

Somersby Drill Mud and Oily Water Recycling Facility (SSD- 62863964):

Waste Management Plan

Lawsan Property Holdings Pty Ltd



Prepared for Lawsan Property Holdings Pty Ltd

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Executive Summary

Lawsan Property Holdings Pty Ltd (Lawsan) is proposing to install and operate a drill mud and oily water recycling facility within an existing industrial site at 134 Somersby Falls Road, Somersby NSW (Lot 1, DP787857). The Proposal will receive up to 100,000 tonnes per annum of drill mud from hydro-excavation and non-destructive digging operations, and 50,000 tonnes per annum of oily water (J120 trackable waste) from manufacturing operations, services station forecourts, mechanic workshops and car/truck washes.

The drill mud recycling plant will receive drill mud that consists only of a soil and water slurry from sites with no known contamination. The incoming drill mud will be processed through a purpose-built plant to separate the water and solid fractions, with the solids being size separated into the following products suitable for reuse in civil and construction projects:

- Aggregates (>5mm grain size);
- Sands and soils (75µm – 5mm grain size); and
- Silts and clays (<75µm grain size).

The incoming oily water (J120) will be processed through a coalescing plate separator to separate the oil fraction from the water, and to remove other contaminants such as soil and general litter.

Construction Waste Management

As the Proposal is to be installed within an existing industrial facility, constructions works will be limited to:

- Construction of a 5m wide awning along the southern side of the building over all drill mud and oily water receival bays and load out bays. This will ensure that decanting and loading of all vehicles is done undercover and can be performed in all weather conditions;
- Concrete rollover bunding under the external awning to capture and enable the clean-up of any spills or sediment from the recycling process;
- Containment bunding around all above ground storage tanks to prevent the release of any process water (in the event of tank failure or an incident);
- Excavation within the building for the installation of underground liquid holding tanks and an inground, concrete-lined pit for the vibrating dewatering screens;
- Installation of prefabricated liquid storage tanks, recycling plant, and all associated equipment, including pumps, plumbing and electrical;
- Installation of acoustic treatments to the northern, southern and western building facades and the roof;
- Installation of high-performance roller doors with an acoustic performance of at least R_w 22dB; and
- Construction of a 3m high noise barrier, constructed from concrete panels, along the southern side of the hardstand and on the eastern side from the south-east corner to the point in line with the building's south-east corner.

The overall recycling rate during site preparation and construction is estimated to be more than 99%.

Operational Waste Management

The general site operations (excluding the drill mud and oily water recycling process) are expected to generate minimal waste. Waste generation will be largely a result of general landscaping maintenance and staff activities (e.g. meals). Approximately 80% of the general waste generated during operations is expected to be recyclable.

The main waste generated by the Proposal will be from the drill mud and oily water (J120) recycling processes. The drill mud process is expected to recover up to 60,000 tonnes of soil materials per annum, with 100% of this predicted to be suitable for reuse in civil, construction and landscaping projects as fill material and soil replacements. All solids will be discharged from the processing plant directly into hook lift bins on the concrete floor within the building. All solids will be transported in covered hook lift bins to a facility licensed to accept General Solid Waste (non-putrescible). The receiving facility will test the material for compliance with *The treated drill mud order 2014* prior to further processing/mixing/blending for off-site reuse. Less than 1,000 tonnes of organic and other lightweight material (e.g. general rubbish within soil) is expected to be removed from the incoming waste stream. This material will be transported in covered hook lift bins to a facility licensed to receive General Solid Waste (non-putrescible) for further processing or disposal.

The drill mud process is expected to recover 40ML of water per year. An estimated 32ML of the recovered water is expected to be suitable for off-site reuse in industrial or agricultural applications (e.g. as process water, for dust suppression). A water characterisation program is proposed for the first 12 months of operation to enable determination of suitable end uses. A further 8ML of recovered water is expected to be discharged to sewer as Liquid Trade Waste in accordance with an agreement with Central Coast Council.

The oily water recycling process is expected to recover approximately 5,000 tonnes of oil per annum. The oil will be transported to a facility licensed to receive waste oil (J120). This oil will be re-refined to produce lubricant base oils, reducing the need for virgin oil resources. The process is expected to generate up to 500 tonnes per annum of oily sludge requiring disposal as a liquid waste (J120). This material will be transported directly to a facility licensed to receive liquid waste containing oil. The oily water recycling process is expected to recover approximately 45ML of water per year. The recovered water will be discharged to sewer as Liquid Trade Waste in accordance with an agreement with Central Coast Council.

Incoming drill mud will be discharged directly into the drill mud processing plant located within a pit inside the building. Recovered solids will be discharged from the processing plant directly into segregated hook lift bins on the concrete floor within the building. Recovered water will be pumped to a self-bunded tank located externally on the northern side of the building. Incoming oily water (J120) will be discharged into one of two 20kL underground storage tanks. Following processing, recovered oil (J120) will be pumped to a third 20kL underground storage tank, water will be pumped to an aboveground tank within the building, and sludge will be captured within a holding tank integrated into the coalescing plate separator. The Site can safely store a maximum of 550kL of liquids and 103 tonnes of solids at any one time.

Quality Control Processes – Liquid Waste Acceptance

All drill mud must be accompanied by a site contamination assessment that demonstrates the drill mud has been generated at a site free from contamination, including asbestos. Where a site contamination assessment is not available, drill mud will be held at the generator's site whilst NATA accredited laboratory testing of the soil fraction is undertaken. Drill mud must comply with the quality criteria set out in *The treated drilling mud order 2014*, and must also be demonstrated to be free from asbestos, prior to being accepted at the Site for processing.

Oily water (J120) will only be accepted from customer sites that have undergone characterisation and validation testing that includes NATA accredited laboratory testing in accordance with Council's *Liquid Trade Waste Policy* acceptance limits for organic and inorganic compounds and metals. Oily water (J120) will only be accepted from sites that demonstrate compliance with the validation program. For sites generating infrequent oily water loads, each load will be tested prior to acceptance. For sites generating a consistent supply of oily water, a four-week characterisation and validation program will be undertaken. Where the liquid waste complies with the four-week testing program, further testing will only be required on an annual basis or following changes to the generator's on-site processes.

A proving period is proposed for at least the first 12 months of operation. This proving period will involve operation at 20% of the total facility capacity to enable retention of all treated water for a period of three days to enable laboratory testing of the water. All water will be sampled and tested in accordance with Council's *Liquid Trade Waste Policy* to demonstrate that the processing plant is capable of producing water that meets the quality requirements. Following completion of the proving period, capacity would be increased and monthly laboratory testing for a broad suite of analytes would be implemented in conjunction with continuous on-line monitoring for general indicators of water quality, including turbidity, pH and total dissolved solids. The analytes and test methods would be determined in consultation with Council and NSW EPA.

Conclusion

The Proposal will provide recycling infrastructure not currently available within the Central Coast region. At present, drill mud and oily water are transported to facilities in Sydney, Newcastle and Bathurst. The Proposal will provide a more cost-effective recycling solution by reducing transport costs, which will in turn increase recycling rates and improve the management of these liquid wastes.

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1. Introduction

This Waste Management Plan (WMP) has been developed to demonstrate how waste will be avoided or minimised, reused, recycled and/or lawfully disposed during the construction/installation and operation of Lawsan Property Holdings Pty Ltd (Lawsan) drill mud and oily water recycling facility (the Facility) proposed for 134 Somersby Falls Road, Somersby NSW. The Facility will receive and process up to 100,000 tonnes/year of drill mud, and 50,000 tonnes/year of oily water to produce a range of soils/aggregates, recovered oil suitable for refining, and clean water for reuse in industrial and agricultural applications or disposal as Liquid Trade Waste (the Proposal).

This WMP has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued on 30th October 2023 and the requirements of Chapter 2.14 Site Waste Management of the *Central Coast Development Control Plan 2022* (CCDCP). This WMP also addresses Lawsan's responsibilities to manage waste under the *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) and the *Protection of the Environment Operations Act 1997* (POEO Act). The WARR Act and the POEO Act govern the issues of waste generation, reuse, recycling, transport, and disposal and prioritise waste solutions according to how successfully they conserve natural resources. Priority is given to reducing the overall amount of waste, followed by the reuse, and then recycling of any wastes that are unavoidably created, with disposal as a last resort. The aim is to extract the maximum practical benefits from the products and to manage waste in the best possible way.

1.1. The Site

The property is located at 134 Somersby Falls Road, Somersby and is described as Lot 1, DP787857 within the Central Coast Council (Council) local government area. The property consists of a newly built industrial shed, with internal office, storage area and staff amenities over a ground floor and mezzanine, and concrete hardstand with parking for 12 passenger vehicles.

1.2. Background

Lawsan is seeking approval to install and operate a drill mud and oily water recycling facility within the existing industrial shed. The Proposal will receive drill mud in the form of non-destructive digging mud from civil, construction, and mining operations, and oily water from mechanical workshops, service station forecourts, and vehicle washes. Liquid wastes will be transported into and out of the Site using 12.5m heavy rigid vehicles. Incoming liquid wastes will be transferred to holding tanks or inground pits within the building. The resulting separated liquid will be temporarily stored in aboveground tanks within the building and hardstand area, and solids will be stored in concrete storage bays within the building. No solids will be stored outdoors.

Oily water will be processed through a Coalescing Plate Separator, with the resulting oil and clean water transferred to separate holding tanks for testing. Recovered oil will be transported to licensed recycling facilities for further processing or refining into new oil products. Water separated from the oily water recycling process will be discharged to sewer in accordance with a Liquid Trade Waste Agreement with Central Coast Council.

Drill mud will be treated using specialist plant and equipment that includes the following:

- Initial separation of large aggregates (e.g. sand and grit) from water occurs through a vibrating dewatering screen. Incoming material is tipped directly into the screening plant which is to be located in a concrete-lined pit in the shed floor;
- Separated water is then passed through a sand classification and dewatering system that uses a vibrating screen and centrifugal sand slurry pump to produce two grades of sand;
- Recovered sludge is transferred to a buffer tank prior to entering the thickening tank to allow settlement of fines with the aid of flocculants;
- Remaining sludge is then passed through a decanter centrifuge to eliminate waste from the washing plant and produce a dry filter cake. Wastewater is returned to the thickening tank; and
- Solids recovered during each stage of the separation process will be discharged into three-sided storage bins on the concrete floor or into hook-lift bins.

Recovered water from the drill mud recycling process will be temporarily stored within tanks located to the northern side of the site (external to the building) before being tested for compliance with specifications and then transported off-site in 12.5m tankers. A target of 80% of clean water from the drill mud recycling process will be transported off-site for reuse in approved industrial and agricultural applications. Up to 20% of the recovered water from drill mud

will be discharged to sewer via a Liquid Trade Waste Agreement with Central Coast Council. Water not suitable for reuse or discharge will be transported to a licensed facility for further treatment or disposal.

All recovered soils, aggregates, and fines will be transported off-site to a licensed facility as General Solid Waste for testing and further processing to create a variety of soil replacement products or engineered fill materials for beneficial reuse in construction and landscaping projects.

The Proposal also includes the following modifications to the existing structures on-site:

- Construction of a 5m wide sail awning along the southern side of the shed to provide weather protection over the roller doors;
- Concrete rollover bunding under the proposed awning to capture and enable the clean-up of any spills or sediment from the recycling process;
- Containment bunding around the internal perimeter of the shed to prevent the release of any process water (in the event of a tank failure or other incident);
- Excavation within the shed for the installation of underground oily water and recovered oil holding tanks and the inground drill mud equipment pit;
- Installation of acoustic treatments to the northern, southern and western building facades and the roof;
- Installation of high-performance roller doors with an acoustic performance of at least R_w 22dB; and
- Construction of a 3m high noise barrier, constructed from concrete panels, along the southern side of the hardstand and on the eastern side from the south-east corner to the point in line with the building's south-east corner.

1.3. Objectives

This WMP has been prepared to address the following outcomes for waste and resource planning defined in Chapter 2.14 of the CCDCP:

- Create safety – eliminate and minimise health and safety risks associated with waste management activities including generation, transfer, consolidation and collection;
- Protect amenity – minimise disturbances at all development stages to the occupier and surrounding community including visual unsightliness, noise, odour, dust and debris, and impacts from transfer vehicle movements;
- Deliver efficiency – effective consolidation of materials and waste prior to offsite transport for recovery or disposal, and appropriate collection frequencies to minimise the number of vehicles required for transport; and
- Build a circular economy – enabling and encouraging waste avoidance, followed by improving resource recovery and reducing the amount of waste sent to landfill.

This WMP has also been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) as they relate to waste management (Table 1.1).

Table 1.1. SEARs relating to waste management and the relevant section of the report.

SEARs Requirement	Relevant Section of WMP
Description of each of the waste streams that would be accepted at the Site including maximum daily, weekly and annual throughputs and the maximum size for stockpiles	Section 3.3.1
Details of the source of the waste streams to justify the need for the proposed processing capacity	Section 3.3.1
Description of waste processing operations (including flow diagrams for each waste stream), including a description of the technology to be installed, resource outputs and the quality control measures that would be implemented	Sections 3.3.2 and 3.3.3
Details of how waste would be stored (including the maximum daily storage capacity of the Site) and handled on site and transported to and from the site including details of how the receipt of non-conforming waste would be dealt with	Sections 3.3.2, 3.3.3 and 3.4
Detail the developments waste tracking system for incoming and outgoing waste	Section 3.3.3.2, Appendix 1
Details of the quantities and classification of all waste streams to be generated on site during the development and their final dispatch locations	Table 3.6 and Table 3.7
Details of the waste management strategy for construction and ongoing operational waste	Sections 3.2 and 3.3

SEARs Requirement	Relevant Section of WMP
Details of consistency with the EPA's <i>Standards for Managing Construction Waste in NSW</i> (November 2018)	Section 3.8
Details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the <i>NSW Waste and Sustainable Materials Strategy 2041</i>	Section 2.1

1.4. Scope

This WMP assesses how the waste generated during site preparation, construction, decommissioning of the temporary construction site, and operation will be dealt with in the most environmentally sustainable way and contains the following information:

- Relevant legislation and guidelines for waste management for the Facility;
- The systems, procedures and initiatives proposed to address the management of waste materials generated during the site preparation, construction, decommissioning of the temporary construction site, and operation phases of the Facility;
- Safeguards, mitigation measures and monitoring to manage waste impacts during site preparation, construction, decommissioning of the temporary construction site, and operation;
- Roles and responsibilities of those involved in the design and implementation of waste management controls; and
- An effective monitoring, auditing and reporting framework to assess the effectiveness of the controls implemented.

2. Legislative and Regulatory Compliance

The key sources of waste management regulation in New South Wales include:

- The *Protection of the Environment Operations Act 1997*, which provides enforcement provisions, a licensing framework and other tools to protect human health and environment from the inappropriate use of waste;
- The *Protection of the Environment Operations (Waste) Regulation 2014* (Waste Regulation), which outlines the regulation of waste in NSW and the waste levy system;
- The *Protection of the Environment Operations (Clean Air) Regulation 2010*, which provides regulatory measures to control emissions from various sources including industry;
- The *Waste Avoidance and Resource Recovery Act 2001*, which sets the waste hierarchy and the *NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027*; and
- The requirements for classifying, handling, and disposing of particular types of wastes are defined in the *EPA Waste Classification Guidelines*.

2.1. NSW Waste and Sustainable Materials Strategy 2041

The *NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027* is the approved waste strategy for NSW. It sets out the long-term vision for managing waste, planning for infrastructure, reducing carbon emissions, creating jobs, and refocusing the way NSW produces, consumes, and recycles products and materials. The strategy will be used to track, review and measure NSW's progress toward meeting the targets set out in the National Waste Policy Action Plan. The targets are to:

- Reduce total waste generated by 10% per person by 2030;
- Have an 80% average recovery rate from all waste streams by 2030;
- Significantly increase the use of recycled content by governments and industry;
- Phase out problematic and unnecessary plastics by 2025; and
- Halve the amount of organic waste sent to landfill by 2030.

In addition to the above targets, NSW has committed to:

- Introduce a new overall litter reduction target of 60% by 2030 and a plastic litter reduction target of 30% by 2025, as set out in the *NSW Plastics Action Plan*;
- Set a goal to triple the plastics recycling rate by 2030, as set out in the *NSW Plastics Action Plan*;
- Reaffirm our commitment to the goal of net zero emissions from organic waste by 2030, as laid out in the *NSW Net Zero Plan Stage 1: 2020–2030*;
- Establish new indicators to help us track our progress on infrastructure investment and the cost of waste services; and
- Develop a new measure of the emissions performance of our waste and materials management. This will help us to track our performance across the lifecycle of materials.

A major focus area of the strategy is to increase waste infrastructure and services to meet our future needs. The highest priority is to extend the life of existing landfills by reducing the volumes of waste being sent to landfill. Whilst the focus is on waste avoidance, improving recycling capacity is an important aspect of waste management. This WMP will assist in ensuring that waste generated during construction and operation of the Facility is minimised and directed to the appropriate facilities for reuse, recycling, or disposal.

2.2. Central Coast Development Control Plan 2022

Chapter 2.14 of the *Central Coast Development Control Plan 2022* (CCDCP) sets out the requirements for site waste management for all categories of development for the management of resources and waste, including minimisation, storage, handling, recycling and disposal. The CCDCP requires that the WMP accompanying a development application with a value of >\$5 million be prepared by a suitably qualified waste consultant. The WMP must address the following four outcomes:

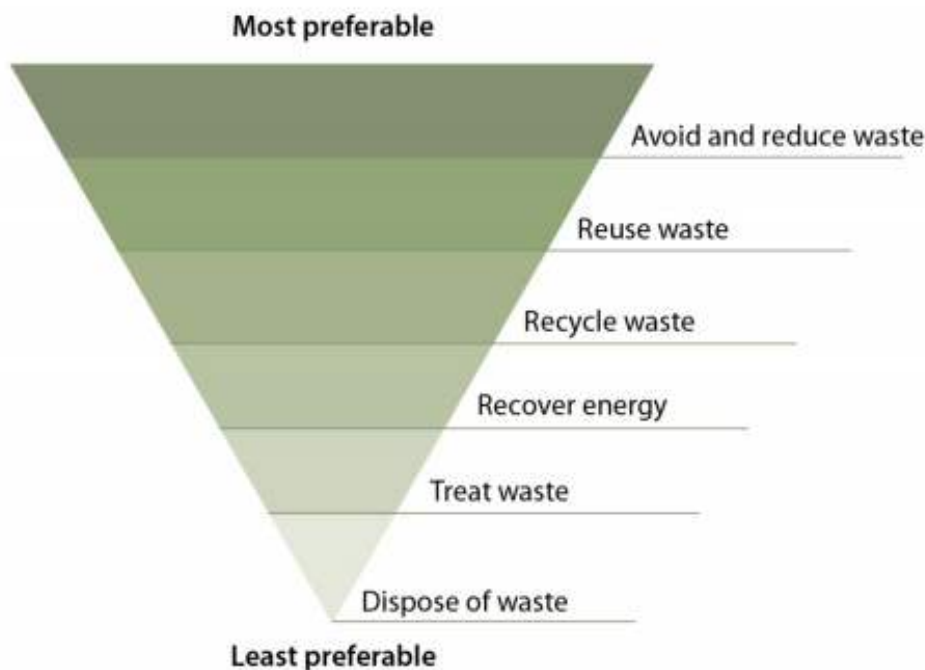
- Create safety – eliminate and minimise health and safety risks during waste generation, transfer, consolidation and collection;

- Protect amenity – ensure waste management systems have been designed to minimise amenity impacts, including visual, noise, odour and air quality impacts, to both the occupier and the surrounding community;
- Deliver efficiency – ensure waste materials are consolidated effectively and collected at an appropriate frequency to minimise vehicle movements; and
- Build a circular economy – enabling and encouraging waste avoidance, improving resource recovery and reducing waste sent to landfill.

2.3. Waste Hierarchy

The way waste is to be managed in NSW is driven by the Ecologically Sustainable Development principles. Guidance in managing waste has been provided by the hierarchical chart below (Figure 2.1).

Figure 2.1. The waste hierarchy as published in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.



Waste avoidance means reducing the quantity of waste being generated. This is the simplest and most cost-effective way to minimise waste. It is the most preferred option in the Waste Management Hierarchy and is therefore ranked first.

Reusing occurs when a product is used again for the same or similar use with no reprocessing. Reusing a product more than once in its original form reduces the waste generated and the energy consumed, which would have been required to recycle.

Recycling involves the processing of waste into a similar non-waste product consuming less energy than production from raw materials. Recycling spares the environment from further degradation, saves landfill space, and saves resources.

Disposing involves removing waste from worksites, compounds and offices and disposal in a licensed landfill site, or other appropriately licensed facility.

2.4. Classification of Waste Streams

Classifying waste into groups that pose similar risks to the environment and human health facilitates their management and appropriate disposal.

The following classes of waste are defined in clause 49 of Schedule 1 of the *Protection of the Environment Operations Act 1997* (POEO Act) and the NSW EPA's *Waste Classification Guidelines* (2014):

- Special waste;
- Liquid waste;
- Hazardous waste;
- Restricted solid waste;
- General solid waste (putrescible); and
- General solid waste (non-putrescible)

Where waste cannot be avoided, reused or recycled, it will be classified and appropriately disposed of. The classification of waste is based on the Waste Classification Guidelines. The guideline outlines how to assess waste, waste classification and sets out management options for the disposal of classified waste.

Waste classification will involve one or more of the following steps:

1. Establish if the waste should be classified as special waste;
2. If not special waste, establish whether the waste should be classified as liquid waste;
3. If not special waste or liquid waste, establish whether the waste is of a type that has already been pre-classified;
4. If the waste is not special waste, liquid waste or pre-classified, establish if it has certain hazardous characteristics and can therefore be classified as hazardous waste;
5. If the waste does not possess hazardous characteristics, it needs to be chemically assessed to determine what class of waste it is. If the waste is not chemically assessed, you must manage the waste as if it were hazardous waste; and
6. If the waste is chemically assessed as general solid waste, a further test is available to determine whether the waste is putrescible or non-putrescible. This test determines whether the waste is capable of significant biological transformation. If you do not wish to undertake this test, you must manage the waste as if it were general solid waste (putrescible).

The EPA's Waste Classification Guidelines provide a clear framework for accepting, testing and determining the management options for waste received to ensure human health and the environment are protected. These guidelines have been considered in developing this plan.

Oily water and waste oil (waste code J120) are listed as controlled waste under the *National Environment Protection (Movement of Controlled Waste between States and Territories) Measure 1998* (NEPM); therefore, the transport of this waste between States and Territories must be tracked. Under Schedule 1, Part 1 of the *Protection of the Environment Operations (Waste) Regulation 2014* transport of this waste within NSW must also be tracked. The proposed tracking of this waste material is discussed further in Section 3.3.3.1. Drill mud is not listed as a trackable waste.

3. Waste Management

3.1. Site Preparation / Excavation

All site preparation/excavation works required for the Proposal will be undertaken within the existing industrial building. The site preparation works will involve the removal of part of the concrete floor section and excavation of the underlying soil for the installation of the underground oily water and recovered oil storage tanks, and for the inground equipment pit, including ground sump, and an additional ground sump.

The site preparation phase is expected to generate wastes in the form of concrete, steel reinforcement and soil/fill. The Site consists of an engineered fill layer of approximately 300-500mm depth, consisting of a sandy gravel. The fill layer is underlain by natural material consisting of sandy silts and clays and sandstone bedrock. All concrete and excavated soil/fill will be placed directly into designated hook lift bins to be located within the building. Bins will be covered prior to collection to ensure no material escapes. All concrete and excavated material is expected to be suitable for recycling at a suitably licensed facility.

Other waste generated during the site preparation phase is expected to be limited to personal wastes (e.g. from meals) generated by construction staff. Two 240L wheelie bins will be provided on-site for recyclable materials and general rubbish. A commercial collection contract will be established prior to the commencement of site works.

Table 3.1 provides details of the estimated waste generation, including recommended receiving facilities.

3.2. Construction Phase

As construction of the Proposal will largely require the installation of prefabricated plant and equipment, holding tanks, and external awning, the waste generated is expected to largely result from concreting and packaging.

Construction activities will include:

- Fitting of litter baskets to stormwater pits;
- Concrete lining of the inground equipment pit and ground sumps;
- Construction of new concrete floor over the underground holding tanks;
- Installation of bunding around the internal perimeter of the building and the concrete rollover bunding around the loading/unloading bays;
- Temporary removal of the building roof to allow installation of drill mud recycling plant and equipment and internal aboveground holding tank (a prefabricated, modular tank);
- Installation of all plant and equipment, connection of all plumbing and electricals;
- Installation of acoustic insulation within the building;
- Installation of local exhaust ventilation;
- Line marking to identify pedestrian walkways and vehicle movement areas;
- Construction of footings for the external water holding tank and assembly of the prefabricated tank;
- Installation of architectural treatments to walls and roof of the building;
- Assembly of the awning; and
- Construction of the noise barrier.

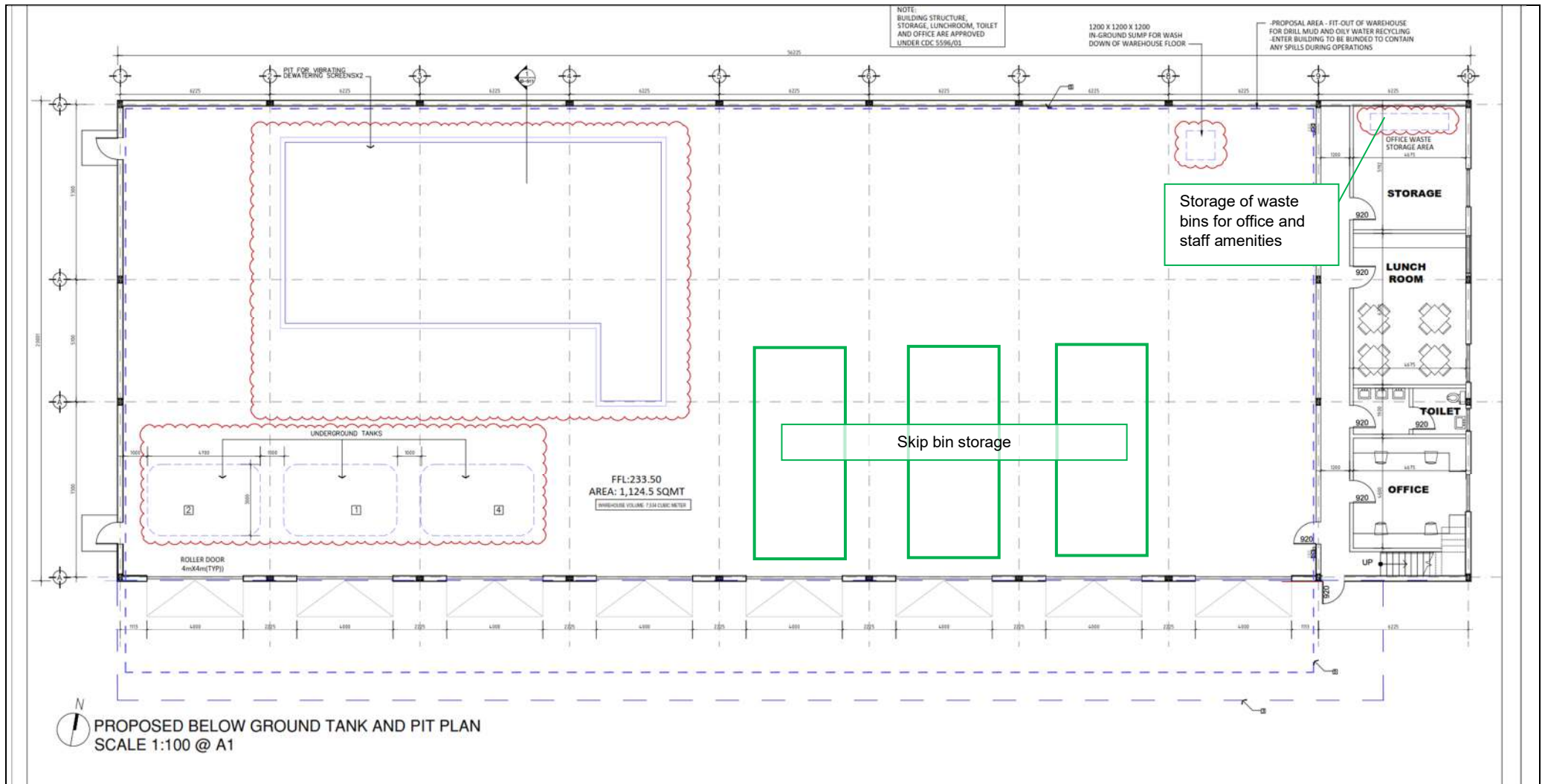
The waste streams expected to be generated during the construction phase are summarised in Table 3.1 below.

The overall waste recovery rate during the construction phase is predicted to be 99.9%. Designated skip bins or wheelie bins will be provided within the building for the separation of wastes (Figure 3.1). Lightweight materials will be placed in a lidded bin to prevent litter being blown around the Site. A commercial waste collection agreement will be established prior to works being undertaken on the Site.

Table 3.1. Waste types and amounts generated during site preparation and construction, and the proposed method of reuse, recycling or disposal.

Waste Classification	Description	Segregation Area / Containers	Reuse / Recycling / Disposal	Suggested Receiving Facility	Weight	Recycling Rate %
General solid waste (non-putrescible)	Concrete – removed from building floor to install underground tanks and inground equipment pit, left over from new concrete pours	35m ³ loaded directly into tipper trucks parked within the building	Off-site recycling	North Wyong Recycling (Alcon Disposals Pty Ltd) EPL 20895	84 tonnes	100
	Soil – excavated for install of underground tanks and inground equipment pit	622m ³ loaded directly into tipper trucks parked within the building	On-site reuse as fill material and off-site recycling and reuse	North Wyong Recycling (Alcon Disposals Pty Ltd) EPL 20895	897 tonnes	100
	Metal – off-cuts, e.g. piping	Designated skip bin within building	Off-site recycling	Sims Metal West Gosford (No EPL required)	200 kg	100
	Plasterboard – off-cuts	Designated skip bin within building	Off-site recycling	North Wyong Recycling (Alcon Disposals Pty Ltd) EPL 20895	500 kg	100
	Timber – pallets, packaging, frame off-cuts	Loose timber to be placed in designated skip bin within building Pallets to be stacked adjacent to skip bins	Off-site recycling	North Wyong Recycling (Alcon Disposals Pty Ltd) EPL 20895	500 kg	100
	Co-mingled recycling: paper / cardboard / plastic / glass containers / metal cans	240L “yellow” bin	Off-site recycling (commercial collection)	Veolia West Gosford EPL 20660	210 kg	80
General solid waste (putrescible)	Personal waste, e.g. from staff meals, and other non-recyclable rubbish	240L “red” bin	Off-site recycling (commercial collection)	Central Coast Council Landfill Woy Woy EPL 6053	504 kg	0
TOTAL waste generated (tonnes)						982.91
TOTAL waste recycled (tonnes)						982.37
Overall recycling rate						99.9%

Figure 3.1. Location of waste storage during construction/installation of the Proposal outlined in green.



PROPOSED BELOW GROUND TANK AND PIT PLAN
SCALE 1:100 @ A1

Date	Revision	Drawn By	Site Description	JEP Environment & Planning	Client	Lawsan Property Holdings Pty Ltd
13/09/2024	Rev A	C. Rich	134 Somersby Falls Road, Somersby NSW 2250 (Lot 1, DP787857)	Strategy Approvals Compliance Licensing A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au	Project	Drill Mud and Oily Water Recycling Facility
					Title	Waste Storage Locations - Construction
					Scale	Not to scale
					Source	JEP Environment & Planning

3.3. Operational Phase

3.3.1. Incoming waste streams

The Proposal will accept drill mud from civil and construction sites where hydro-excavation and non-destructive digging methods have been employed and a site contamination assessment has confirmed the soil is not contaminated. The incoming material will consist of a slurry formed from water and soil. The Proposal will not accept material from sites known, or suspected, to be contaminated. Therefore, the soil is expected to consist of virgin excavated natural material (VENM), excavated natural material (ENM) and some inert fill materials (e.g. aggregates, sands). Quality control processes to be implemented during the operational phase to avoid the receipt and processing of drill mud waste that may be contaminated with chemicals or asbestos are outlined in Section 3.3.2.1.

The Proposal will accept oily water from service station forecourts, mechanic workshops, car and truck washes, and other similar facilities where the oily contamination is from fuels and engine oils. The Proposal will not accept any oily water from the food and beverage industry or from sites where there may be a risk of contamination with transformer oils (containing hazardous chemicals such as poly-chlorinated biphenyls (PCBs)) such as transformer workshops and electrical substations. Quality control processes to be implemented during the operational phase to avoid the receipt of contaminated oily water are outlined in Section 3.3.3.1.

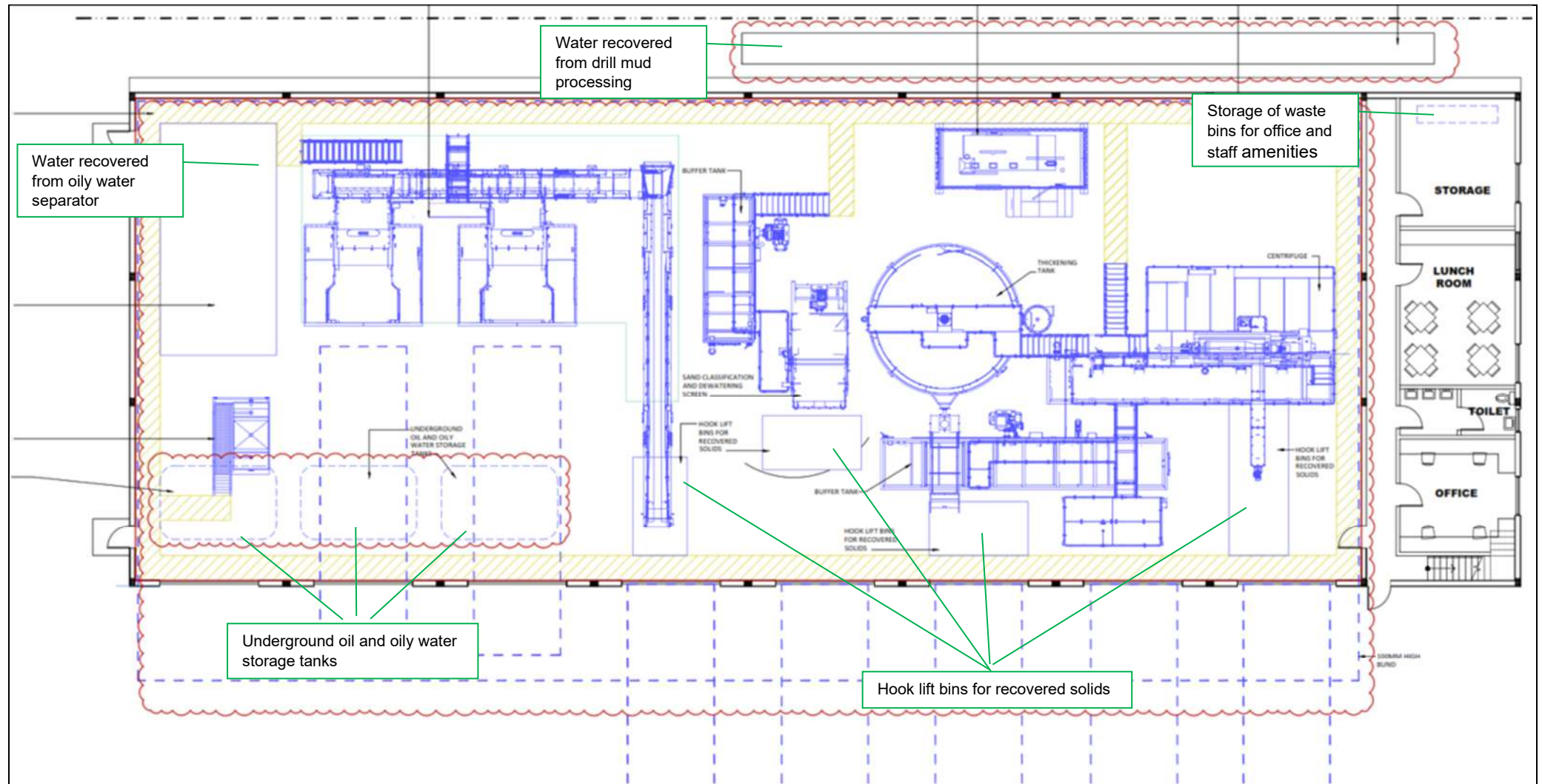
Table 3.2 summarises the expected maximum quantities of drill mud and oily water to be received and processed through the Proposal at full capacity. It should be noted that a validation program is proposed for the first 12 months of operation. During this time, the recycling plant will be operated at 20% of the maximum capacity to allow for testing of all treated water by a NATA accredited laboratory prior to discharge/off-site transport. Water that does not meet the necessary quality requirements will be recirculated through the drill mud or oily water recycling plant then retested. The Proposal is expected to achieve a 99% recovery rate, with the remaining 1% to be transported to an appropriately licensed facility for further treatment or disposal.

Figure 3.2 shows the location of waste storage areas and receptacles to support operations.

Table 3.2. Maximum quantities of drill mud and oily water (J120) to be received and processed through the Proposal at full capacity.

Material	Tonnes per Annum Received	Tonnes Recovered/Treated	Reuse/Disposal/Discharge
Drill Mud			
Water	100,000	32,000	Transport for reuse in industrial and agricultural applications
		8,000	Discharge to sewer
Soils		60,000	Transport to licensed facility for recycling
Waste (e.g. organics)		<1,000	Transport to licensed facility for further processing or disposal
Oily Water (J120)			
Water	50,000	45,000	Discharge to sewer
Oil		5,000	Transport to licensed facility for refining
Waste (e.g. litter)		<500	Transport to licensed facility for further processing or disposal

Figure 3.2. Location of waste storage during operation of the Proposal.



Date	Revision	Drawn By	Site Description	JEP Environment & Planning	Client	Lawson Property Holdings Pty Ltd
13/09/2024	Rev A	C. Rich	134 Somersby Falls Road, Somersby NSW 2250 (Lot 1, DP787857)	Strategy Approvals Compliance Licensing A: Suite 102, Level 1, 25-29 Berry St, North Sydney NSW 2060 E: admin@jacksonenvironment.com.au T: 02 8056 1849 W: http://www.jacksonenvironment.com.au	Project	Drill Mud and Oily Water Recycling Facility
					Title	Waste Storage Locations - Operation
					Scale	Not to scale
					Source	JEP Environment & Planning

3.3.2. Drill Mud Processing

3.3.2.1. Drill Mud Validation and Acceptance Criteria

Drill mud liquid waste can potentially contain contamination (e.g. heavy metals, hydrocarbons and asbestos) that can impact the ability of the processing plant to separate the solid phase (soil and aggregates) and water into products that are suitable for re-use in the environment and pose a low risk to human health.

Prior to the receipt of drill mud for processing at the Site, the following liquid waste validation and acceptance criteria will be met:

1. Drill mud will be received in batches from single sites only. Drill mud collected in single loads from more than one site will not be accepted;
2. Each batch of drill mud liquid waste will be held at the generator's site for validation testing prior to receipt. The validation process will involve:
 - a. An assessment of any site contamination studies performed at the site from which the drill mud has originated if available. Sites that have been found to contain asbestos or other contamination will not be accepted at the Site for processing;
 - b. Every batch of drill mud to be received at the facility must be validated in accordance with *The treated drilling mud order 2014* (NSW EPA, 2014). Samples of the solid soil phase of the drill mud will be collected prior to the drill mud being removed from the generator's site and tested for the analytes listed in Table 3.3 by a NATA accredited laboratory;
 - c. Every batch of drill mud will also undergo NATA accredited laboratory testing for the presence of asbestos;
 - d. Test reports shall be provided to the Site and accepted by management prior to the transport of the drill mud waste to the facility for processing;
 - e. Drill mud must meet the acceptance criteria specified in Table 3.3 and have no asbestos detected to be accepted for processing at the facility; and
 - f. Records of compliance are to be held on site for a minimum of six (6) years; and
3. Only pre-validated loads of drill mud will be accepted for processing and recycling at the Site. Any loads of drill mud that are not pre-validated will be rejected and not accepted at the Site.

Table 3.3. Chemical analytes for *The treated drilling mud order 2014*.

Chemicals and other attributes	Maximum average concentration (mg/kg 'dry weight' unless otherwise specified)	Absolute maximum concentration (mg/kg 'dry weight' unless otherwise specified)
Mercury	0.5	1
Cadmium	0.5	1
Lead	50	100
Arsenic	20	40
Chromium (total)	50	100
Copper	50	100
Nickel	30	60
Zinc	100	200
Electrical Conductivity	1.5 dS/m	3 dS/m
pH *	6 to 9	5.5 to 10
Total Polycyclic Aromatic Hydrocarbons (PAHs)	20	40
Benzo(a)pyrene	0.5	1
Total Petroleum Hydrocarbons (TPHs)	250	500
Total Chlorinated Hydrocarbons	0.5	1

Chemicals and other attributes	Maximum average concentration (mg/kg 'dry weight' unless otherwise specified)	Absolute maximum concentration (mg/kg 'dry weight' unless otherwise specified)
Asbestos **	Nil	Nil

* The ranges given for pH are for the minimum and maximum acceptable pH values in the treated drilling mud;

** Asbestos testing is not a requirement of *The treated drilling mud order* 2014, though asbestos testing will be performed to ensure the Site does not receive drill mud that contains asbestos.

3.3.2.2. Waste Tracking

Drill mud and the resulting products from the drill; mud recycling process are not considered trackable wastes under the Waste Regulation, therefore, Part 4 Tracking of certain waste transported within, out of and into NSW does not apply. However, all incoming and outgoing drill mud and recovered products will be recorded for quality control and best practice management purposes.

The NSW EPA's Integrated Waste Tracking Solution (IWTS) was developed to enable waste consignors, transporters and receivers to track and report on the transport of hazardous and regulated waste, and to ensure compliance with the applicable legislation. Whilst tracking using the IWTS is not required for drill mud and the resulting products, the IWTS can be configured to track all waste materials. As use of the IWTS will be required for the tracking of oily water and recovered oil (refer to Section 3.3.3.2), the system will also be used to track drill mud and the recovered products to ensure efficiency and consistency in the Site operations.

The IWTS will be used to capture the following information for each load of drill mud received:

- Generator's details including details of the source site and extraction methods;
- Copies of site contamination assessments and laboratory testing results/certificates;
- Transporter's details;
- Date of receipt and processing;
- Details of the resulting products including the final destination for each product, the transporter, and the receiving facility.

3.3.2.3. Storage, Handling and Transport

All incoming drill mud will be transported in specialist liquid waste/slurry bins to protect from leaks/spills during transport. Upon arrival at the Site, drill mud is discharged directly into one of the two vibrating dewatering screens contained within the concrete-lined inground equipment pit. The inground pit will also include a ground sump to capture material spills during unloading. Material from the sump will be pumped into the vibrating dewatering screens for processing.

At each stage of the solids size separation process, recovered soil material/aggregates are discharged directly into hook lift bins ready for off-site transport to minimise handling, and therefore spillage, of soil materials (Figure 3.2). Section 3.3.2.5 provides details of the outputs and the size and capacity of the bins to be used on-site. Each bin will be covered prior to collection for off-site transport. No material will be stored directly on the hardstand and all material will remain inside the building until covered and ready for transport. Bins will be brought to the Site as required. Empty bins will not be stored on-site.

Water recovered from the drill mud processing plant that is not required for use as processing water within the system will be temporarily stored in a 93kL internally bunded tank located externally on the northern side of the building.

3.3.2.4. Technology

The drill mud processing plant will use a series of proprietary devices to separate water from the solids, and to separate the solids into a range of sizes. The processing plant will include the following devices:

Vibrating Dewatering Screen

Two vibrating dewatering screens (VDSs) are proposed. These VDSs will be located within a concrete lined pit inside the building to allow direct feed from incoming trucks into one of the two VDS. A floor sump is located within the pit to capture material spills. This material is pumped back to the VDSs for processing. Only one truck can discharge material into a VDS at a time, with the discharge taking 15 to 20 minutes per truck. Whilst one truck is discharging, a second truck can be moving into position ready to discharge.

The equipment uses a screen to separate aggregates in the >5mm size range from finer solids and water. The large fragment is carried via a conveyor directly into an 11m³ hook lift bin within the building. The recovered aggregate is expected to have a moisture content of approximately 5%. Water and the smaller solid fragments and water are pumped via a centrifugal sand slurry pump through to the Hydro Cyclone Dewatering Screen (HCDW) for further processing.

Process water captured through the processing system is recirculated through the VDS to assist in moving materials through the screens and to ensure the slurry being pumped to the HCDW is of a suitable consistency to promote efficient flow. The underflow recirculates through the VDS until all solids have been either discharged to the hook lift bin or pumped through to the HCDW.

Hydro Cyclone Dewatering Screen

The HCDW uses a dewatering screen and hydro cyclone to separate sands and soils in the 75µm – 5mm size range. Solids recovered from the HCDW are discharged directly into an 11m³ hook lift bin adjacent to the HCDW. The recovered sand/soil is expected to have a moisture content of 15-20%.

Water and the finer solid fragments are pumped via a centrifugal sand slurry pump through to a buffer tank. The buffer tank contains agitators to ensure solids remain suspended within the water. Recovered process water is pumped into the buffer tank to maintain the consistency of the slurry allowing material to be pumped into the thickening tank at a constant rate. A radar sensor is in the tank to maintain level control.

Thickening Tank

The Thickening Tank (TT) is a large, raised circular tank that receives the slurry from the buffer tank and uses flocculants and coagulants to force fine silts and clays to settle out of the water. The thickened sludge is captured in a cone at the base of the TT and transferred to a second buffer tank. The clean water overflows at the top of the tank and is pumped into a water tank adjacent to the TT for use as wash water for the VDS and HCDW or for balancing of the buffer tanks. Excess water is pumped to the external recovered water storage tank for off-site transport for industrial reuse as appropriate or for discharge to sewer.

A rotating scum scraper is located at the surface of the TT to remove lightweight organic material that may be caught within the wastewater. This lightweight material is discharged directly into a 15m³ hook lift bin located adjacent to the TT.

A separate 'floc station' will be located adjacent to the TT at the rear of the building. Chemicals required for operation of the TT (flocculant, coagulant and antifoam) are loaded into the floc station for automated dosing of the TT. The selected chemicals will be dependent on the nature of the incoming materials. Testing of chemicals will be undertaken during the first 12 months of operation to ensure the chemicals selected provide optimal results.

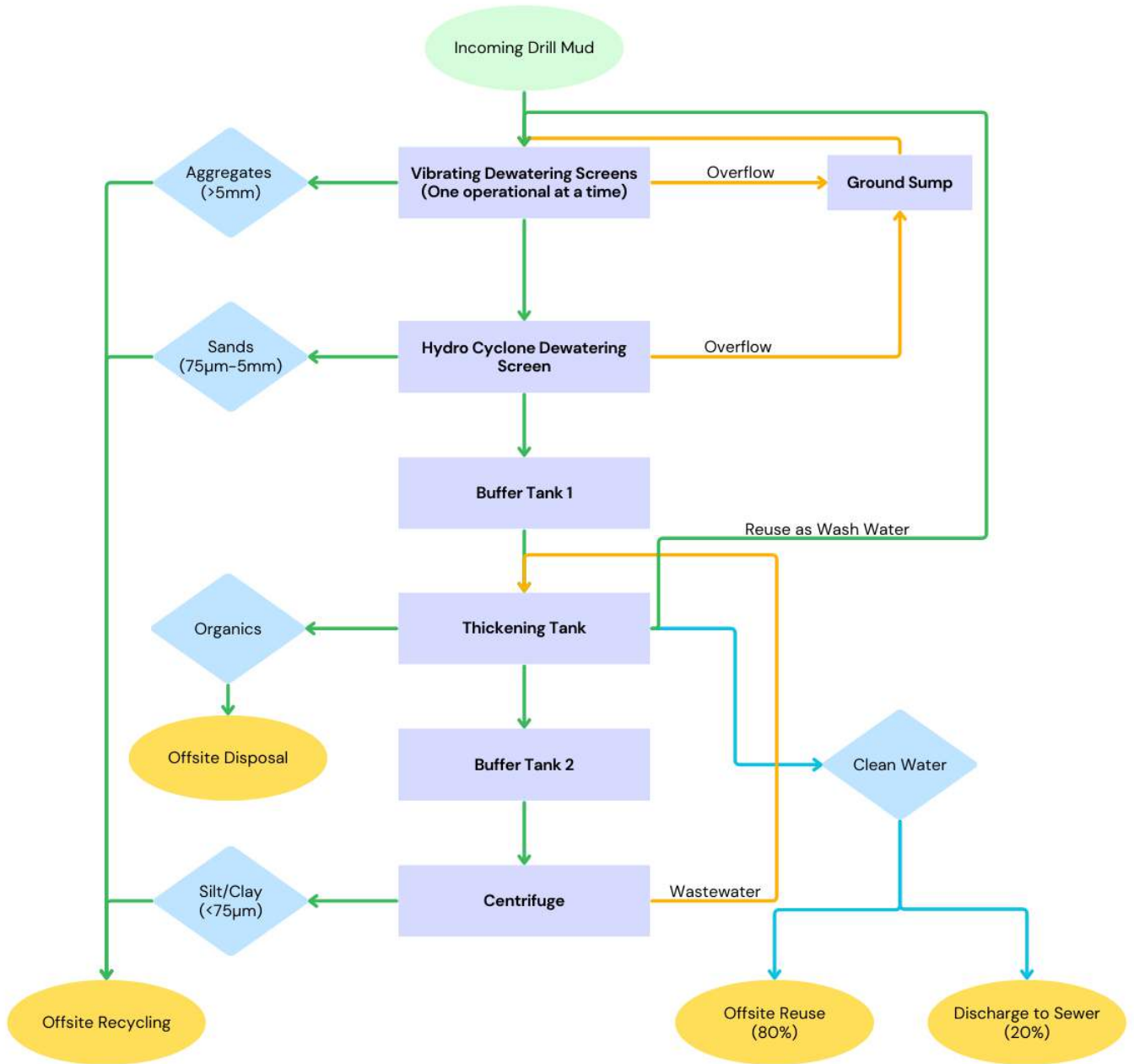
Centrifuge

Sludge from the TT is pumped into a buffer tank prior to being pumped to the decanter centrifuge at a constant rate. The centrifuge dewateres the final slurry to produce a spadable filter cake consisting of silts and clays in the <75µm size range. The filter cake is discharged directly into an 11m³ hook lift bin adjacent to the centrifuge. The recovered material is expected to have a moisture content of 40-45%. The separated water is pumped back into the TT.

Each VDS will operate intermittently for a period of 15 to 20 minutes at a time, with operation being dependent on the schedule of incoming vehicles. The HCDW will operate intermittently for a period of 5-10 minutes at a time, with operation being dependent on the operation of the VDSs. The buffer tanks, thickening tank and centrifuge are required to operate continuously to prevent solids from settling and blocking the system. If the system were to shut down for an extended period, the settled sludge within the TT and buffer tanks would need to be cleared before the system could be restarted. A vacuum truck would be used to clear the sludge which could then be discharged into the VDS for reprocessing through the system.

Figure 3.3 presents a process flow for the drill mud processing plant.

Figure 3.3. Process flow diagram for the drill mud recycling plant.



3.3.2.5. Outputs

The drill mud plant will produce the following outputs:

- Clean water;
- Aggregates (>5mm);
- Sands and sandy soils (75µm – 5mm);
- Silts and clays (<75µm); and
- Lightweight organics (e.g. plant material within soil).

The recovered clean water will either be recirculated through the recycling plant as wash water and to balance the buffer tanks, or will be pumped to the external, self-bunded storage tank on the northern side of the building. Up to 80% of recovered water will be transferred off-site in 12.5m tankers with a 12-tonne capacity (12,000L) for use in industrial and agricultural applications (the final receivers will be dependent on measured water quality), and up to 20% will be discharged to sewer. The actual quantities will be affected by demand for recovered water and the wash water requirements within the recycling plant. For example, higher volumes will be discharged to sewer during periods of wet weather when there is a lower demand for supplementary water for activities such as dust suppression.

The criteria for reuse will be dependent on the actual use as different applications will have different requirements. However, the following targets will apply:

- For reuse in industrial or agricultural applications where human exposure is possible, the Level 2 criteria specified in Table 6.4 of *Managing Urban Stormwater: Harvesting and Reuse* (Department of Environment and Conservation NSW, 2006);
- For reuse in industrial or agricultural applications where there is no human exposure, the Level 3 criteria specified in Table 6.4 of *Managing Urban Stormwater: Harvesting and Reuse* (Department of Environment and Conservation NSW, 2006);
- For reuse in agricultural applications, the short- and long-term trigger values for toxicants specified in *Australian and New Zealand guidelines for fresh and marine water quality. Volume 3, Primary industries* (Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand, 2000) (ANZECC Guidelines).

Table 3.6 summarises the outputs from the drill mud recycling process.

Operation of the TT requires input of chemical flocculants, coagulants and anti-foams. These chemicals will be delivered in liquid form in 1,000L IBC containers. Once empty, the IBCs will be returned to the chemical supplier. Therefore, no waste is expected to be generated in relation to chemical dosing. Biodegradable chemicals will be used to ensure their addition does not impact the resulting water quality.

3.3.3. Oily Water Processing

3.3.3.1. Oily Water Validation and Acceptance Criteria

Oily water (J120) will be received from service station forecourts, mechanic workshops, car and truck washes, and other similar facilities where the oily contamination is from fuels and engine oils only. No oily water (J120) will be received from sites where there may be a risk of contamination with transformer oils (containing hazardous chemicals such as poly-chlorinated biphenyls (PCBs)). This includes transformer workshops, electrical substations or a demolition site where there has been an electrical sub-station or transformer on site.

Prior to the receipt of oily water (J120) for processing at the Site, the following liquid waste validation and acceptance criteria will be implemented:

1. Oily water (J120) liquid waste at the customer site will be sampled and characterised as part of a customer onboarding program;
2. For customers generating infrequent oily water loads (e.g. in the case of a spill event, or for very low volume generators), validation testing will be conducted on each load of waste prior to acceptance;
3. For generators with a consistent supply of oily water, samples of oily water (J120) will be taken and characterised for contamination weekly over a four-week period;
4. Samples of oily water will be characterised by a NATA accredited laboratory against the inorganic compounds, metals, pesticides and organic compounds acceptance limits in the Central Coast Council's *Liquid Trade Waste Policy* (reproduced in Table 3.4 and Table 3.5 below). The testing regime will also

include testing of the flashpoint to ensure the liquid waste is not contaminated by flammable liquids that may pose a fire risk during transport, storage or processing. Note that the acceptance limits for petroleum hydrocarbons have not been included in Table 3.4 as these will be removed during the treatment process, therefore testing prior to acceptance at the Site is not required;

5. Compliance with the requirements of Table 3.5 will need to be demonstrated by the validation testing of individual loads, or over the four-week sampling period for on-going oily water generators, prior to accepting oily water (J120) from a customer site;
6. Where the liquid waste complies with the four-week testing program, further testing will only be required on an annual basis or following changes to the generator's on-site processes;
7. Any sites not meeting the acceptance criteria as set out in Table 3.4 and Table 3.5 will be rejected and not accepted at the Site;
8. Records from the validation program are to be held on-site for a minimum of six (6) years; and
9. Only oily water (J120) liquid waste from pre-validated customer sites and tracked in the NSW EPA's Integrated Waste Tracking Solution will be accepted at the Site for processing and recycling.

Table 3.4. Acceptance limits for inorganic and organic compounds in oily water (J120). Only oily water (J120) meeting these requirements will be accepted for processing and recycling.

Compounds	Maximum Concentration (mg/L)
Inorganic Compounds	
Ammonia (as N)	50
Boron	5
Bromine	5
Chlorine	10
Cyanide	1
Fluoride	30
Nitrogen (Total Kjeldahl Nitrogen)	100
Phosphorus (total)	20
Sulphate (as SO ₄)	500
Sulphide (as S)	1
Organic Compounds	
Benzene	<0.001
Toluene	0.5
Ethylbenzene	1
Xylene	1
Formaldehyde	30
Phenolic compounds non-halogenated	1
Pesticides general (except organochlorine and organophosphorus)	0.1
Polynuclear Aromatic Hydrocarbons (PAH)	5
Flash Point *	>60°C

* The flash point is not required by the *Liquid Trade Waste Policy* but will be included in the validation testing.

Table 3.5. Acceptance limits for metals in oily water (J120). Only oily water (J120) meeting these requirements will be accepted for processing and recycling.

Metal	Maximum Concentration (mg/L)
Aluminium	100
Arsenic	0.5
Cadmium	1
Chromium *	3
Cobalt	5
Copper	5
Iron	100

Metal	Maximum Concentration (mg/L)
Lead	1
Manganese	10
Mercury	0.01
Molybdenum	5
Nickel	1
Selenium	1
Silver	2
Tin	5
Zinc	1
Total heavy metals excluding aluminium, iron and manganese	<30mg/L

* Where hexavalent chromium (Cr⁶⁺) is present in the process water, pre-treatment will be required to reduce it to the trivalent state (Cr³⁺), prior to discharge into the sewer.

3.3.3.2. Waste tracking

Waste tracking requirements under Part 4, Clause 41 of the Waste Regulation apply to the transport of “waste oil/water, hydrocarbons/water mixtures or emulsions” (J120 liquid waste) within NSW or interstate. The procedure for tracking of all incoming oily water and outgoing recovered oil (J120) is provided in Appendix 1. The transport of oil and oily water (J120) will be tracked using the NSW EPA’s Integrated Waste Tracking Solution (IWTS) and involve the following:

- All incoming J120 liquid waste must be accompanied by a consignment authorisation and waste transport certificate generated in the IWTS. Operators will ensure the consignor and transporter have completed all relevant details prior to accepting the liquid waste. Where the consignment authorisation or waste transport certificate are incomplete or not provided, the operator will notify the NSW EPA through use of the IWTS;
- The J120 liquid waste must be transported by a transporter that holds an environment protection licence (EPL) to transport the liquid waste;
- For J120 liquid waste that is accepted at the facility, the receiving operator will ensure all relevant details are recorded on the waste transport certificate and in the IWTS, and will notify the consignor that the waste has been accepted;
- For J120 liquid waste that is rejected, the receiving operator will ensure all relevant details are recorded on the waste transport certificate, in the IWTS, and in the Site’s Rejected Load Register. The operator will notify the consignor that the waste has been rejected and will direct the transporter to a licensed facility that can accept the waste;
- For accepted J120 liquid waste, the date and method of processing of the waste will be recorded in the IWTS;
- Following processing of the waste and prior to transport of the recovered oil or sludge (which will continue to be classified as J120 liquid waste), an operator at the facility will generate a new consignment authorisation and obtain a new waste transport certificate from the IWTS for every load of recovered oil or sludge (J120) to be transported off-site for lawful disposal or further processing; and
- Copies of all records associated with the generation, consignment, transport and receipt of J120 liquid waste will be retained for at least four years.

3.3.3.3. Storage, Handling and Transport

All incoming oily water and outgoing recovered oil (J120) will be transported by 12.5m liquid tanker trucks. The tanks and all associated pump equipment will be compliant with AS 1210-2010 *Pressure vessels* and AS 4343-2005 *Pressure equipment—Hazard levels* to prevent accidental leaks or spills during transport, loading and unloading.

Oily water and recovered oil (J120) will be held in underground storage tanks that comply with AS 4897-2008 *The design, installation and operation of underground petroleum storage systems*. Incoming oily water will be pumped directly into one of two 20,000L holding tanks prior to being pumped through the coalescing plate separator (CPS) at a continuous rate.

Treated water will be pumped from the CPS to an aboveground holding tank adjacent to the CPS with a total storage capacity of 167kL (1.3 days of storage at maximum throughput). Water of acceptable quality will be discharged to sewer. Water that does not meet the requirements will be processed through the CPS again.

Recovered oil is directed to a small holding tank under the CPS prior to being pumped to the underground holding tank. Oil will then be pumped directly from the holding tank to a transport tanker for off-site transport to licensed facilities for refining.

The CPS, aboveground holding tank, and the loading/unloading point are to be located on a sealed concrete floor within a fully bunded area.

3.3.3.4. Technology

A Coalescing Plate Separator (CPS) capable of processing up to 36,000L per hour will be used to process the oily water. The process is summarized in Figure 3.4. CPSs have been used successfully in many applications to remove hydrocarbons, oils and grease, and suspended solids from wastewater for many years.

The CPS consists of a series of undulating plates that are stacked with a small space between each plate. Water flows horizontally through the plates. The undulating design forces oil droplets upward where they stick to the underside of the plate using Van der Waal's forces. As more droplets rise, they begin to coalesce into larger droplets until a film is formed. When the buoyancy of the film allows it to overcome the Van der Waal's forces, the buoyancy causes it to rise through the peaks of the undulations through each plate, to the surface where it can be siphoned off into the recovered oil storage tank.

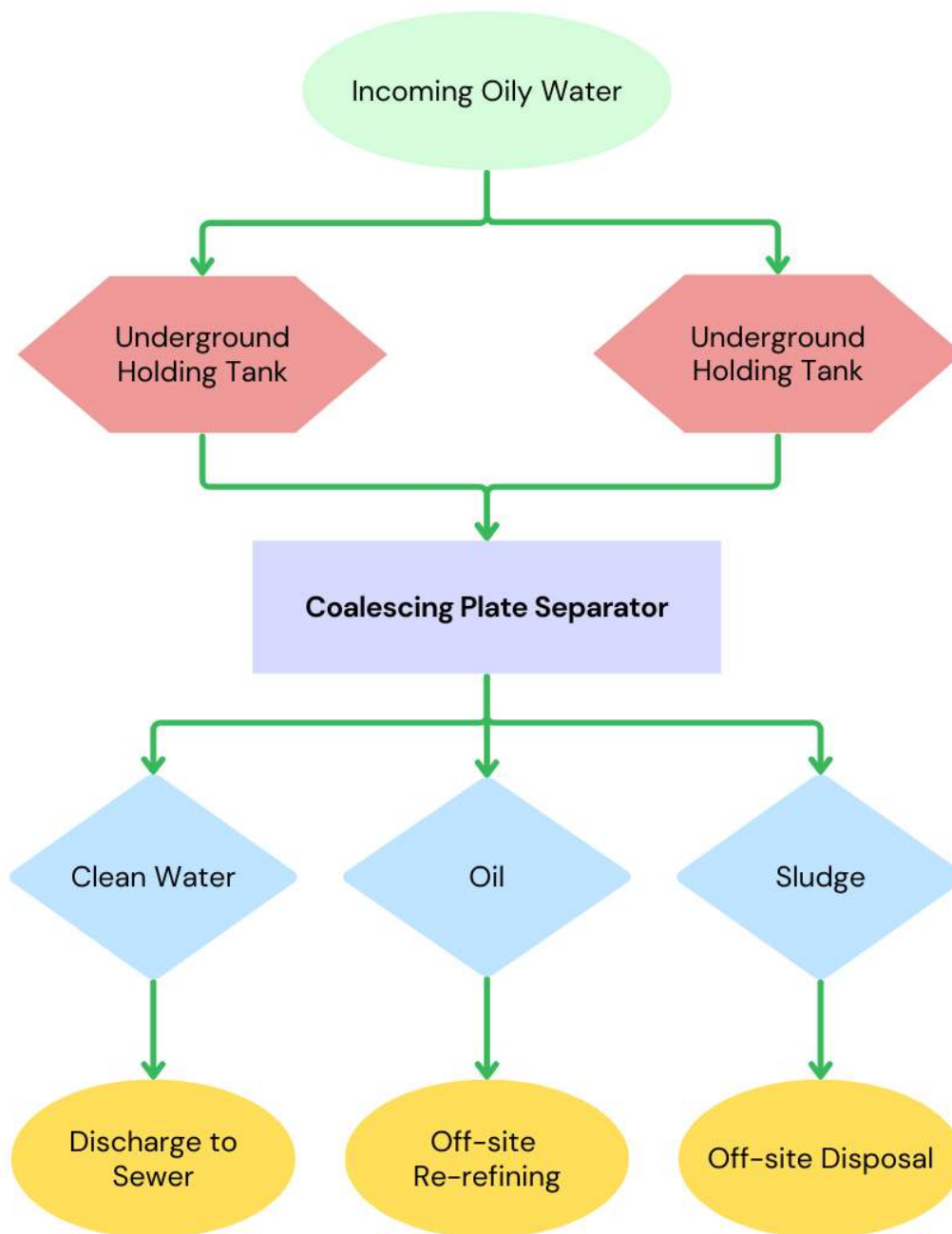
Large solid particles contained in the incoming oily water (e.g. dirt and debris) sink through larger holes in the depressions of the plates and accumulate in a sludge reservoir at the bottom of the CPS. The clean water flows out through a mid-point to the treated water storage tank.

The number of plates used in the CPS is dependent on the target water quality aim. The proposed CPS will be designed to achieve a final hydrocarbon concentration of 5mg/L or less. Council's *Liquid Trade Waste Policy* sets the following acceptance limits for liquid trade waste discharges:

- C₆-C₉ (flammable) hydrocarbons: 5mg/L; and
- Total Recoverable Hydrocarbons (TRH): 30 mg/L.

Figure 3.4 presents a process flow for the oily water recycling plant.

Figure 3.4. Process flow diagram for the oily water recycling plant.



3.3.3.1. Outputs

Table 3.6 provides a summary of the outputs from the oily water separation plant and the intended receivers.

3.3.4. Other Operations

Table 3.7 identifies other wastes expected to be generated from general site activities including plant and equipment maintenance, office operations, landscape maintenance, cleaning, and staff activities (e.g. meals). Waste storage location is shown on Figure 3.2.

Table 3.6. Summary of the incoming waste materials and the outgoing products from the drill mud and oily water recycling processes.

Classification of Incoming Waste	Description	Output Product	Segregation Area / Containers	Reuse / Recycling / Disposal	Classification of Output Product	Suggested Receiving Facility	Amount per Year	Recycling Rate %								
Liquid Waste	Drill Mud	Water	External self-bunded tank	Disposal	Liquid Waste that meets requirements of Liquid Trade Waste agreement	Central Coast Council Trade Waste	8 ML	0								
				Off-site reuse	Liquid Waste that meets the requirements of: 1. Managing Urban Stormwater, Harvesting and Reuse ¹ ; or 2. ANZECC Guidelines for Primary Industries ²	1. Industrial use – e.g. dust suppression, process water; or 2. Agricultural use. Final uses to be confirmed following full characterisation of water quality.	32 ML	100								
		Aggregate (>5mm)	11m ³ hook lift bin in building	Off-site reuse	General Solid Waste (non-putrescible)	EBH Environmental North Wyong EPL 20675	25,000 tonnes	100								
		Sands (75µm – 5mm)	11m ³ hook lift bin in building				25,000 tonnes	100								
		Silts and Clays (<75µm)	11m ³ hook lift bin in building				>9,000 tonnes	100								
	Organics/lightweights	15m ³ hook lift bin in building	Off-site recycling / Disposal	General Solid Waste (non-putrescible)	Veolia West Gosford EPL 20660	<1,000 tonnes	50									
	Oily Water (J120)	Water	167m ³ storage tank within building	Disposal	Disposal	Liquid Waste that meets requirements of Liquid Trade Waste agreement	Central Coast Council Trade Waste	45 ML	0							
										Oil	20kL underground storage tank	Off-site recycling	Liquid Waste	Cleanaway Refiners Pty Ltd Rutherford EPL 12555	5,000 tonnes (5.05 ML ³)	100
										Sludge from oily water separator	2m ³ container integrated into CPS	Disposal	Liquid Waste	Cleanaway Wetherill Park EPL 20937	<500 tonnes (500kL ³)	0

¹ Department of Environment and Conservation NSW (2006). Managing Urban Stormwater: Harvesting and Reuse. Internet publication: <https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Water/Water-quality/managing-urban-stormwater-harvesting-reuse-060137.pdf>

² Australian and New Zealand Environment and Conservation Council, Agriculture and Resource Management Council of Australia and New Zealand (2000). Australian and New Zealand guidelines for fresh and marine water quality. Volume 1, The guidelines. Internet publication: <https://www.waterquality.gov.au/sites/default/files/documents/anzecc-armcanz-2000-guidelines-vol1.pdf>

³ Approximate conversion factor: tonnes to kilolitres of residual fuel oil = 1.010. BP (2021). *Approximate conversion factors – Statistical Review of World Energy*. Internet publication: <https://www.bp.com/content/dam/bp/business-sites/en/global/corporate/pdfs/energy-economics/statistical-review/bp-stats-review-2022-approximate-conversion-factors.pdf>

Classification of Incoming Waste	Description	Output Product	Segregation Area / Containers	Reuse / Recycling / Disposal	Classification of Output Product	Suggested Receiving Facility	Amount per Year	Recycling Rate %
						Total Solid Waste	60,000 tonnes	99.2
						Total Liquid Waste	90.55 ML	35.3
						Overall Recycling Rate	96,500 tonnes	64.3

Table 3.7. Waste types and estimated amounts generated weekly by general facility operations during the operational phase, and the proposed method of reuse, recycling or disposal.

Waste Classification	Description	Segregation Area / Containers	Reuse / Recycling / Disposal	Suggested Receiving Facility	Amount/Week (kg)	Recycling Rate %
General solid waste (non-putrescible)	Empty engine oil/grease containers, cleaning chemical containers	Bunded pallet within storage room	Off-site recycling	Cleanaway Wetherill Park EPL 20937	20	80
	Co-mingled recycling: paper, cardboard, plastic, glass, metal cans	Office caddy emptied into 240L recycling bin within storage room Collected weekly	Off-site recycling (commercial collection)	Veolia West Gosford EPL 20660	15	85 ⁴
	Garden organics from landscaping maintenance	240L “green” bin within storage room Collected fortnightly	Off-site composting (commercial collection)	Lake Macquarie Organics Resource Recovery Facility Awaba EPL 20949	60	100
General solid waste (putrescible)	General waste (non-recyclable residual waste)	240L “red” bin within storage room Collected weekly	Off-site disposal (commercial collection)	Veolia West Gosford EPL 20660	20	0
	FOGO from staff meals	240L “green” bin within storage room Collected fortnightly	Off-site composting (commercial collection)	Lake Macquarie Organics Resource Recovery Facility Awaba EPL 20949	14.2	97.8 ⁵
Total waste generated per week (kg)						129.2
Total waste recycled per week (kg)						102.64
Overall recycling rate						79%

⁴ Average recycling rate for yellow bins. Department of the Environment and Energy; Blue Environment Pty Ltd (2018). *National Waste Report 2018*. Internet publication: <https://www.dcceew.gov.au/sites/default/files/documents/national-waste-report-2018.pdf>

⁵ Average contamination of FOGO bin = 2.2%. Rawtec Pty Ltd (2023). *Analysis of NSW Food and Garden Bin Audit Data – August 2023*. Internet publication: <https://www.epa.nsw.gov.au/-/media/epa/corporate-site/resources/wasteregulation/fogo/analysis-nsw-food-and-garden-bin-audit-2023.pdf>

3.4. Authorised Amount

Table 3.8 provides a summary of the average daily amount of material processed through the drill mud and oily water recycling plants and outlines the maximum volume of each output to be held on-site at any one time. For recovered solids, the maximum amount assumes the hook lift bins for each of the three solid outputs would be full at the same time and each bin is transported off-site prior to a new bin being filled. The incoming drill mud has been considered in the total amount of solids on-site at any one time. The Site can accommodate two trucks at any one time with each truck carrying a maximum of 16 tonnes of drill mud.

For liquids, the maximum possible volume on-site is the combined operational capacity of the aboveground and underground recovered water storage tanks, the operational capacity of the underground waste storage tanks, and the volume of process water contained within the drill mud recycling system (i.e. within the buffer tanks, thickening tank, and ground sump when full). It is unlikely that the maximum possible volume of liquids will be held on-site at any one time as recovered water will be regularly transported off-site or discharged to sewer throughout each day.

The Site can contain a maximum of 510kL of liquid within the storage tanks and processing plant, and 70.1 tonnes of solids within the hook lift bins (this excludes the volumes held in delivery vehicles).

Table 3.8. Average daily processing volumes and the maximum possible quantities of waste material on-site at any one time.

Material	Storage	Average Daily Volume	Maximum Quantity On-site
Incoming Oily Water	Pumped to underground holding tanks	142.9 tonnes	40,000L
Recovered Oil	Underground holding tank	14.3 tonnes	20,000L
Recovered Water from Oily Water	Internal aboveground tank	128,571 L	167,111L
Incoming Drill Mud	Within the transport truck	285.7 tonnes	32 tonnes
Aggregates	11m ³ hook lift bin	71.43 tonnes	17.6 tonnes
Sand/Grit	11m ³ hook lift bin	71.43 tonnes	18.7 tonnes
Clays/Silts	11m ³ hook lift bin	25.71 tonnes	14.3 tonnes
Organics	15m ³ hook lift bin	2.86 tonnes	19.5 tonnes
Recovered Water from Drill Mud	External aboveground tank	91,429 L	92,969L
Process Water	Within the thickening tank, buffer tanks and ground sump	-	230,000L
Total Amount of Liquids			550kL
Total Amount of Solids			102.1 tonnes

3.5. Proving Period

As described in Sections 3.3.2.1, all drill mud must be accompanied by a site contamination assessment that confirms the material is free from contamination, or must undergo laboratory testing in accordance with the quality specified by *The treated drilling mud order 2014* prior to being accepted at the Site. As described in Section 3.3.3.1, oily water (J120) will only be accepted from customer sites that have undergone liquid waste characterisation and validation that includes laboratory testing in accordance with Council’s *Liquid Trade Waste Policy* acceptance limits for organic and inorganic compounds and metals.

Due to space limitations on the site, all recovered soil material will be transported directly to a recycling facility licensed to accept General Solid Waste (non-putrescible). The receiving facility will undertake testing to ensure the

material complies with *The treated drill mud order 2014* prior to mixing, blending, or off-site transport for application to land.

Recovered oil will be transported directly to a licensed waste oil refinery for re-refining into a commercial grade product. The receiving facility will undertake the necessary quality testing prior to further processing.

At full capacity, the Facility is expected to generate up to 147kL of wastewater for discharge to sewer per day, totalling 51.4ML per year. An additional 73kL of water per day is expected to be suitable for off-site transport for use in industrial and agricultural applications. Water being discharged to sewer will need to meet the acceptance limits specified in *Liquid Trade Waste Policy* (Central Coast Council 2023). The limits are consistent with those specified by the *Liquid Trade Waste Management Guidelines: For councils in regional NSW, 2021* (Department of Planning, Industry and Environment 2021). The water quality required to enable reuse within industrial and agricultural applications will be determined the end user.

To demonstrate the Facility's capacity to achieve the acceptance limits adopted by Council, it is proposed to implement a water quality validation program for the first year of operation. The validation program would see the Facility operated at approximately 20% capacity. By operating at a reduced capacity, the Facility will provide up to five days of treated water storage within compartmented tanks. This will allow water to be isolated and tested by an independent NATA accredited laboratory prior to discharge to sewer.

Treated water will be sampled daily and tested for a range of physical and chemical components to confirm compliance with the *Liquid Trade Waste Policy* and determine suitable end uses. During the validation program, flocculants and coagulants required in the thickening tank will be tested to determine the appropriate chemicals to use.

It is proposed that the water quality validation program run for a minimum of 12 months, or until the performance of the liquid recycling plants has been proven. Following the proving period, a reduced monitoring program would be implemented as part of general operations. The program would consist of monthly laboratory testing for a broad suite of analytes and the use of continuous on-line monitoring for general indicators of water quality issues, including turbidity, pH and total dissolved solids. The analytes and test methods would be determined in consultation with Council and NSW EPA.

3.6. Environmental Management Practices

To ensure that all untreated and treated drill muds and oily water are managed safely to avoid the risk of harm to the environment, the following best practices will be implemented in this aspect of the operation.

These practices are based on best environmental practices used in liquid chemical storage, handling and spill management published in Department of Environment and Conservation (2005) *Environmental Compliance Report - Liquid Chemical Storage, Handling and Spill Management, Part B - Review of Best Practice and Regulation*.

Drill mud handling – transfer of contents of tanker truck to processing plant

- The area for unloading drill muds will occur fully indoors within the bunded area;
- Tankers will be fitted with automatic shut-off mechanisms, including fast-closing shut-off valves, and drive-away protection;
- Valves will be kept closed unless manually opened during transfer;
- Hatches, manholes or covers on all tankers should be kept closed, except during unloading operations;
- Transfer pumps should be provided with emergency shut-down devices;
- Hoses should be purged before uncoupling;
- Overfill protection devices should be regularly inspected; and
- Regular inspections should be undertaken for losses or leaks, and valves, pumps, couplings and seals should be maintained regularly.

Oil and oily water handling – transfer of liquids between tanker truck and storage tanks

- All loading and unloading to occur undercover within the bunded area;
- All storage vessels, including tanker trucks, pipework, hoses, valves and associated pump equipment will be compliant with AS 1210-2010 *Pressure vessels* and AS 4343-2018 *Pressure equipment—Hazard levels* to prevent accidental leaks or spills during transport, loading and unloading;

- All storage vessels, including tanker trucks, pipework, hoses, valves and associated pump equipment will be regularly tested in accordance with AS1210-2010 and AS 4343-2018 and the Australian Dangerous Goods Code requirements;
- Emergency shutdown devices to be fitted to pumps;
- Drums or containers to be used to catch any drips from hoses before or after decanting;
- Hoses to be purged before uncoupling;
- Spill kits will be located adjacent to the loading/unloading area; and
- All operators will be trained in spill management practices.

Bulk storage of oil and oily water in tanks

- Oily water and recovered oil will be held in double-walled underground storage tanks that comply with AS 4897-2008 *The design, installation and operation of underground petroleum storage systems*;
- Integrity testing in accordance with AS 4897-2008 will be undertaken before, during and after installation of the tanks;
- Tanks will be fitted with continuous monitoring equipment for rapid detection of leaks within the inner and/or outer tank walls; and
- Tanks will be fitted with a testing system for regular integrity testing as per the manufacturer's recommended testing schedule.

Bulk storage of treated water in tanks

- Indoor tank to be located wholly within the bunded area. External tank to be self-bunded;
- Tanks to be provided with overflow protection and alarms; and
- Leak detection tests on tanks, distribution lines and seals will be conducted regularly.

Bulk storage of recovered drill mud solids

- Recovered soil materials and organics/lightweights will be discharged directly from the processing plant into hook lift bins on the sealed concrete floor wholly indoors and within the bunded area; and
- Bins to be covered prior to loading for transport.

Spill and bunding requirements

- All loading, unloading and processing to occur on sealed concrete hardstand within the bunded area;
- The bunding will be constructed of an impervious material to prevent spills discharging outside the containment system;
- The floor around the solids storage bins is to be regularly washed down, with all water directed to the floor sump. The floor sump is to be pumped out and the material disposed of off-site at an appropriately licensed facility;
- All tanks will be provided with a suitable overflow system that discharges to an area within the bund wall or to a collection or holding point;
- Any valve used for draining a storage compound should be located outside the bund wall;
- The valve should have clear open and closed positions and be compatible with the liquid contained. The valve should normally be closed except during drainage;
- Storage tanks should be fitted with level indicators. Where the level inside the tank is not continuously visible to the person filling the tank, a high-level alarm should be fitted to prevent overflow;
- All tanks and storage compounds will be inspected and maintained regularly, and the tanks' integrity should be tested at least every 5 years;
- Tanks will be properly labelled and have Safety Data Sheets available in the work area as relevant;
- The Site will be secured against unauthorised entry;
- Adequate supplies of spill response equipment should be maintained in accessible locations. These are to be checked on a weekly basis and replenished with new supplies immediately after use; and
- Contaminated water and other waste (spill materials) from the clean-up of spills must be collected and disposed of in accordance with EPA requirements.

Limited incidents

- A spill response plan will be developed as part of the Operational Environmental Management Plan for the Site, implemented, reviewed and updated as required;

- Spill response training and drills will be conducted regularly or as appropriate;
- Adequate supplies of spill response equipment should be maintained in accessible locations;
- The spread of the spill should be contained, and all spilled liquids should be recovered immediately. The spilled liquid and other clean-up waste should be properly disposed of;
- Spills should be covered and protected from stormwater runoff during rainfall to the extent that it does not compromise clean-up activities.

Significant incidents

- An emergency management plan to deal with significant incidents will be implemented, reviewed and updated as required;
- At the detailed design stage, sufficient space between bund walls, storage areas and other structures should be provided to allow access during emergencies;
- Employees will be trained in emergency response procedures, including spill clean-up procedures;
- Response equipment should be provided to allow emergencies to be dealt with immediately;
- Emergency drills using the emergency response plan should be undertaken at least annually;
- Spilled liquids and other wastes from the clean-up should be collected and properly disposed of;
- Responsible individuals should be designated to oversee and enforce control;
- The Site will maintain adequate measures to contain contaminated firewater on-site; and
- The Site's stormwater isolation valve to be activated to block the stormwater drain outlets from the Site.

3.7. Non-conforming Waste

All incoming drill mud is to be accompanied by a certificate providing details of the source of each load. Where source details, including contact details of the waste generator, are not provided, the waste will be rejected and recorded in the Rejected Loads Register. The waste generator will be notified prior to the driver being directed to a suitably licensed facility to dispose of the waste.

All incoming drill mud will be inspected for visual or odorous contaminants prior to discharging into the recycling plant. Where potential contamination is identified, the load will be rejected and recorded in the Rejected Loads Register. The waste generator will be notified prior to the driver being directed to a suitably licensed facility to dispose of the waste.

If contamination is identified within the drill mud outputs during processing, no new loads will be discharged into the system until all contaminated/potentially contaminated material has been processed and removed from the Site. The waste generator will be notified and all contaminated/potentially contaminated solids will be transferred to a suitably licensed facility where the material will be isolated for testing in accordance with the NSW EPA's requirements. Where potential chemical contaminants are identified, recovered water will be held on-site until independent testing by a NATA accredited laboratory can be conducted. Where contamination is identified within the water, the water will be tankered to an approved facility for treatment or disposal.

All operators at the Facility will be trained to undertake inspections of incoming waste and identify signs of potential contamination.

3.8. Standards for managing construction waste in NSW

The *Standards for managing construction waste in NSW* were introduced in 2019 to better manage the risk of harm to human health and the environment from asbestos and other contaminants commonly found in construction waste. The Standards ensure that construction waste management facilities implement procedures to identify and safely manage contamination within construction waste, including a two-stage inspection process, sorting and storage of wastes according to waste types, and appropriate staff training. The Standard is not applicable to the drill mud and oily water recycling facility; however, the principles of the Standard will be incorporated into the waste management process through the following:

- The Facility will not accept drill mud from sites with known, or suspected, existing or historic contamination issues;
- Accurate records of the source of each load of waste material will be maintained;
- Incoming waste material will be processed in batches;
- All water will be quality tested prior to discharge or off-site transport; and

- All recovered soil materials will be transferred to a facility that is licensed to accept the material where it will be quality tested prior to being reused.

4. Environmental Risk Assessment

A risk assessment has been undertaken to identify the level of risk that site preparation/excavation, construction, and operational activities may present to waste management.

Table 4.1 summarises the key activities identified in the risk assessment relevant to waste management for site preparation, demolition, construction works and operation and the measures to be implemented to reduce the risks.

Table 4.2 provides the general environmental control measures and safeguards that will be implemented to minimise waste generated, including the timing and the position responsible for ensuring these measures are implemented.

Table 4.1. Key risks associated with waste management and the appropriate management and mitigation measures.

Risk	Management / Mitigation
Litter (e.g. food waste, packaging) from Site reaching local bushland and waterways	<ul style="list-style-type: none"> • Appropriate bins with lids provided close to working areas; • Contract for regular collection of waste; • Daily site inspections.
Excess packaging material in deliveries increasing waste generation	<ul style="list-style-type: none"> • Low-packaging options will be sought during procurement; • Packaging materials to be recycled wherever possible.
Inappropriate reuse or disposal of waste items which may be hazardous	<ul style="list-style-type: none"> • Potentially hazardous waste materials will be restricted to domestic quantities of cleaning products and small volumes of oil/grease for general maintenance of on-site plant and equipment; • Bunded storage for waste materials to be provided within the building; • Potentially hazardous waste materials to be regularly collected by appropriately licensed waste collection contractor; • Spill kits to be located at the storage location.
Accidental release of contaminated water to sewer during operation of the Facility	<ul style="list-style-type: none"> • Water quality validation program to be conducted over the first 12 months of operation to confirm performance standard of processing equipment – wastewater quality to be confirmed by NATA certified laboratory prior to release; • On-going live monitoring of hydrocarbon and/or suspended solids levels in wastewater that can trigger a stop-valve and alarm to prevent the release of water that does not meet quality standards; • Regular maintenance and inspection of pumping equipment, valves, and sewer connection to ensure it is maintained in good working order.
Accidental release of water, oil, or soil material to the environment during operation of the Facility	<ul style="list-style-type: none"> • All loading, unloading and processing of waste materials will occur within a bunded area; • All oil and oily water (J120) holding tanks are to comply with the Australian Standard for underground petroleum storage; • The external water holding tank is to be internally bunded; • 200µm litter baskets to be fitted to stormwater surface inlet pits within the hardstand to capture sediments; • Isolation valve fitted to the stormwater system to enable water to be retained within the hardstand; • The operations floor area is to be regularly washed down with all material directed to a floor sump within the bunded area. The material can then be removed via vacuum truck for off-site treatment or disposal or can be recirculated through the drill mud recycling plant.

Table 4.2. Environmental control measures.

Control Measures and Safeguards	Timing	Responsibility
Waste management and minimisation will form part of the induction program (which includes environmental due diligence training). All Project and site personnel will be trained in the requirements of this document including minimising wastes, recognising which types of materials are recyclable and their obligations to use recycling facilities provided on site.	Prior to starting on site / Ongoing	Operations Manager
Clearly assign and communicate responsibilities to ensure that those involved in the demolition/site preparation and construction are aware of their responsibilities in relation to the waste management plan.	Prior to starting on site / Ongoing	Operations Manager
Engage and educate personnel on how the various elements of the waste management plan will be implemented.	Prior to starting on site / Ongoing	Operations Manager
Specific locations for waste management (e.g., recycling bin locations, material stockpile locations) will be established on site and signposted appropriately.	Ongoing	Operations Manager
Waste management areas will be adequately managed to prevent sediment runoff and dust generation.	Ongoing	Operations Manager
Construction Method Statements (CMS) will include practices to minimise waste generation and to maximise recycling and reuse of materials including oils, greases, lubricants, timber, glass, and metal.	Prior to start of construction / ongoing	Operations Manager
Packaging minimisation and reuse initiatives will be implemented as part of the procurement.	Ongoing	Operations Manager
Segregated waste storage containers for the collection and recycling/disposal of all waste streams generated during the site preparation, construction and operational phases will be provided on site. Waste storage containers will have clear signage and instructions for use to avoid cross-contamination. No rubbish shall be disposed of on site.	Ongoing	Operations Manager
Waste will be disposed to an appropriate licensed facility. A Waste Management Register of all waste collected for disposal and/or recycling, including amounts, date and time and details and location of disposal will be maintained at all times.	Ongoing	Operations Manager
All waste being transported off site must be covered. The transportation must be appropriately licensed to carry that material.	Ongoing	Operations Manager
Storage of any hazardous substances and dangerous goods will be in accordance with SDS requirements in a bunded area	Ongoing	Operations Manager
If hazardous materials are encountered during demolition/site preparation (e.g. asbestos), an appropriately licensed contractor will be engaged to manage and transport materials for disposal to a licensed facility.	Ongoing	Operations Manager
Any material contaminated by spills e.g., fuel, oil, lubricants etc., including empty fuel, oil and chemical containers, will be stored in a sealed secure container within a bunded area and will be transported to a waste disposal site approved by the NSW EPA to accept such material.	Ongoing	Operations Manager
Incompatible wastes will not be mixed.	Ongoing	Operations Manager

Control Measures and Safeguards	Timing	Responsibility
Storage areas will be located away from the stormwater system.	Ongoing	Operations Manager
Biodegradable products will be used wherever practicable.	Ongoing	Operations Manager
Regular collection of wastes will ensure air emissions are at a satisfactory level.	Ongoing	Operations Manager
Conduct regular litter patrols to ensure litter is effectively controlled on site.	Ongoing	Operations Manager

5. Training

All employees and contractors working on site will undergo site induction training (which includes environmental due diligence training) and environmental training in relation to waste management issues. The induction will address:

- This management plan;
- Relevant legislation;
- Waste minimisation strategies;
- Waste recognition and recycling;
- Available recycling facilities; and
- Energy and water minimisation measures.

Records will be kept of all personnel undertaking the site induction and training, including the contents of the training, date and name of trainer/s.

Key staff will undertake more comprehensive training relevant to their position and/or responsibility. This training may be provided as “toolbox” training or specific training tailored by the Operations Manager.

6. Monitoring and Review

6.1. Inspections and Monitoring

Regular monitoring will be undertaken to track waste management on site (refer to Table 6.1). This will be through a series of formal and informal inspections at regular intervals.

Table 6.1. Waste monitoring and review schedule.

Activity	Resources	Responsibility	Frequency
Daily Site inspections (work area)	Site Diary	Operations Manager	Daily Issues recorded in Site Diary (by exception)
Weekly Environmental Inspection	Environmental Site Inspection Checklist	Operations Manager	Weekly
Waste removal activities off site	Monthly Register for Waste Materials	Operations Manager	Monthly

6.2. Auditing

Audits will be undertaken to assess the effectiveness of environmental controls and compliance with this plan and other relevant guidelines.

A schedule for internal audits providing frequencies and responsibilities is to be determined by the Operations Manager as appropriate.

6.3. Environmental Management Review

The effectiveness and proper implementation of the WMP will be reviewed every twelve months or sooner as necessary. Reviews will be undertaken by the management team. The review will comprise:

- Reviewing the results of audits;
- Evaluation of the system, which improvements and corrective actions will be sought; and
- Evaluation of the operation of the WMP.

6.4. Continual Improvement

Continual improvement of this WMP will be achieved by the continual evaluation of environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement. The continual improvement process will:

- At least monthly (or as incidents / non-conformances occur);
- Determine the root cause or causes of non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.

The outcomes of these reviews shall be documented and retained for the duration of the project.

Appendix A – Procedure for Trackable Liquid Waste

PROCEDURE FOR WASTE TRACKING

Lawsan Property Holdings Pty Ltd
Drill Mud and Oily Water recycling Facility
134 Somersby Falls Road, Somersby

1. PURPOSE OF THIS PROCEDURE

To ensure that the transport of all trackable liquid waste is properly recorded as required under Part 4 of the *Protection of the Environment Operations (Waste) Regulation 2014* using the Integrated Waste Tracking Solution (IWTS).

Incoming oily water and outgoing recovered oil is a Schedule 1 trackable liquid waste.

2. RESPONSIBLE PERSON

Operations Manager

3. ASSOCIATED INTERNAL DOCUMENTS

Waste Management Plan



Operational Environmental Management Plan



Pollution Incident Response Management Plan

4. EXTERNAL REFERENCE DOCUMENTS

NSW *Protection of the Environment Operations Act 1997*



NSW *Protection of the Environment Operations (Waste) Regulation 2014*

5. KEY REGULATORY REQUIREMENTS

The transportation of waste oil/water, hydrocarbons/water mixtures or emulsions within NSW or interstate must be tracked in accordance with Part 4 of the Waste Regulation (refer to the following sections for further details).



Use of the NSW EPA's Integrated Waste Tracking Solution (IWTS) will ensure all obligations for the consignment, transport and/or receipt of waste are met.

6. OBLIGATIONS ON CONSIGNOR OF WASTE

Before a trackable liquid waste can be transported from one place to another, the following must be undertaken by the consignor:

- A *consignment authorisation* must be generated;
- A *waste transport certificate* must be obtained, and all relevant consignor details must be complete;
- The *waste transport certificate* must be given to the waste transporter;
- The consignor must ensure the transporter holds an environment protection licence to transport the waste;
- The consignor must ensure that the waste facility to receive the waste can lawfully accept the type of waste; and
- The consignor must comply with all relevant conditions of the *consignment authorisation*.

If the consignor of the waste is an authorised agent of the occupier of the waste facility that generated the trackable waste, the consignor must give the occupier a copy of the *waste transport certificate*.

7. OBLIGATIONS ON TRANSPORTER OF WASTE

Before a trackable liquid waste can be transported from one place to another, the following must be undertaken by the transporter:

- Any part of the *waste transport certificate* to be completed by the transporter must be completed accurately;
- Ensure a *consignment authorisation* has been generated for the waste to be transported;
- Ensure the *waste transport certificate* is carried by any vehicle transporting the waste. If the waste is transferred to a different vehicle during transport, the details of the transfer must be recorded on the *waste transport certificate* and the certificate must be transferred to the vehicle transporting the waste; and
- Comply with all relevant conditions of the *consignment authorisation*.

The transporter must not remove the waste from the transport vehicle unless:

- The *waste transport certificate* has been given to the receiver and the receiver has consented to receiving the waste;
- The transporter has been directed to remove the waste by an authorised officer; or
- The waste is being transferred to another vehicle.

If there is no *waste transport certificate*, the receiver may consent to receive the waste if the receiver can lawfully store the waste.

If the receiver rejects the waste, the transporter must ensure that the receiver enters the details of the rejection on the *waste transport certificate*. The transporter must then transport the waste to an alternative facility to be identified by the receiver. If the receiver does not identify an alternative waste facility, the transporter may transport the waste to another facility that can lawfully accept the waste. The transporter must notify the NSW EPA in writing, within 3 working days of the facility to which the waste was transported.

8. OBLIGATIONS ON RECEIVER OF WASTE

The receiver of waste must ensure the following information is recorded on the *waste transport certificate*:

Information	Timing
The date waste arrived at the receiver	As soon as practicable
Whether waste was accepted or rejected	Within 21 days of the waste arriving
Date waste was accepted or rejected	
If applicable, the reason waste was rejected	
For accepted waste that is processed, the date the waste was processed and the method of processing	Within 3 working days of processing
For accepted waste that is only stored, that the waste has been accepted for storage	Within 3 working days of accepting the waste

If a load of waste does not have a *waste transport certificate*, the receiver must generate a *waste transport certificate* for the waste and complete all sections of the certificate that can be completed (including parts to be completed by the consignor and transporter, except for any signature or certification).

Prior to accepting a trackable waste, the receiver must:

- Ensure there is a valid *consignment authorisation* for the waste;
- Obtain the *waste transport certificate* for the waste; and
- Complete all relevant sections of the *waste transport certificate*.

However, if the receiver holds an environment protection licence for the storage of the waste type, the receiver may accept the waste without a complete or valid *consignment authorisation* or *waste transport certificate*.

The receiver of waste is required to notify the EPA in writing (use of the IWTS constitutes notification to the EPA) of the following:

Information	Timing
Waste that has arrived without a valid <i>consignment authorisation</i> or <i>waste transport certificate</i>	Within 3 working days of the waste arriving
Details of any incomplete or inaccurate information on the <i>waste transport certificate</i> received with the waste, including the ways in which the information is incomplete or inaccurate, and the corrected or missing information	Within 3 working days of accepting/rejecting the waste

The receiver must also notify the consignor whether the waste has been accepted or rejected within 14 days of accepting/rejecting the waste.

Once the receiver accepts the waste, any future transport of the waste is considered a new consignment. The receiver must then undertake the obligations of the waste consignor.

9. RECORD KEEPING

The following table describes the record keeping requirements for occupiers of waste facilities, consignors of waste and transporters of waste.

Record	Timing
Occupier of waste facility	
Copies of each <i>waste transport certificate</i> given to the occupier by the authorised agent	Four years
Copies of each agency agreement evidencing the appointment of the authorised agent	
Consignors of waste	
Copies of each <i>consignment authorisation</i> issued to the consignor	Four years
Copies of each <i>waste transport certificate</i> required to be completed by the consignor	
If the consignor is an authorised agent of an occupier of a waste facility – a list of premises waste was transported from and copies of each agency agreement	
Transporters of waste	
Copies of each <i>waste transport certificate</i> required to be completed by the transporter	Four years
Receivers of waste	
Copies of each <i>consignment authorisation</i> issued by the receiver	Four years
Copies of each <i>waste transport certificate</i> given to, or issued by, the receiver	
Copies of each notice required to be given to the EPA	
Copies of information provided to the EPA as part of the receivers return	