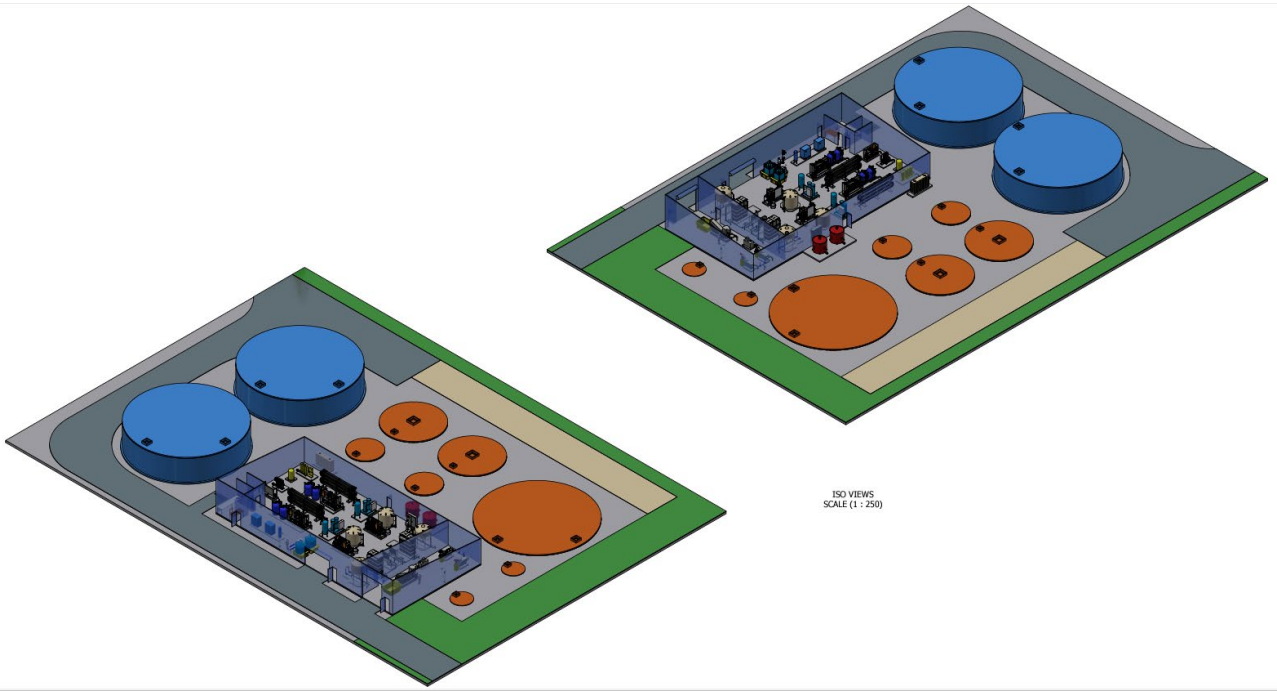
North of the tank components and plant shed is a maintenance access zone which links to the proposed service lane to provide operational and maintenance access.

Figure 2 General Arrangement Plan



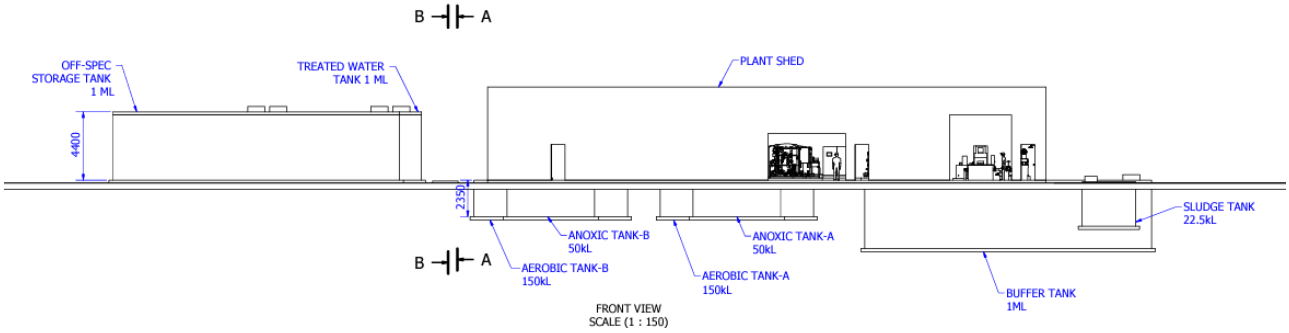
Source: Nettleton Tribe

Figure 3 Site Layout - Isometric Views



Source: Aquacell Water Recycling

Figure 4 Section - Front View



Source: Aquacell Water Recycling

3.3. Proposed Operations

The proposed OSSM facility seeks to deliver a Blackwater Water Treatment Plant (BWTP). The proposed operations of the BWTP is described within the Recycled Water Quality Management Plan (RWQMP) attached to this SEE.

The blackwater will be sourced from onsite toilets, showers, basins and drains (other than stormwater drains). Once treated, the water will be redistributed to the warehouses via a recycled water main located in the road reserve of the main estate road. Recycled water will be supplied to the site for:

- Cooling tower make-up water
- Toilet flushing
- Irrigation

Additional demand beyond the available recycled water will be met using potable water. Refer to the following figure which outlines the Irrigation Masterplan Strategy attached to this SEE. The locations marked in purple outline the areas to be irrigated by the OSSM, which include:

- AIBP local road streetscape setbacks (except for the streetscape areas in proximity to the Luddenham Road and AIPB local road intersection to the south).
- Landscape areas within the OSSM site.
- Patons Lane setback which interfaces the proposed Alspec Warehouse.

Figure 5 Irrigation Masterplan Strategy

TOTAL IRRIGATION AREA ACHIEVED (ha)		21.50
	Other Site Stormwater Catchments Via Bioretention And Storage Ponds (ha)	13.80
	Collector Road and Patons Lane landscape strips (ha)	0.78
	OSSM Treated Water Irrigation Area (ha)	3.65
	Harvested Rainwater and Stormwater Irrigation Area (ha)	3.27
TOTAL IRRIGATION AREA REQUIRED (ha)		18.44
NW and SE catchments (ha)		11.44
NE catchment on Lot 1 (ha)		0.47
Rainwater tanks on lots (ha)		2.88
Treated water from OSSM Facility (ha)		3.65
IRRIGATION AREA SURPLUS (ha)		3.06

Source: Nettleton Tribe

3.4. System Process

A flow diagram of the plant showing the key unit operations is provided in the Sewer Treatment Plant Process Flow Diagrams attached to this SEE.

The process involves directing the Blackwater from the site to a wet well adjacent to the treatment plant. Effluent from the wet well is pumped to a pre-screen and then directed to 1000kL buffer tank. The BWTP draws water from the buffer tank based on treated water demand, storing the final treated water in a 1000 kL treated water storage tank.

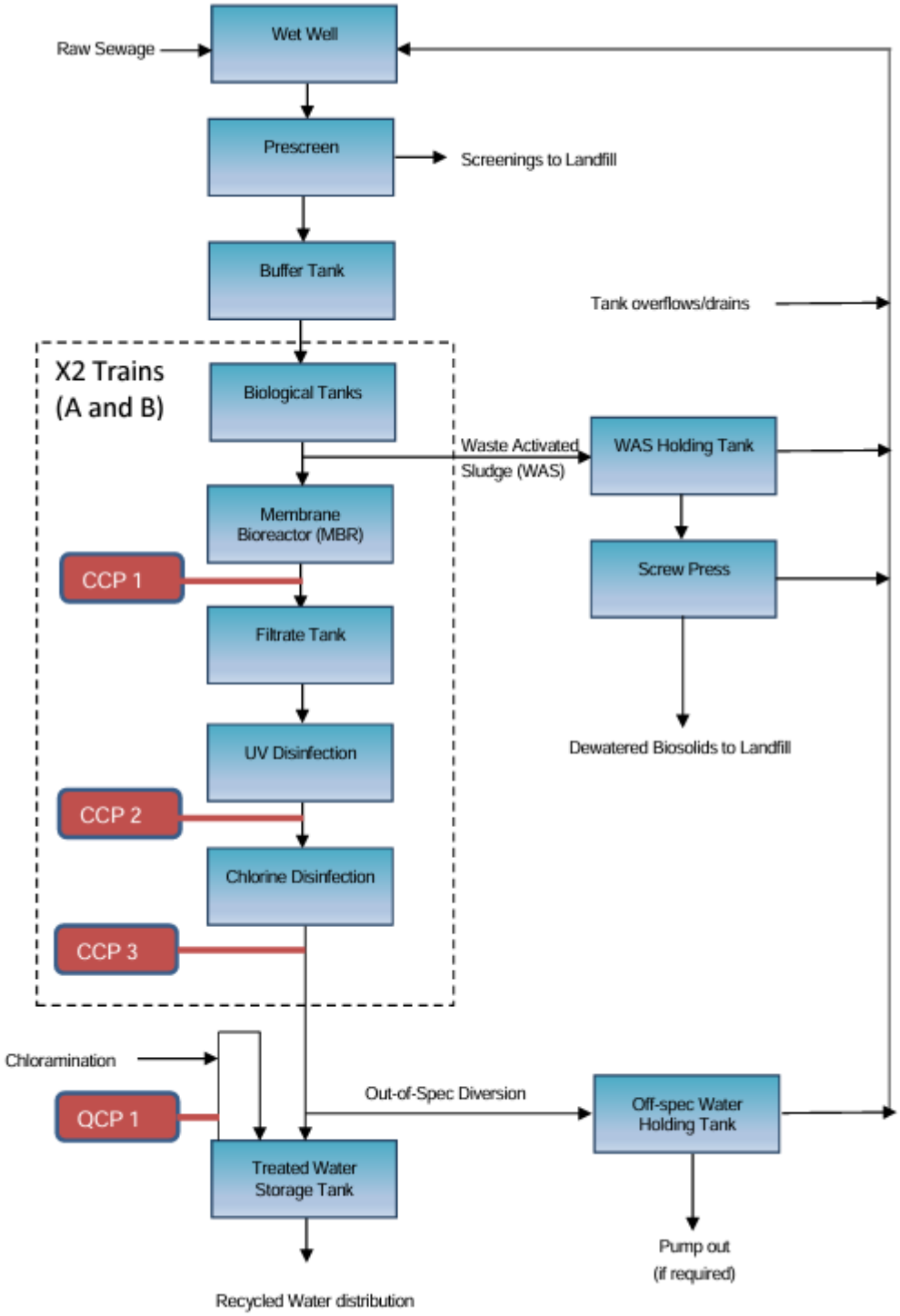
A process diagram is contained at **Figure 6**, sourced from the Recyced Water Quality Management Plan attached to this SEE. A brief description of each component of the process is summarised in the following table.

Table 4 Process Description

Component	Description
Pre-screen	Removes non-degradable solids such as fibres, or rags that can block or damage downstream processes and equipment. It also removes some of the degradable waste which help to lower the organic load to the biological treatment process.
Buffer Tank	A 1 ML buffer tank is provided to capture peak flows from the site. This maximizes the amount of water than can be recovered and enables the plant to operate at an efficient and steady flow.
Bioreactor	The biological system consists of both anoxic and aerobic stages. The Anoxic Tank converts nitrate generated by the treatment process to nitrogen gas in order to reduce the nitrogen content of the treated water. Continuous mixing in the anoxic tank ensures that mixed liquor remains homogenous. The Aerobic Tank carries out further biological treatment of the wastewater to reduce the organic content and convert ammonia nitrogen to nitrate and nitrite. Blowers aerate these tanks to ensure the required air for oxygen transfer is provided.
Screw Press	The screw press receives sludge from the WAS tank and separates the solid and liquid phases. The liquid is sent back to the start of the process train and the dewatered biosolids are collected for transportation to landfill.
Ultrafiltration Membranes	The combination of ultrafiltration and bioreactor is referred to as a membrane bioreactor (MBR). The biomass suspension from the bioreactor is recirculated past hollow fibre membranes, housed in the MBR tank, and returned to the bioreactor. A portion of the recirculated flow is withdrawn through the membranes as filtrate and collected in the filtrate tank for downstream disinfection.
Ozone/BAC	Filtered water is then dosed with ozone and passed through an ozone contact pipe followed by Biological Activated Carbon (BAC) filters. This combination is used to remove colour from the feed water. The BAC employs periodic backwashing to control bacteria levels present in the filter and to ensure the filter bed is well distributed.
Ultraviolet Light Disinfection (UV)	The UV system consists of two UV units in parallel. It provides the required dose to ensure the required inactivation of virus, bacteria and protozoa.
Chlorine Disinfection	Following the UV, the water is dosed with sodium hypochlorite before entering a pipe contactor to provide the necessary chlorine contact time for disinfection. The free chlorine residual and pH of the recycled water are monitored at the end of the chlorine contact pipework.
Treated Water Storage Tank and Distribution	The treated water is stored in a 1ML Treated Water Storage Tank (TWST) which allows the system to account for peak flows. Water in the TWST is recirculated and dosed with chlorine to maintain a free chlorine residual for storage and distribution.

Off-Spec Storage Tank	Any treated water that cannot be used for distribution will be diverted to the Off-Spec Storage Tank. This water will then be recirculated back through the treatment process.

Figure 6 Recycled Water Process Flow and Critical Control Points



Source: Aquacell Water Recycling

4. Planning Assessment

4.1. Approvals Under Other Acts

Table 5 Approvals under other Acts

Act		Assessment
Environmental Protection Biodiversity and Conservation Act 1998 (Commonwealth)		Not required.
Local Government Act 1993	*S68*	A person may carry out an activity specified within this section only with prior approval of Council. Part C applies to the proposal and requires consent from Council: ***Part C – Management of waste*** *6 Operate a system of sewage management.* *(1) In this Part,* ***operate a system of sewage management*** *means hold or process, or re-use or discharge, sewage or by-products of sewage (whether or not the sewage is generated on the premises on which the system of sewage management is operated).*
EP&A Div 4.8 Integrated Development		Refer to the following sections.
Coal Mine Subsidence Compensation Act 2017	*s 22*	Not required.
Fisheries Management Act 1994	*s 144* *s 201* *s205* *s219*	Not required.
Heritage Act	*s58*	Not required.
Mining Act 1992	*ss 63, 64*	Not required.
National Parks and Willdlife Act 1974	*S90*	Not required, dealt with as part of the Bulk Earthworks DA 24/0294
Petroleum (Onshore) Act 1991	*s16*	Not required.
Protection of the Environment Operations Act	*ss43(a, 47 and 55* *ss43(b), 48 and 55* *ss43(d), %% and 122*	Not required.
Roads Act 1993	*s138*	Not required.
Rural Fires Act 1997	*s100B*	Not required.
Water Management Act 2000	*89, 90, 91*	Not required.

4.2. S4.15 Evaluation

The following tables address the relevant matters for consideration under section 4.15(1)(a) of the EP&A Act 1979.

4.2.1. Applicable Environmental Planning Instruments

Table 6 Applicable Environmental Planning Instruments

Matter for Consideration - s4.15(1)(a)(i)	Consistency
State Environmental Planning Policies	
State Environmental Planning Policy (Resilience and Hazards) 2021	This SEPP provides a state-wide planning approach for the remediation of land and aims to promote the remediation of contaminated land to reduce the risk of harm to human health or the environment. Chapter 4 of the Resilience and Hazards SEPP requires the consent authority to consider whether land is contaminated prior to the issuance of consent to a development application. The site will undergo site preparation works under a separate local DA (DA24/0924) for Bulk Earthworks which will ensure the site will be made suitable from a contamination perspective.
State Environmental Planning Policy (Transport and Infrastructure) 2021	The aim of State Environmental Planning Policy (Transport and Infrastructure) 2021 is to facilitate the effective delivery of infrastructure across NSW. This is achieved by identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure, including classified roads, rail corridors and prescribing consultation requirements for certain development. The OSSM facility does not require any staff to operate onsite. Therefore it is not considered traffic generating development under Schedule 3 of the Transport and Infrastructure SEPP and does not require referral to TfNSW.
Clause 2.126 Development Permitted with or without consent	Under *Chapter 2 Infrastructure - Division 18 Sewerage Systems*, development for the purpose of sewage treatment plants may be carried out with consent on land in a prescribed zone. A *Prescribed Zone* under this clause includes E4 General Industrial. The proposal is therefore permissible with consent under the Transport and Infrastructure SEPP.
Clause 2.119 Development with frontage to classified road.	The development is not proposed on a classified road. Therefore, this is not applicable to the proposal.
State Environmental Planning Policy (Precincts - Western Parkland City) 2021	Under Chapter 4 Western Sydney Aerotropolis, the SEPP Includes provisions relating to Aviation Safeguarding and provides controls to development on certain land. Part 4.3 applies to the site, and the development has been assessed against the following controls.
4.17 Aircraft Noise	Development consent must not be granted to noise sensitive development if the development is to be located on land that is in an ANEF or ANEC contour of 20 or greater. The site is not located in these areas and thus does not trigger this cause.
4.18 Building Wind Shear Turbulence	The objective of this section is to safeguard Airport operations from wind shear and turbulence generated by buildings. The site is identified outside of this area, and therefore this does not apply.
4.19 – Wildlife Hazards	Applies to development within the 13km wildlife buffer zone of the future Western Sydney International Airport. Consent cannot be granted unless it has considered a written assessment of the wildlife that is likely present on the land. The site is located within the 8km wildlife buffer and has been assessed in accordance with these requirements. A Wildlife Hazards letter has been prepared to confirm the proposals compliance with the SEPP requirements

Matter for Consideration - s4.15(1)(a)(i)	Consistency
	and includes appropriate risk mitigation measures to ensure the project will not increase wildlife hazards to the future Airport.
4.20 Wind Turbines	This section regulates the construction of wind turbines and wind monitoring towers on land within 30 kilometres of the Airport. As the proposal is outside of the 3km radius, and does not propose wind turbines, tis control does not apply.
4.21 Lighting	This section seeks to safeguard Airport operations from the risk of lighting and reflectivity distractions for pilots. As the site is not located in the Lighting Intensity Areas, the controls do not apply to the proposal.
4.22 Airspace Operations	This section applies to development on land shown on the Obstacle Limitation Surface Map that is a controlled activity. As the site is located in the outer horizontal surface (RL 230.5m AHD) and the proposal does not breach the identified height, the proposal complies.
4.23 Public Safety	The site is not identified on land within the Public Safety Area of the airport. Therefore, the controls do not apply.
4.23A Operation of certain air transport facilities	The objective of this section is to regulate development that may impact the operation of certain air transport facilities. As the site is not located on land identified as Building Restricted Area, the controls do not apply.
Penrith Local Environmental Plan 2010	
2.1 Land Use Zones	Whist *Sewerage Systems* are prohibited in the E4 zone under the Penrith LEP, it is permitted with consent under the Transport and Infrastructure SEPP as discussed in the above section. Notwithstanding, the proposed development is consistent with the relevant objectives of the E4 zone given the proposal will support the industrial land uses to achieve water conservation through recycled water re-use.
2.6 Subdivision	Not sought for subdivision
4.1 Minimum lot size	Complies
4.3 Height of Buildings	Complies The proposed building height of the Plant Shed is 6m and complies with the maximum building height in the LEP of 24m.
4.4 Floor Space Ratio	Complies
4.6 Exceptions to development standards	Complies
5.21 Flood Planning	The site is not identified as being affected by the flood planning area. However, identified flood levels at Unnamed Creek north-west of the site. The proposed design and elevation of the OSSM facility adequately positions the development out of flood risk, aligning with council requirements. This is further discussed in **Section 4.3.4**.

4.2.2. Development Control Plan Considerations

Table 7 Applicable Development Control Plans

Matter for Consideration - s4.15(1)(a)(iii)	Consistency
Penrith Development Control Plan 2010	

Matter for Consideration - s4.15(1)(a)(iii)	Consistency
2.3 Bushfire Management	A Bushfire Assessment has been prepared to assess the proposals compliance with 'Planning for Bushfire Protection 2019' (PBP) guidelines. Whilst the site is identified as bushfire prone land, the development employs the relevant measures and design controls to achieve compliance with the PBP. Further assessment is contained at **Section 4.3.5**.
3.1 The Water Cycle/Water Conservation	The proposal ensures the minimisation of impacts on the water cycle and natural ecosystems. **Section 4.3.7** demonstrates the site's stormwater management aligns with best practice principles. It is designed to safely convey flow through the site and within the capacity of the downstream system. It also confirms water conservations targets achieve a minimum 80% non potable water demand to be provided through rainwater or stormwater harvesting storages.
3.2 Catchment Management and Water Quality	To manage the impact on downstream water quality, water quality measures at source and end of line treatments will be provided. **Section 4.3.7** details how the water quality reductions have been met by the proposed development.
3.5 Flood Planning	A flood Letter has been prepared and discussed at **Section 4.3.4**. It highlights the site's elevation is at RL 41.2m AHD which exceeds the Probable Maximum Flood (PMF) levels identified in the report. This indicates the development is positioned out of flood risk and is complying with council requirements.
3.6 Stormwater Management and Drainage	An Integrated Water Cycle Management Report has been prepared and contained at **Section 4.3.7**. It confirms the facility is designed to safely convey flow through the site and within the capacity of the downstream system. In addition, a below ground OSD tank is proposed at the north west corner of the site to ensure runoff from the development is appropriately managed in accordance with Council's requirements.
5.1 Waste Management Plans	A Waste Management Plan has been prepared for the proposal and discussed in **Section 4.3.8**.
5.5 On-Site Sewage Management	Council have been engaged to discuss the proposal. Further discussion against Council controls is provided below at control 13.3 On-site Sewage Management.
6.1 Landscape Design Controls	The proposed development includes landscape treatment in the form of vegetation and tree planting. Landscape plans have been prepared to demonstrate the appropriate landscape setbacks have been achieved and there is sufficient planting of native species to provide shade and visual amenity. In addition, recycled water collected from the site will be used for irrigation of landscape areas.
10.2 Traffic Management and Safety	A Traffic Letter has been prepared to supplement the existing Traffic Impact Assessment prepared for the broader AIBP (refer **Section 4.3.6**). It highlights that the proposal is not considered traffic generating development. It demonstrates that the layout and design of the OSSM facility provides safe entry and egress from the site, and adequate parking to support the future operations.
10.4 Roads	The proposed service lane is designed to comply with the design requirements for a local road. The appropriate widths are achieved to align with the requirements set out in this section.
10.5 Parking, Access and Driveways	As demonstrated above, the Traffic Letter confirms there is a sufficient amount of parking to support the facility as there are no staff proposed to be permanently based onsite. The parking associated with maintenance activities can be completely accommodated for onsite. Refer **Section 4.2.6**. It also demonstrates the proposed driveway provides safe access to and from the site.

Matter for Consideration - s4.15(1)(a)(iii)	Consistency
12.4 Industrial and Commercial Development	The proposed development will not adversely impact on the amenity of neighbouring residential development. The proposed OSSM facility will not generate any exceedances during the operation or construction stage of the development. Refer **Section 4.3.10** for further details.
12.7 Vibration and Blasting	As detailed above, the Noise and Vibration Assessment described in **Section 4.3.10** confirms their will be no vibration impacts that will affect the amenity of the surrounding area.
13.3 On-Site Sewage Management	The proposed construction and operations of the OSSM facility has been designed in accordance with Council's On-Site Sewage Management and Greywater Reuse Policy. A Wastewater Flow Assessment has been prepared to verify the expected wastewater flows to be handled by the OSSM facility. Refer **Section 4.3.1**.
14.2 Cooling with Landscaping	The design employs landscape elements to provide amenity and shade. Green infrastructure is delivered onsite through vegetation and tree planting to reduce the proposals contribution to the urban heat island effect. Consideration to reducing demand on non potable water resources is achieved through the employment of water conservation targets to passively irrigate the site with collected stormwater and rainwater.
14.3 Cool Colours and Materials	The proposed materials and colours selected ensure the minimisation of impacts on urban heat. The Plant Shed uses a translucent wall sheeting to address the east and west elevations which receive direct sunlight. Darker colours are employed on the north and south elevation which do not receive significant sunlight in order to reduce urban heat.
E18 Luddenham Road Industrial Business Park	
18.2.1 Building Setbacks	The following building setbacks are required: ▪ Collector Road – north south Boulevard: 15m ▪ Estate roads: 7.5m ▪ Rear and side boundaries: 5m The proposal aligns with the specified building setbacks and therefore complies.
18.2.2 Landscaping	The following landscaping setbacks are required: ▪ All other roads: 50% of building setback ▪ Rear boundaries: 2.5m The proposal aligns with the specified landscape setbacks and therefore complies. Tree planting is proposed along the front setback and side setback to enhance landscape treatment and provide visual amenity at these interfaces.
18.2.3 Building and Urban Design	The proposal does not seek to construct a building which requires assessment under this control. Notwithstanding, the proposed plant shed and tanks are appropriately designed and sited to ensure functionality of the OSSM operations. They are minor structures which do not represent significant bulk or scale. They employ high quality colours and materials that are sympathetic to the future industrial character and ensure structures are not visually obtrusive from the public domain. Landscaping is provided in the form of vegetation and tree planting to soften the look of the facility and filter views from the streetscape. Overall, it achieves a high quality look commensurate of an OSSM facility within the Industrial setting of the AIBP.
18.3.2 Noise Pollution	The proposed OSSM facility will not generate any exceedances during the operation or construction stage of the development. Refer to **Section 4.3.10** which demonstrates how the assessment results comply with the relevant requirements.

Matter for Consideration - s4.15(1)(a)(iii)	Consistency
18.3.3 Air Pollution	The proposed development has been assessed for its potential impact on air quality. **Section 4.3.9** of this SEE demonstrates the development does not adversely impact on air quality.
18.3.4 Trading/Operating Hours of Premises	The operation of the development will not impact on the amenity of adjoining residential and rural areas.
18.3.5 Storage, Transport and/or processing of chemical substances	Storage, transport and processing of chemical substances is to be undertaken by trained operatives only, in accordance with Aquacell RWQMP and O&M Manual.
18.4 Road network and site access	The proposal aligns with the Road hierarchy map. A 6m wide Service Road is proposed to travel through the site, in accordance with the Road Hierarchy Map. It provides a single lane, and permits large vehicle turnaround movements. Refer to **Section 4.3.6** which further discusses the traffic and access assessment.
18.5 Access and Parking	The development is not classified as traffic generating and therefore does not require many parking spots. The provision of parking aligns with the generation rates from operation. Refer to **Section 4.3.6** which further discusses the parking and access assessment.
18.6 Integrated Water Cycle Management	The proposal demonstrate compliance with the stormwater quality targets during construction and operations. Refer to **Section 4.3.7** for the IWCM Report confirming the proposal compliance with water quality and stormwater quantity requirements.
18.7 Flood Prone Land	The proposed development ensures it does not impact on flood behaviour and ensures the development is compatible with flood risk. **Section 4.3.2** outlines the assessment of the proposal against relevant flood controls. In summary, it confirms the proposal aligns with the requirements for flood management and no adverse impacts arise.

4.2.3. Any Planning Agreement

The applicant has entered into an agreement with Penrith City Council for a Voluntary Planning Agreement (VPA) which seeks to deliver the Luddenham Road widening, upgrading of Patons Lane and a signalised intersection to Luddenham Road. The VPA has been executed and is now registered on title.

4.3. Impact Statement

The table below assesses the likely environmental, social and economic impacts of the OSSM facility in accordance with section 4.15(1)(b) of the EP&A Act 1979.

4.3.1. Wastewater Flow Assessment

The Wastewater Flow Assessment, conducted by Aquacell verifies the anticipated wastewater flows that the proposed OSSM plant will need to manage. The assessment used several sources to generate a potential wastewater flow information tailored to the Alspec Industrial Estate. The sources used included the following:

- **Survey of tenants** – information on water usage, staffing, and any on-site process that could generate wastewater
- **Development warehouse and office areas** – the site masterplan was used to identify number of lots and the warehouse area of each lot
- **Specific information on key water users** – information on layout of the warehouse, staffing levels and water bills from the other Alspec sites in Australia.

The information was combined to develop the expected wastewater generation in litres per square metre of combined office and warehouse areas. The estimated total wastewater generation for the full development is approximately 290 kL/day. This aligns closely with the calculations made by Arcadis, which estimated a maximum wastewater generation of 298 kL/day.

4.3.2. Recycled Water Quality Management Plan

A Recycled Water Quality Management Plan (RWQMP) has been prepared by Aquacell to identify the microbial objectives for the facility and describes how the implementation of the management plan will ensure the objectives are achieved. The RWQMP describes:

- The responsibility of the recycled water supplier
- Description of the recycled water process
- Detailed validation of the treatment processes
- A detailed process control and monitoring program to ensure the treated water meets the required quality for end use.

Roles and Responsibilities

There will be a scheme manager for the OSSM. They will be committed to ensuring the system is maintained and operated in compliance with relevant guidelines, regulations and standards at all times. Both Aquacell and the scheme manager will provide the same commitment to maintain and operate the system in compliance with relevant guidelines, regulations, and standards at all times. Under the agreement, the scheme manager will have maintenance personnel on site to undertake all daily, weekly and emergency response tasks associated with the running of the plant. Aquacell will provide initial training and ongoing technical support. Aquacell will be responsible for the majority of the technical and operational activities including on-site servicing, calibrations, regulatory reporting and remote operation as will be detailed in the service contract.

In general terms, the scheme manager is responsible for:

- the production and supply of recycled water that is fit for purpose, ensuring that water quality complies with regulated standards and supply agreements up to designated transfer points defined in the RWQMP and supply agreements.
- implementation of communication and reporting protocols if water quality does not meet required standards.
- operation and maintenance of infrastructure for the production and supply of recycled water up to designated transfer points.
- compliance with relevant regulatory requirements for recycled water.
- using recycled water only in the manner and for the purposes for which it has been supplied, in accordance with supply agreements.
- operation and maintenance of recycled water infrastructure after the designated transfer point.
- implementation of control measures and compliance with usage restrictions defined in supply agreements.

Water Quality Objectives

The proposed recycled water quality objectives have been derived based on the application of the principles described in the Australian Guidelines for Water Recycling: Managing Health and Environmental Risks Phase 1 (AGWR) (NRMMC, 2006).

The possible exposure to treated water at this site are:

- Ingestion from cross connections between the drinking and recycled water systems
- Aerosol ingestion from toilets
- Ingestion from cooling towers
- Ingestion of water used for irrigation

Table 8 Possible Exposure to Treated Water

Ingestion from cross connections between the drinking and recycled water systems	There are a number of steps that have been taken to ensure that the risk of cross-connection is low. These include: ▪ The dual reticulation system will be installed according to AS/NZ 3500 and NSW Health Guidelines for recycled water, including lilac pipe and/or markings. ▪ Testable reduced pressure zone devices will be provided at all interconnection points between the treated water and the potable water supply. ▪ Signage to warn of the use of recycled water will be installed. ▪ The dual pipe system will undergo a full cross connection audit prior to commercial operation. If any cross connections are detected, these will be repaired prior to commercial operation. Cross-connection audits will be carried out at a frequency to be determined by Scheme Owner, in consultation with Aquacell and other stakeholders under the pending recycled water scheme approval to operate under Section 68 of the Local Government Act (1993). The detailed plan for carrying out cross-connection tests will be documented in the maintenance plan. ▪ Any maintenance or modification to the reticulation system will occur under strict supervision of the responsible entity and Scheme Manager and in accordance with the site management processes. ▪ All maintenance workers and plumbing contractors will be fully inducted to the site and made aware of the dual reticulation system and the consequences of cross connections.
Aerosol ingestion from toilets	Table 3.3 of the AGWR provide a guidance on typical exposure rates and ingestion volumes for toilet flushing. These figures have been used for calculating performance targets.
Ingestion from cooling towers	The exposure for those operating the cooling towers (occupational) is considered to be higher than those for the general public. Occupational exposure is mitigated by various means: ▪ Access to cooling towers restricted to authorised staff only ▪ The normal practises for maintenance and servicing cooling towers to minimise risk to legionella are applied (e.g., as detailed in the NSW Health document Legionella control in cooling water systems (August 2018). ▪ New construction with modern, low drift design.
Ingestion of water used for irrigation	The proposed irrigation includes drip and spray irrigation for landscaped areas. Table 3.3 of the AGWR provide a guidance on typical ingestion volumes for garden irrigation which have been used for calculating performance targets.
Performance target calculations	The project specific ingestion risks have been considered to determine the pathogen removal targets (using sewage as source) required to meet the minimum tolerable health risk of 10^{-6} DALY as recommended by the AGWR.

Validation of Treatment Process

The validation program has been designed to evaluate the BWTP's ability to achieve the water quality objectives, which acts as a feasibility study of the BWTP design. This includes membrane bioreactor validation, UV validation, and free chlorine system validation.

Monitoring

Verification and ongoing monitoring will be achieved by providing evidence that the overall system can deliver water of the specified quality. A verification monitoring plan is provided which will create a total of 12 samples over 6 weeks. Sample analysis is undertaken at a NATA accredited laboratory. To provide evidence

that the overall system can deliver water of the specified quality on an on-going basis, the following on-going monitoring plan is proposed.

Figure 7 Treated Water Ongoing Monitoring Program

Parameter	Units	Monitoring frequency	Compliance Value
Treated Water			
E.coli	cfu/100ml	Monthly	< 1
Turbidity (MBR filtrate) (NTU)	NTU	Continuous online	≤ 0.2
Validated UV Dose (virus)	mJ/cm2	Continuous online	≥ 58
Chlorine Contact Time (C-T)	mg.min/L	Continuous online	C-T ≥ 4
pH (CCT)		Continuous online	pH ≤ 9.0 and pH ≥ 6.0
Total Chlorine (Treated Water Storage)	mg/L	Continuous online	TC ≥ 0.5 and TC ≤ 5.0

Source: Aquacell

Employee Awareness and Training

Aquacell will provide an experienced water recycling engineer to monitor the plant. Any contractors used on site must be accredited, qualified and have the appropriate level of training. A site induction is also required for those completing work related to the facility.

4.3.3. Land Capability Assessment and Irrigation Management Plan

A Land Capability Assessment (LCA) and Irrigation Management Plan (IMP) has been prepared by Whitehead and Associates for the application of 'excess' recycled water generated by the AIBP. Recycled water land application and associated infrastructure is referred to as the Alspec Industrial Business Park recycled water scheme (RWS). The proposed LCA and IMP have been prepared for a proposed recycled water irrigation zone (RWIZ). The analysis involves modelling a dedicated RWIZ to demonstrate sufficient capacity to manage expected recycled water in a sustainable and reliable manner over the expected lifespan of the RWS.

The proposed RWIZ will entirely consist of landscaped areas which are distributed across the AIBP as irregular shaped zones. For irrigation efficiency and installation feasibility, small; non-contiguous and intricately-shaped areas are excluded. However, HB+B has indicated that these areas may be considered in the future following detailed hydraulic analysis for serviceability. Only the largest, relatively uniform portions of proposed landscaped gardens throughout the AIBP are delineated as part of the RWIZ.

Modelling was completed to simulate irrigation of recycled water over the AIBP. The results demonstrate minor irrigation runoff occurs in a typical year during May, June and July. The proposed 3.65ha irrigation RWIZ is limited by the hydraulic factor of irrigation runoff. This limiting criteria as well as all other metrics under the proposed RWIZ scenarios pose low risk to the surrounding environment and exhibit sustainable recycled water land irrigation as well as improving deficiencies occurring at background conditions such as nitrogen leaching and plant water stress.

The modelling assumptions and results assume the adoption of appropriate irrigation scheduling and management protocols, as well as use of automated controls to ensure that recycled water irrigation within the RWIZ remains both 'effective' and 'sustainable'. This is summarised in the following table.

Table 9 Irrigation Scheduling and Environmental Monitoring

Component	Description	Recommendation

Irrigation Timing	Irrigation is assumed to occur one - two discrete intervals during each available day. Final details of the proposed irrigation schedule depend on the capabilities of the hydraulic distribution design, pump assembly and zoning requirements to service the RWIZ.	It is recommended that irrigation is limited to daylight hours (7am-5pm) to ensure that any issues can be easily identified by visual observation.
Irrigation Controls	It is anticipated that irrigation (pump) control timers will be installed to ensure the maximum sustainable irrigation rates are not exceeded.	Flow meters are to be installed on the RWI discharge line to measure the volume of irrigation water applied during each interval, with the total volumes recorded daily. After 1st year of data collection, the MEDLI water balance should be reviewed and the irrigation schedule amended if required.
Soil Moisture Management	Irrigation operations should ensure that all recycled water is assimilated within the area of application, avoiding both surface runoff and excessive deep infiltration. RWI should be undertaken on a suitable soil moisture deficit basis, i.e. the soil is always allowed to partially dry before applying a controlled amount of recycled water to increase soil moisture levels to field capacity.	To avoid over irrigation of poorly drained areas, soil moisture monitoring is recommended using soil moisture probes and regular operator inspection of the RWIZ. Additionally, regular visual inspections of the irrigation supply infrastructure and the RWIZ for signs of soil structural problems, over-irrigation, vegetation stress and equipment failure or damage (e.g. leaks).
Soil Monitoring	Routine soil monitoring is important to detect early signs of (physical or chemical) changes within the RWIZ as a result of recycled water irrigation.	It is recommended soil sampling be undertaken in at least one location within the RWIZ at 6-monthly intervals for the first 2 years of scheme operation, then annually thereafter. Samples should be collected from topsoil (200mm) and subsoil (500mm) locations at each monitoring site.
Groundwater Monitoring	Soil groundwater monitoring should be maintained throughout the year especially during winter months. Groundwater monitoring is used to determine whether to irrigate that day. Groundwater Monitoring should be conducted on an as monthly basis during January- April, and September - December. Monitoring should be conducted on an as weekly basis during May - August and along with any day(s) after a rain event.	To ensure operation of the RWI scheme is not contributing to increases in the shallow groundwater table beneath the RWIZ, it is recommended to install two-three (2-3) observation wells within the RWIZ at selected low points. Based on observed soil conditions, the minimum installed depth of each well should be 1.8m or at refusal (bedrock). Standing water level (SWL) within each well should be recorded monthly.

4.3.4. Flood

Arcadis were engaged to prepare a Flood Letter which investigates the proposal's compliance with Council requirements in the On-site Sewage Management and Greywater Reuse Policy (EH002) and the DCP.

It is a Council Policy to ensure OSSM systems be situated outside flood affected areas and comply with specified buffer distances. Additionally, all electrical and mechanical components are to be above the 1% Annual Exceedance Probability (AEP) flood levels. These requirements highlight the importance of the OSSM system installation appropriately mitigating and managing flood impacts.

The Flood Assessment Arcadis previously completed for the AIBP local DA (DA24/0294) identified flood levels at the Unnamed Creek west of the site. The OSSM site's elevation at RL 41.2m AHD exceeds the Probable Maximum Flood (PMF) levels identified in the report. This indicates the development is positioned out of flood risk and is complying with council requirements.

The plans demonstrate that the proposed development generally meets the regulations and standards set by council. The proposed development meets the offset requirements by being 100m away from the Unnamed creek and is not adjacent to any mapped or significant overland flow path.

As a result, the proposed OSSM system meets the stipulated requirements for flood management and presents a well-considered approach to environmental sustainability and infrastructure resilience.

4.3.5. Bushfire

The Bushfire Assessment, conducted by Peterson Bushfire, has been designed to ensure that the necessary bushfire protection measures are in place, in accordance with the 'Planning for Bushfire Protection 2019' (PBP) guidelines as the site has been identified as bushfire prone land.

The assessment has identified potential bushfire hazards in the vicinity of the site. These include a possible grassland hazard along the north-western and western boundaries of Lot 2, as well as a forest corridor beyond Patons Lane to the north. The effective slope of the site was also measured during the assessment to understand its potential influence on fire behaviour. The effective slope class underneath the hazards is 'downslope 0-5 degrees'.

Furthermore, the site was evaluated against the Bushfire Attack Level (BAL), which confirmed that the proposed facility is located beyond any BAL. This demonstrates that the development is more than 100 m from forest hazards and more than 50 m from grassland hazards.

As a result, the assessment makes the following recommendations:

- Safe access and egress between the development and the public road system for fire-fighters
- defendable space between structures and the bushfire hazard/boundaries to allow fire-fighters to gain access to all sides of the structures and the bushfire hazard at the boundary; and
- Access to a reticulated water supply (e.g. hydrants) for firefighting.

These measures are available and provided by the proposed development location and layout. Additional bushfire protection measures are not required as the proposed development complies with the PBP.

4.3.6. Traffic

The Traffic Letter conducted by Arcadis has been prepared to review the likely traffic impacts associated with the proposed development. This letter supplements the Traffic Impact Assessment prepared for the AIBP local DA (DA24/0294) to review the likely construction and operation traffic impacts generated by the OSSM facility.

Construction

During construction of the proposed development it is estimated to involve up to 25 workers during peak construction activity onsite. The peak period for construction traffic is expected to occur in the AM peak hour when up to 30 vehicles will enter and exit the site, however the values represented during the peak hour are expected to be lower for most of the construction phase. A summary of the peak construction traffic generation is summarised below.

Figure 8 Summary of peak construction traffic generation

Vehicle type	Peak Hour	Inbound movements	Outbound movements
Light vehicles	AM peak	25	0
	PM peak	0	25
Heavy vehicles	AM peak	5	2
	PM peak	1	1

Source: Arcadis

The projected traffic demand during the construction phase is assessed to have minimal impact on traffic and the broader road network with an additional 25 light vehicle movements and 4 heavy vehicle movements during both AM and PM peak hour.

If the proposed development construction occurs during the same time as the peak of the broader AIBP bulk earthworks activity, any impacts to Patons Lane can be managed through the implementation of a Construction Traffic Management Plan.

Operational Traffic

Typical operational traffic is expected to involve a single maintenance vehicle on an adhoc basis, and no staff are proposed to be permanently based onsite. Parking associated with maintenance facility can be wholly accommodated on site. As such the proposed facility is anticipated to have negligible impact on the surrounding road network.

Design

A review of the proposed design was undertaken to confirm the layout of the proposed development generally aligns with the DCP. Maintenance vehicles will be able to enter and exit the site in a forward direction. With a turnaround facility providing space for larger vehicles up to 8.8m in length to turn around within the site.

To conclude, the traffic assessment supports the construction and operation of the proposed OSSM facility. It demonstrates any traffic impacts during construction can be effectively managed in conjunction with activity occurring across the AIBP through the implementation of a Construction Traffic Management Plan.

4.3.7. Integrated Water Cycle Management Plan

An Integrated Water Cycle Management (IWCM) Report has been prepared by Henry & Hymas to demonstrate the proposed design and stormwater management aligns with best practice principles and Councils DCP.

Stormwater Quantity

Key issues related to stormwater quality are the increase of impervious surfaces which will increase the peak stormwater flows from the site during storm events. On-site Stormwater Detention (OSD) is proposed for the development to ensure that runoff from the development is appropriately managed in accordance with Council's requirements. Flows from the site will be reduced via an underground tank with 245m^3 of detention storage and one orifice plate.

Pre and post developed flows were calculated for the relevant storm events. It demonstrates the proposed development meets Council's stormwater detention requirements, as illustrated in the following Table.

Table 10 Catchment Flows

Storm event	Pre-developed Flows (m3/s)	Post – Developed Flows (m3/s)
20year ARI storm	0.041	0.041
100year ARI storm	0.065	0.053

Source: Henry & Hymas

In summary, the site stormwater system has been designed to safely convey the flows through the site and within the capacity of the downstream system. The proposal aligns with the findings and assumptions outlined in the IWCM Report prepared for the AIBP local DA (DA24/0294).

Water Quality

The development may potentially increase gross pollutants, sediments, hydrocarbons and nutrient concentrations in stormwater runoff. To manage this impact on downstream water quality, water quality measures at source and end of line treatments will be provided. Council requires post developed pollutants to be reduced to specified targets.

The water quality reductions have been met by the proposed development. They have been satisfied through the usage of 11 x 690 mm Psorb Cartridges and Oceanguard pit baskets in each grated inlet pit. In addition, a 10kL rainwater tank is proposed to irrigate into 201m^2 of landscaped area. The remainder of the landscaping area on site will be irrigated via recycled water from the OSSM facility. Stormwater is proposed to discharge to the storage basin in the north west corner of the site, which ensures that the MARV requirements are met.

Furthermore, water conservation targets are specified by Council to achieve a minimum of 80% non-potable demand to be provided through rainwater or stormwater harvesting storages. Two 5kL Rainwater Tanks are proposed, which will achieve a 89.3% reuse rate and comply with Council's requirement.

4.3.8. Waste

A Waste Management Plan has been prepared by HB+B Property to demonstrate the appropriate waste disposal activities relating to the proposal during demolition, construction and operational phases.

Demolition

No structures currently exist on site. These structures were demolished in early 2023 under a separate Complying Development Application. Therefore, no waste will be generated from this phase.

Construction

Rubbish skips and bins will be used during the construction stage for the collection of general construction waste and material packaging. All rubbish placed in skips will be removed from site by a designated waste removal contractor and taken to an approved and licensed waste disposal and recycling facility. At no time will rubbish skips or bins be stored on the footpath or roadway during the course of the works.

All waste will be dealt with and disposed of in accordance with Penrith City Council's requirements.

Operation

Screenings from the prescreen and biosolids from the screw press will be processed and stored within the sludge handling room for removal by a specialised waste contractor and disposed of at an appropriately licenced facility.

One operational maintenance contractor will visit the site weekly on an ad hoc basis. No staff are proposed to be to be permanently based on site, therefore general waste is expected to be low. Any general waste will be disposed of by the maintenance contractor. Green waste will be managed by a separate landscape maintenance contractor.

Maintenance and waste vehicles will enter and leave the site in a forward direction at all times.

4.3.9. Air Quality

An Air Quality Impact Assessment (AQIA) has been prepared by EMM Consulting to assess any air or odour impacts generated by the site. Modelling and assessment studies were completed to predict any adverse impacts to the surrounding amenity.

Several residential properties and future industrial properties surrounding and within the AIBP were selected as assessment locations for the AQIA modelling (Refer following Figure). In addition, existing sources of odour was reviewed for neighbouring sources of industrial air pollutant emissions. It identified the Bingo Industries' Patons Lane Resource Recovery Facility which is approximately 0.8km from the site. Previous modelling for this site was completed, and confirms it is unlikely that cumulative odour impacts with the facility would occur. Therefore, no further consideration of odour emissions from the facility is undertaken.

Figure 9 Assessment Locations

Source: EMM Consulting

Aquacell advised the potential odour emission generating processes at the project include the following:

- Three external in-ground storage tanks, specifically the buffer tank, the wet well tank and sludge storage tank.
- Two waste activated sludge (WAS) holding tanks within the main shed.
- Two pre-screens and one dewatering screen, and associated screenings storage bins, within the main shed.

The following odour mitigation methods apply to the above processes:

- The external tanks will be enclosed and fitted with passive carbon filters to treat potential fugitive odour emissions.
- The two WAS holding tanks within the main building will be vented to passive carbon filters.
- The area of the pre-screens and dewatering screen will be ducted, with collected air diverted to two scrubber devices to be located on the northern wall of the main shed.

Aquacell have advised that the following odour emission reductions apply to the above mitigation methods:

- Passive carbon filters – 99% reduction.
- Scrubber device – greater than 95% reduction.

Aquacell highlight all other components of the project will be sealed or have negligible odour generation potential. Therefore, there are no other odour emission sources identified in the assessment.

Odour emissions were estimated using conservative odour monitoring sample from the Sydney Water odour emissions database. The results demonstrate that the predicted odour concentrations from the facility were below the applicable NSW EPA odour impact assessment criteria for urbanised areas at all assessment locations.

The results of the dispersion modelling convey that the operation of the facility is unlikely to generate adverse odour impacts in the surrounding environment. The proposed odour emission mitigation measures advised by Aquacell are likely to be effective at limiting the potential odour emission generation from the facility.

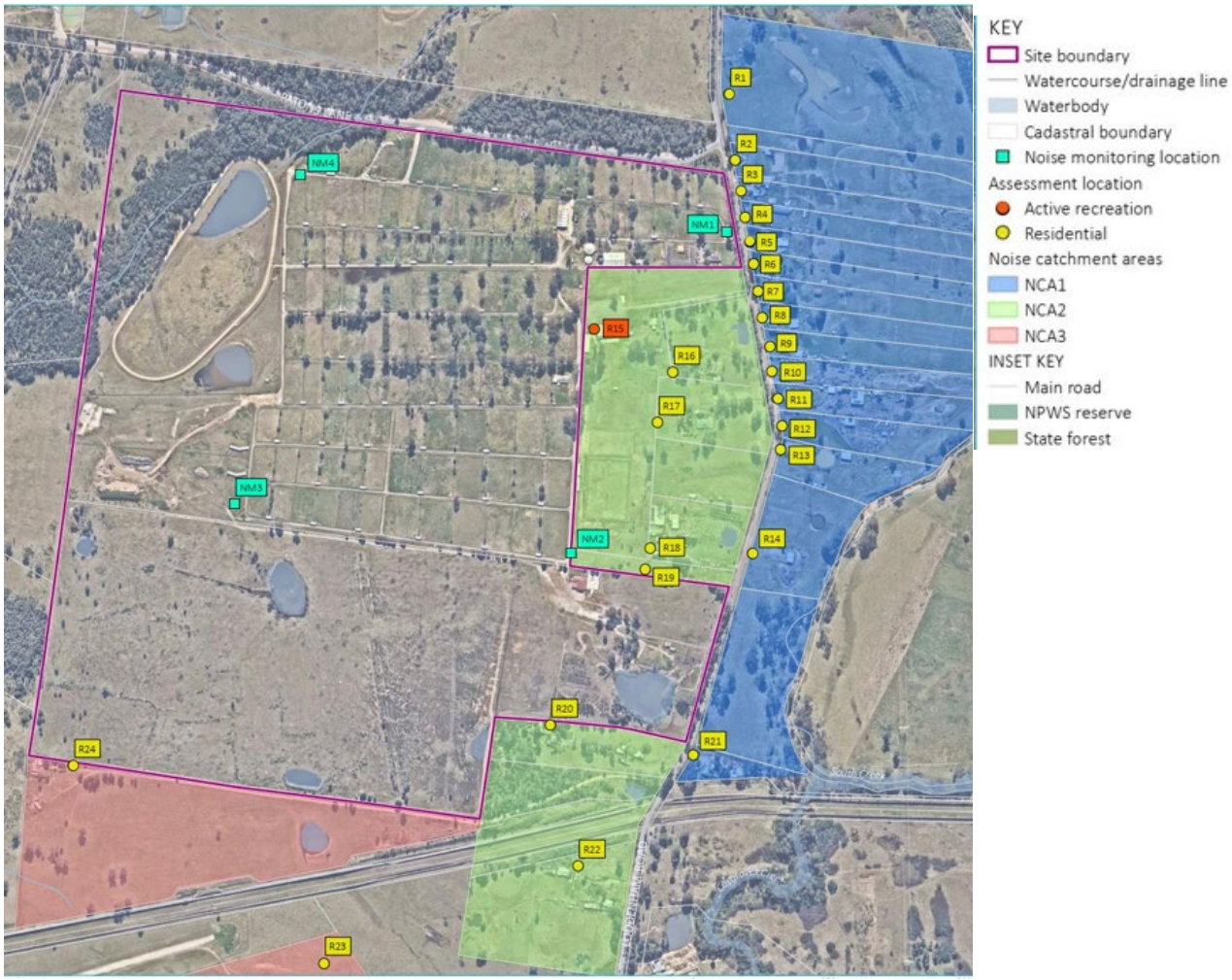
4.3.10. Noise

A Noise and Vibration Impact Assessment has been prepared by EMM Consulting to predict the noise emissions generated by the site construction and operations, which will also be assessed against the relevant objectives. EMM have undertaken previous assessments for the broader AIBP site, which will be used to help inform the projects modelling and assessment.

Noise locations were selected as part of the broader AIBP masterplan. They have been separated into three noise catchment areas (NCAs) as described below:

- NCA1 represents residential assessment locations on the eastern side of Luddenham Road. The dwelling façades face Luddenham Road and are exposed to road traffic noise.
- NCA2 represents residential assessment locations on the western side of Luddenham Road. These properties are all set back from Luddenham Road and would be expected to experience lower noise from existing road traffic which is consistent with noise monitoring conducted at the site. It is noted that these properties have been included in the precinct structure plan and rezoned to E4 General Industrial.
- NCA3 represents remote assessment locations which are removed from Luddenham Road.

Figure 10 Noise Monitoring and Assessment Locations



Source: EMM Consulting

Construction Noise

Construction equipment sound power levels (Lw) have been sourced from an EMM database of similar equipment based on measurements at other construction sites. Earthworks and site-preparation are expected to be the most significant noise impact.

Construction noise levels are predicted to comply with the construction noise management levels (NML) at NCA1 and NCA3. Minor exceedances of NML of up to 2 dB are predicted for some receivers in NCA2. No exceedances of the highly noise affected level are predicted.

Table 11 Predicted Construction Noise Levels

Noise catchment area	Predicted noise level	Construction NML	Highly noise affected level	Exceedance of construction NML	Exceedance of highly noise affected level
NCA1	41-50	50	75	Nil	Nil
NCA2	38-47	45	75	Up to 2 dB	Nil
NCA3	36-41	45	75	Nil	Nil
Receiver R15 (non-residential)	53	65	N/A	Nil	N/A

Source: EMM Consulting

Construction vibration was assessed, noting that the nearest assessment location to the project is over 500m from the lot boundary, well beyond the recommended minimum working distance for cosmetic damage or human response. Therefore, no vibration impact is predicted from construction activities associated with the OSSM facility.

Operational Noise

Modelling for operational noise included the future warehouse and office buildings as barriers as it is assumed they will be constructed prior to the full operation of the OSSM facility.

Operational noise sources were assessed, noting all significant noise sources will be located within the plant shed. All equipment has been assumed to operate concurrently and have 100% utilisation for the purpose of the assessment. Maintenance activities were also reviewed, highlighting that emptying of the sludge pan is expected to be the only significant noise generating regular maintenance activity.

Operational scenarios have been developed to assess a worst-case 15 minutes for regular operation and maintenance activities. This includes:

- OSSM continuous operation
  - continuous operation of all equipment within plant shed.
  - continuous operation of the odour scrubber fan.
  - This scenario will be assessed for day, evening and night periods.
- OSSM maintenance
  - continuous operation of all equipment within plant shed.
  - continuous operation of the odour scrubber fan.
  - continuous operation of the vacuum pump truck.
  - This scenario will be assessed for day period only.

Predicted operational levels are provided in the following Table. Results for each noise catchment area are provided for day, evening and night periods. The highest result for a receiver within each noise catchment area has been provided. It confirms no exceedance of predicted noise trigger level is predicted.

Table 12 Predicted Operational Noise Levels

Assessment period	Noise catchment area	Predicted noise level		Project noise trigger level (PNTL)	Exceedance of Project noise trigger level (PNTL)
		OSSM continuous operation	OSSM maintenance[1]		
Day	NCA1	28	36	45	Nil
	NCA2	22	39	40	Nil
	NCA3	<20	33	40	Nil
	R15	21	35	53	Nil
Evening	NCA1	28	NA	43	Nil
	NCA2	22	NA	40	Nil
	NCA3	<20	NA	39	Nil
	R15	21	NA	53	Nil
Night	NCA1	28	NA	38	Nil
	NCA2	22	NA	35	Nil
	NCA3	<20	NA	35	Nil
	R15	21	NA	53	Nil

1. OSSM maintenance activities will occur during the day period only and predictions are combined with normal operations as relevant.

Source: EMM Consulting

Sleep disturbance assessment was completed, and found no exceedance of the sleep disturbance screening target.

In addition, the cumulative operational noise from the AIBP has been previously assessed by comparing operational noise predictions against project amenity noise level. The results demonstrate there are no predicted exceedances of amenity noise levels.

Overall, the proposed OSSM facility will not generate any exceedances during the operation or construction stage of the development.

4.4. The Suitability of the Site for the Development

In accordance with s4.15(1)(c) of the EP&A Act the site is considered highly suitable for the proposed development for these reasons:

- The proposed works are permissible within the zone. The proposed OSSM facility will facilitate development consistent with the intent of the zone objectives.
- The Project aligns and has been designed in respect to the emerging local character of the AIBP and broader locality with adequate consideration is given to the site-specific constraints and opportunities.
- The detailed impact assessment undertaken for the Project demonstrates that the proposed development can occur without any unacceptable environmental impacts to the nearby residential land and the surrounding transport network.

4.5. Any Submissions Made In Accordance With The Act Or Regulations

In accordance with s4.15(1)(d) of the EP&A Act, it is acknowledged that submissions arising from the public notification of this application will need to be considered by the Consent Authority in its assessment. The proponent will undertake to formally respond and attempt to resolve to any relevant issues relating to the proposed development.

4.6. The Public Interest

In accordance with s4.15(1)(e) of the EP&A Act the proposed development is considered in the public interest for these reasons:

- The proposal is consistent with relevant State and local strategic plans and demonstrates a high level of consistency with the relevant planning controls.
- No adverse environmental, social or economic impacts will result from the proposal.

5. Conclusion

The SEE demonstrates the proposed development is appropriate for the site and the locality for these reasons:

- The proposal satisfies the applicable local and state planning controls.
- Responds positively to the surrounding site context. The proposal seeks consent to erect a plant shed and storage tanks of minor scale. They employ colours and materials that are similar to the selection employed for the broader AIBP in order to uphold a similar character. Adequate landscaping is employed to create green buffers along the site's interface and visually filter views to the site. The simple, high quality design of the site ensures it respects and is compatible with the future character of the AIBP.
- The proposal will provide a positive environmental impact as it will enable the AIBP to use recycled water to meet its non-potable water demand. Recycled water will be used for irrigation and toilet flushing in order to conserve water and make a positive environmental impact. Any unacceptable environmental impacts have been appropriately managed to avoid any adverse impacts.
- The proposal is in the public interest as the OSSM facility will support the broader AIBP to be sustainable and reduce its water demand.

Accordingly, it is submitted that the proposal is in the public interest and should be approved subject to appropriate consent conditions.

Disclaimer

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