MONA VALE BUS DEPOT

Total Liquids Extraction and Treatment System Development Application

DEVELOPMENT APPLICATION with

STATEMENT OF ENVIRONMENTAL EFFECTS

David Gosling

July 2020

Development Application and Statement of Environmental Effects

A Development Application made by State Transit Authority of NSW in respect of proposed Total Liquids Remediation System for Mona Vale Bus Depot and Taronga Place Surrounds.

Planning Legislation and Regulation

This Statement has been prepared with reference to the Pittwater Local Environment Plan 2014 (the LEP) and the Pittwater Development Control Plan 2014(DCP) and Pre-lodgement Meeting Advice PLM2020/0036 dated 10/03/2020.

The principle applicable legislative framework for this Development application includes:

- The Environmental Planning and Assessment Act, 1979
- The Protection of the Environment Operations Act, 1997
- The Contaminated Lands Management Act, 1997
- The Heritage Act, 1977
- Waste Avoidance and Resource Recovery Act 2001
- State Environmental Planning Policy (Infrastructure) 2007
- State Environment Planning Policy 55 – Remediation of Land.

Site Details

The Site:

Site Name:	Mona Vale Bus Depot
Owned by:	Transport for NSW
Occupied by:	The State Transit Authority of NSW
Lot and DP:	Lot 2, DP 542640
Address:	58 Darley Street, Mona Vale, NSW 2103
Zoning:	IN2 Light Industrial under the LEP

Surrounding Impacted Properties

Site Name:	Pittwater Joinery
Owned and Occupied by:	Mr & Mrs P. Beukers
Lot and DP	Lot 2 DP 701913
Address:	9 Taronga Place, Mona Vale, NSW, 2103
Zoning:	IN2 Light Industrial under the LEP
Site Name:	Reece Plumbing
Owned by:	Rick and Stephanie Scarf
Occupied by:	Reece Plumbing Mona Vale
Address:	10 Taronga Place, Mona Vale, NSW, 2103
Site Name:	Public access way
Owned by:	Northern Beaches Council
Lot and DP	Part Lot 1 in DP542640
Address	56A Darley Street
Zoning:	IN2 Light Industrial under the LEP
Site Name:	Part of Taronga Place Roadway and Footpaths
Owned by:	Northern Beaches Council
Lot and DP:	
Address:	Taronga Place Mona Vale NSW 2103
Zoning:	

SECTION 1:

1. The Mona Vale Bus Depot – General Description

The State Transit Mona Vale Bus Depot is approximately 17,100m2 in area, is bounded by Darley Street to the South, a pedestrian access walkway leading from Perak Street to Darley Street from the North and West, and industrial premises fronting By the Sea Road, to the east.

The current land use is as an NSW Government Bus Depot. It accommodates approximately 119 buses, 38 of which are the popular yellow B-Line double decker buses. The land is owned by Transport for NSW and is occupied and operated by the State Transit Authority under a Bus Service Contract.

Onsite Depot Infrastructure includes an Administration Building, a garage/workshop area; a refuelling area; a bus and chassis wash facility, a Bus Port, a bus hardstand parking area, a staff carpark and a self-bunded above ground diesel fuel storage tank or AST.

Survey Plans indicated a slight site gradient in a north westerly direction from a high of 3 m AHD along the southern boundary towards a low of 2.5m AHD in the north western corner of the site.

The majority of the Depot is capped by a thick concrete hardstand supporting bus parking and building footprints with minimal vegetation. There is a small grassed area in front of the Administration Building entrance, and a tall hedge along the side of the Depot pedestrian entrance walkway.

Figure 1: The Site including Taronga Place

2. The Proposal – to design, install and operate a Total Liquids 'Pump and Treat' Remediation System.

State Transit has engaged experienced remediation contractors Enviro Pacific Services (EPS) to design, install, operate and maintain a Total Liquids Remediation System, (TLRS) to remediate onsite and offsite hydrocarbon contaminated lands. Onsite lands (the Bus Depot) were declared by the EPA as significantly contaminated in 2014 via notice number 20141101. State Transit has been investigating and remediating these lands since this time. More recently offsite lands were declared by the NSW EPA as significantly contaminated via notice number 20201112. The remediation of these lands is subject to an audited remediation process in accordance with a Remediation Action Plan (revised 2020) and a Voluntary Management Proposal 2019-1731 with amendment 20204416.

The proposed Total Liquids 'Pump and Treat' Remediation System is comprised of a network of recovery wells installed within the delineated boundaries of the hydrocarbon plume, fitted with top loading pumps, driven by compressed air, to draw in floating hydrocarbon product i.e. diesel and groundwater, for pumping via a network of interconnected below and above ground piping and PVC conduit, to the adjacent Depot for separation of product and treatment of wastewaters for discharge to sewer under a Trade Waste agreement with Sydney Water.

The Total Liquids Pump and Treat System is proposed as a temporary installation to run for a period of up to two years or until light non-aqueous phase liquid (LNAPL) has been remediated to the extent practicable. It is the intention that the system will be removed and those wells, not required for monitoring, will be abandoned, and surfaces reinstated on completion of LNAPL recovery and site remediation.

The Total Liquids remediation system as designed will be comprised of three major components:

- A network of Groundwater Recovery Wells fitted with top loading compressed air driven pumps, that sit within the well, covered with a flush mounted steel lid or plate,
- An underground and above ground network of PVC piping and conduit to contain and convey compressed air pressure and product return lines from each monitoring well to the waste water treatment system situated on the Depot site,
- The Wastewater Treatment system comprising holding tanks, diaphragm pumps, oily water separator, granular carbon filters, wastewater discharge meters and a sewer connection.

Each of these major components are described in more detail below:

2.1 Groundwater Recovery Well Network.

Some 26 specialised 100mm Groundwater Recovery Wells are planned to be installed within the perimeter of the LNAPL plume to enable each to draw product from the groundwater over the surface area of the delineated plume. These recovery wells will be distributed within the Taronga Place Roadway, the Council footpaths (grassed verge) and within industrial premises No 10 Taronga Place Mona Vale, with the land owners consent.

The precise density, distribution and positioning of the recovery wells has been determined via a pilot extraction trial from an existing monitoring well (MW21) to determine the extraction rates and zone of influence on the groundwater table at different compressed air supply pressures.

Of the proposed 26 wells, some 12 Monitoring Wells (MW1 to MW12) will be located on Council Lands, 7 (MW13 to MW19) on No 10 Taronga Place, and 6 on the Depot site (MW20 to MW25).

The maps of the proposed distribution of offsite and onsite wells are for Taronga Place and Depot site as depicted below:

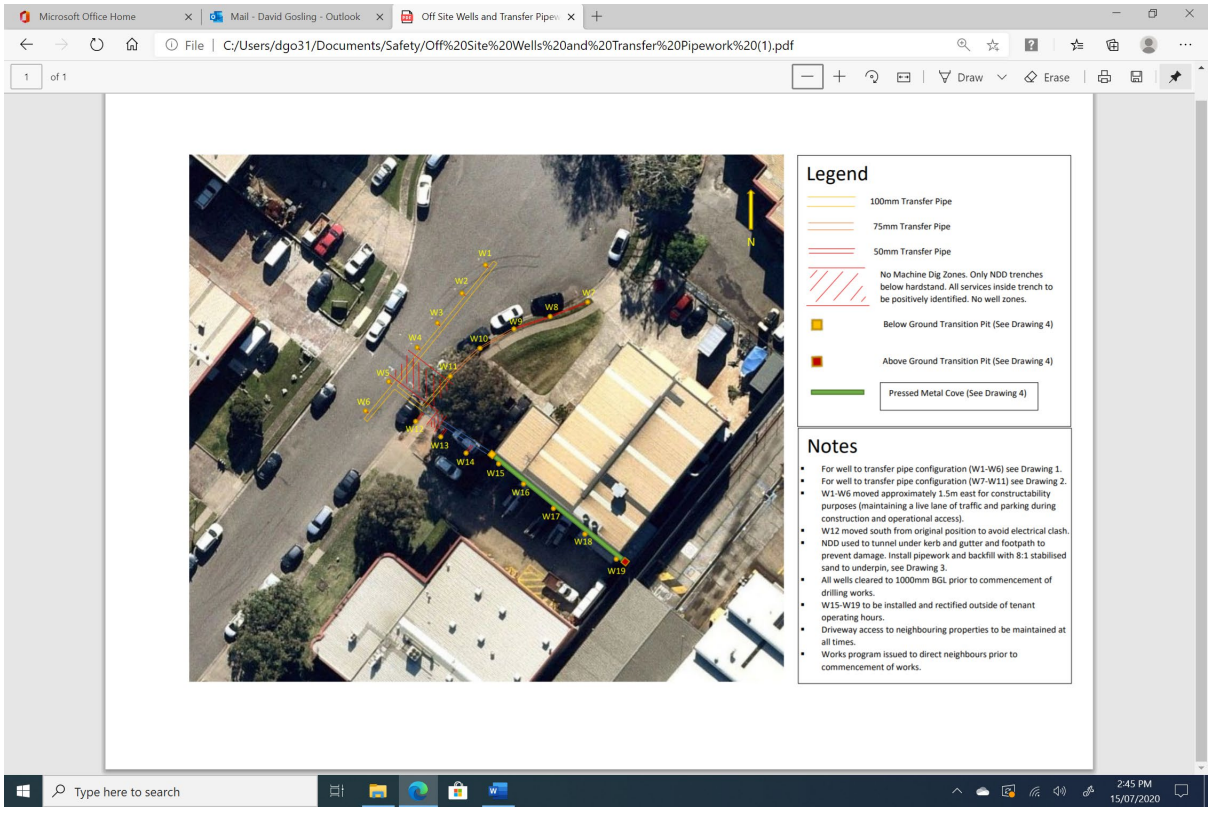


Figure 2: Offsite Recovery Well Network

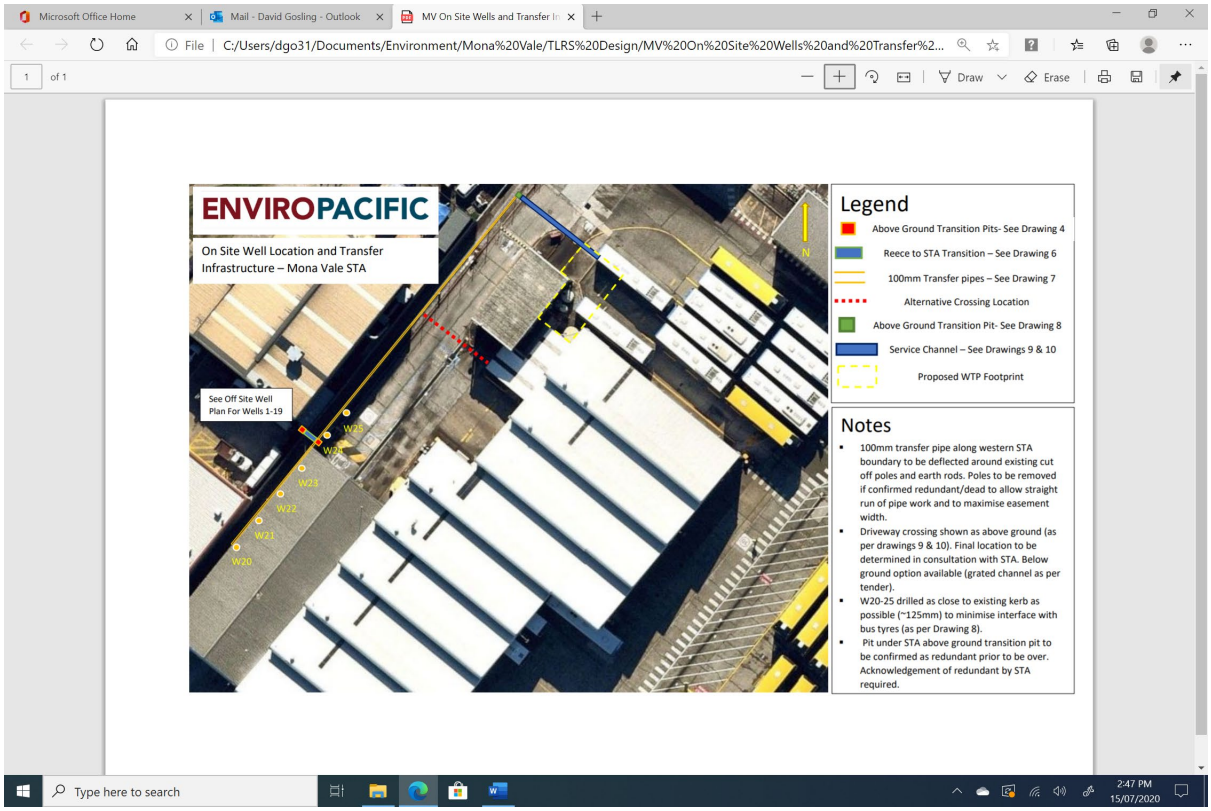


Figure 3: Onsite Recovery Well Network

Construction of the Well Network

The recovery wells will be established using experienced drilling contractor, utilising a trailer or tractor mounted drill rig to drill bores vertically to a depth of approximately 4 metres below ground level (bgl), before inserting a 100mm slotted PVC pipe into the bore, fitted with a well vault or housing to enable insertion, adjustment and removal of compressed air driven top loading pump.

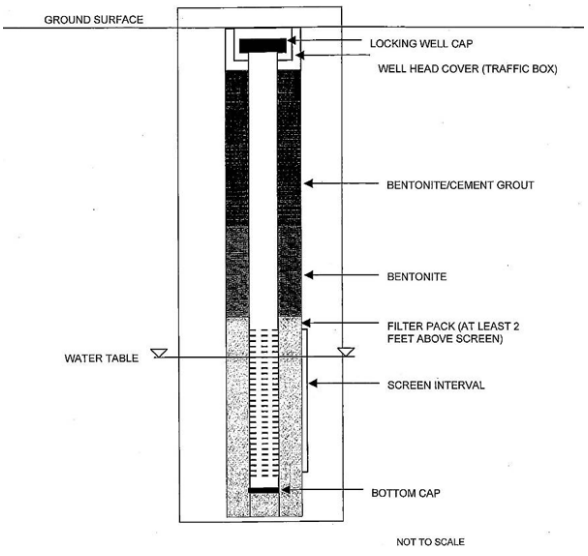


Figure 4: Cross Section of Typical Monitoring/Recovery Well Construction

All well housings are fitted with secured steel flush mounted trafficable plate lids to enable vehicle or foot traffic to pass over them, without damage, whilst enabling contractor periodic access for gauging, monitoring or submersible pump cleaning. Visually a recovery well has the appearance of a circular black or brown metal plate, fitted flush with roadway, footpath or surface in which it is established.

Where wells are to be established near existing services, a service search is conducted prior to establishment and wells established using a Non-Destructive Digging (NDD) technique to ensure there is no damage to, or contact with, undetected services at the point and depth where drilling is required.

All recovery wells will be constructed according to contaminated lands construction guidelines and in compliance with the safety and environmental precautions outlined in the Site Environmental Management Plan June 2017 (currently under revision) for civil works likely to expose contaminated soils or groundwater.

At the end of their effective life, after remediation to the extent practicable is achieved, these recovery wells are planned to be abandoned (filled with a concrete slurry) and surfaces reinstated, such that a potential pathway to the groundwater no longer exists. Monitoring wells required for ongoing monitoring as part of site management, will remain.

2.2 Transfer Network – Recovery Wells to Onsite Wastewater Treatment System.

In order to convey compressed air to, and contaminated groundwater from top loading pumps to onsite wastewater treatment system, a network of above and below ground PVC piping, feeding to and from a transition box is proposed. The buried portion of this network will, in the majority be offsite, so that it will not be subject to tampering or damage. Where services are encountered the buried depth of the PVC conduit will be adjusted accordingly. The above ground portion of the transfer network will in the majority be on the secured Depot site, covered by CCTV security cameras.

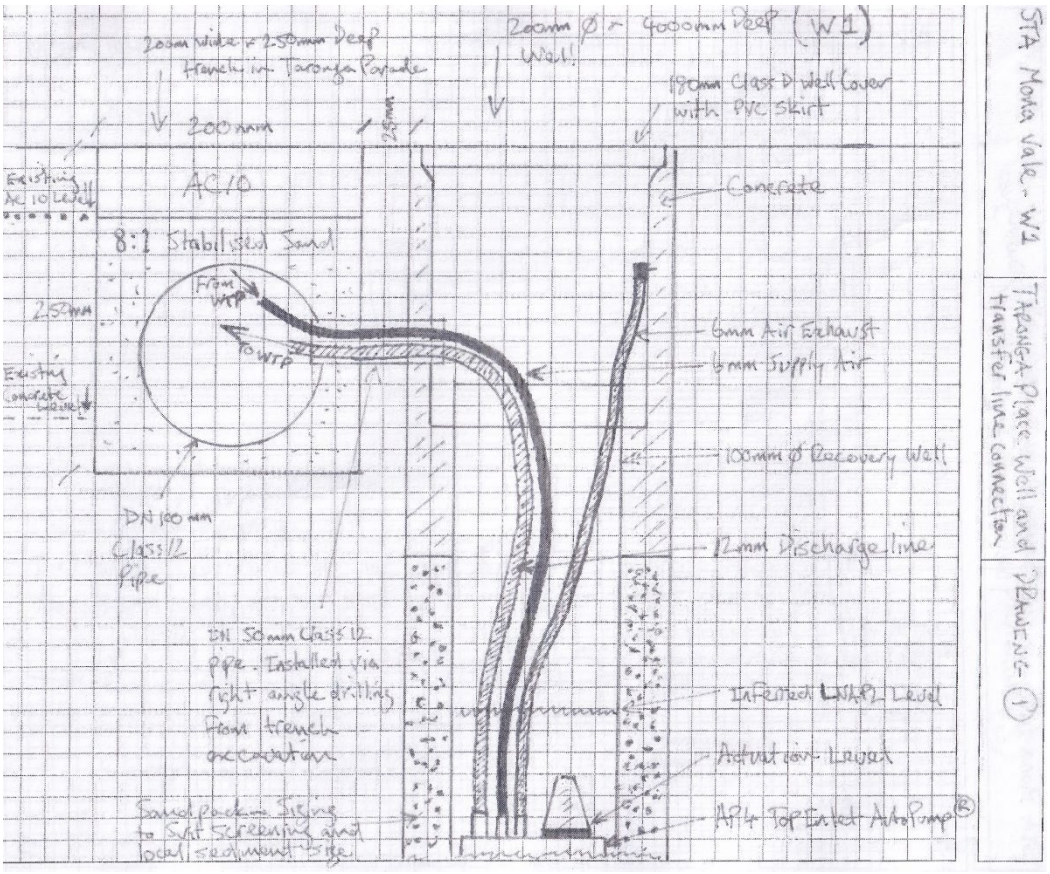


Figure 5: Schematic No 1 Side Elevation of Recovery Well and Interconnections

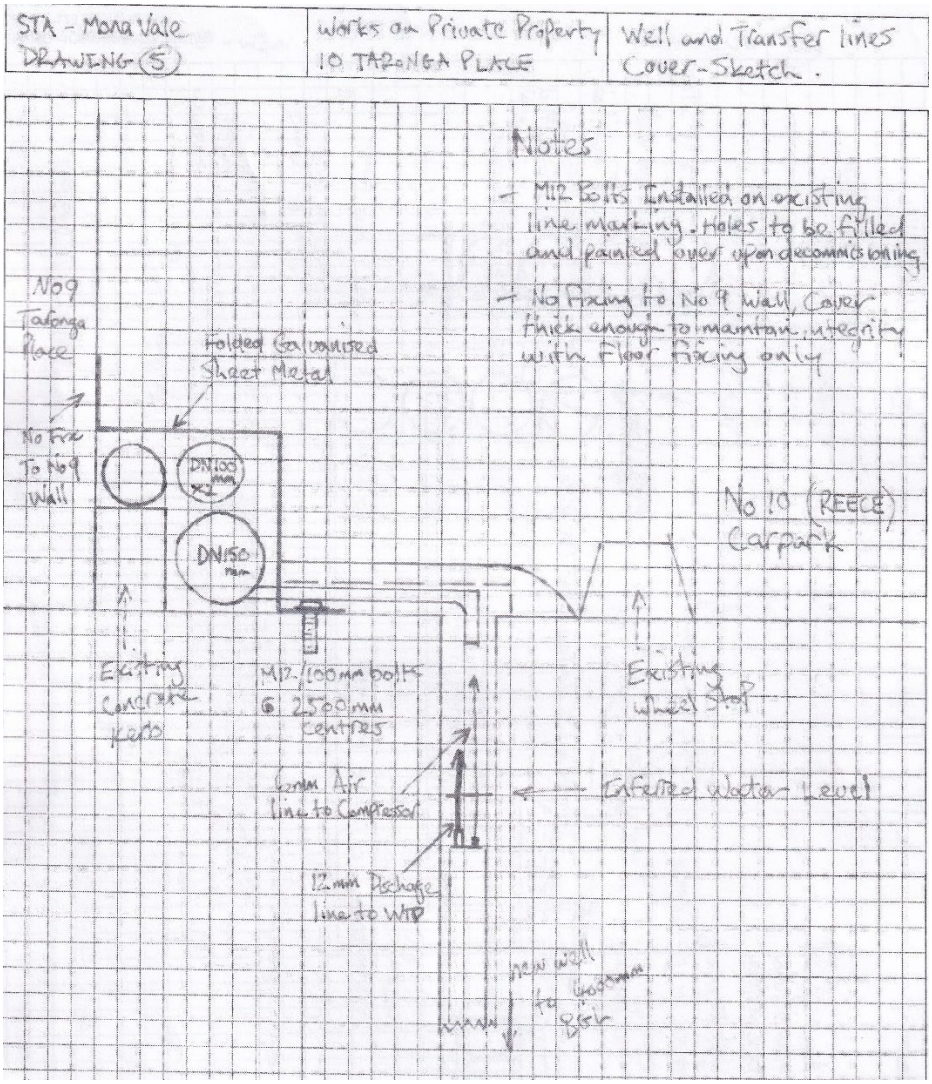


Figure 6: Schematic No2 Side elevation of Well and Above Ground Interconnections with protective cover.

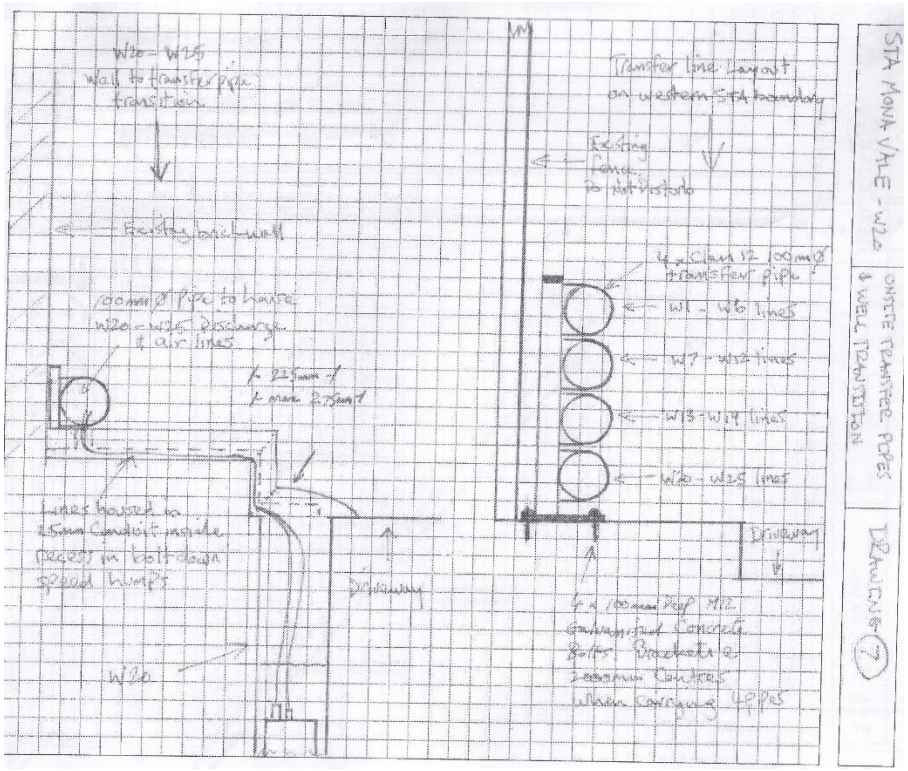
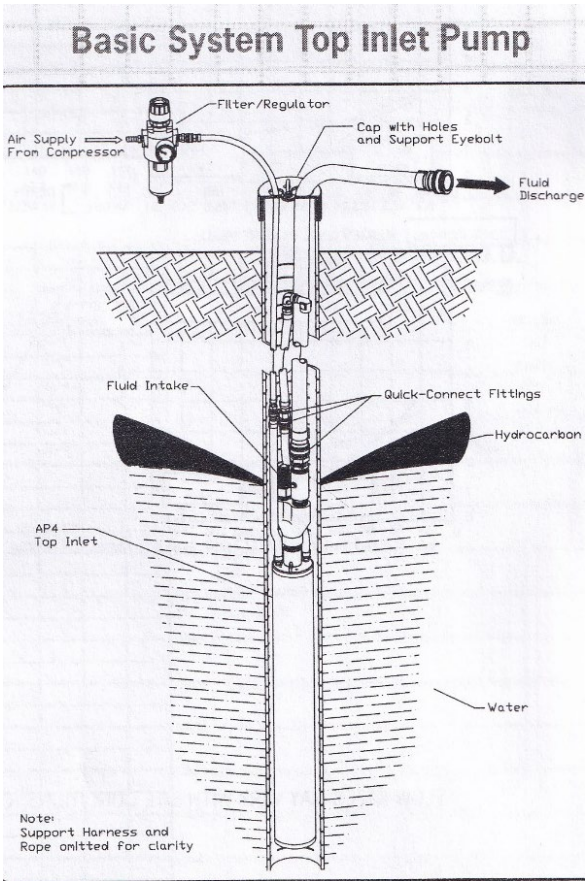


Figure 7: Schematic 3 Onsite Transfer Pipes and Well Transition

2.3 **Submersible Auto Pumps**



Each recovery well will be fitted with a submersible auto-pump inlet pump as depicted. Each pump will have connections to a compressed air supply and a product line. The pump is the engine by which the floating hydrocarbon and groundwater is collected and pumped to the Depot, for separation and treatment. The pumps will be periodically accessed for cleaning and height adjustment within the well to ensure their efficiency in extracting product and groundwater.

2.4 Onsite Waste Water Treatment System

Contrary to pre-lodgement discussions with NBC Council Planners, it is **no longer** planned to contain the elements of an onsite wastewater treatment system within a shipping container. Rather the plant and equipment that constitute the onsite waste water treatment system will be secured within a concrete bunded area adjacent to the Chassis Wash building and staff car park, and near a sewer discharge point. The system will be protected by an Armco railing to protect it from bus movements into the chassis wash building.

2.4.1 Location

The proposed location of the Wastewater Treatment System on the Depot site, is to provide for access to electricity supply and a nearby point of discharge to sewer, whilst remaining outside of bus traffic flow. The footprint of the proposed installation will be approximately 5 x 10 metres or 50 metres squared in total.

Its location lies well within the Depot Northern and Western boundaries and its footprint will not overlie the functional Stormwater Tidal Culvert that runs beneath the Depot.

The proposed location is as depicted below:

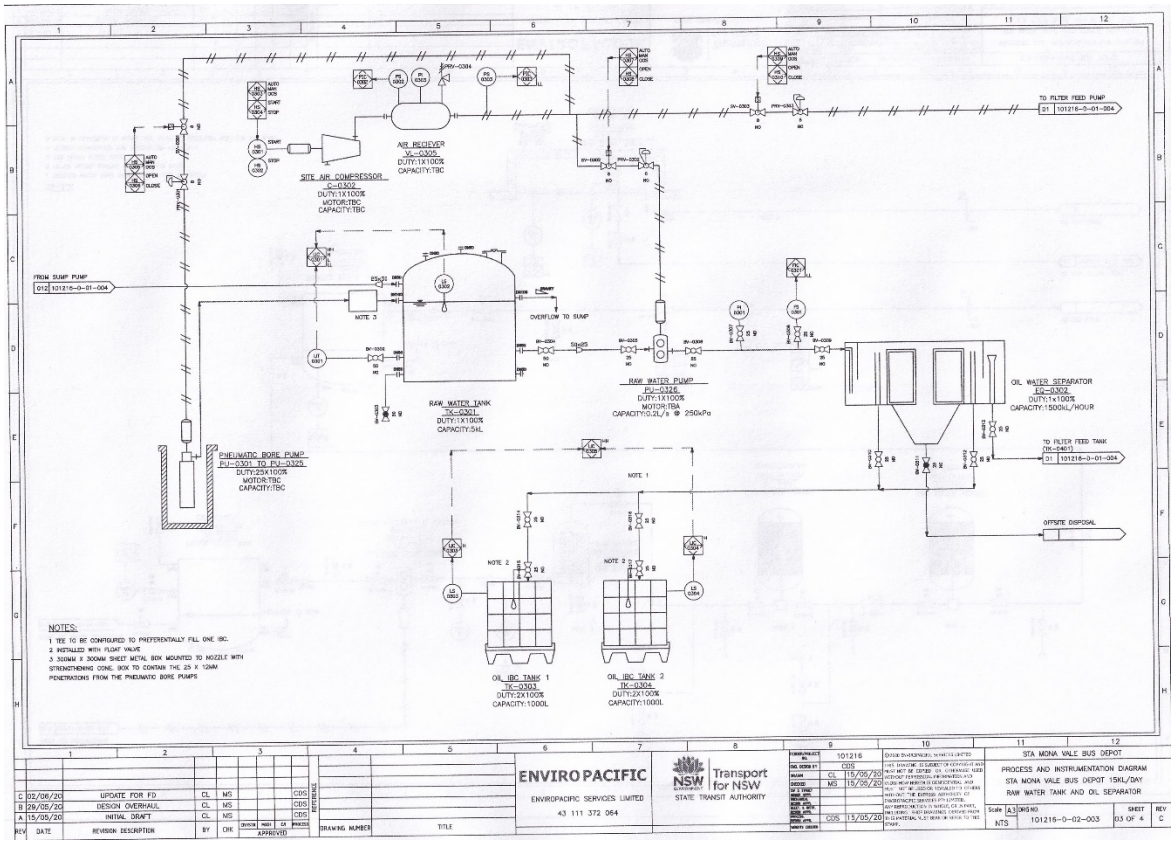
2.4.2 Plant and Equipment

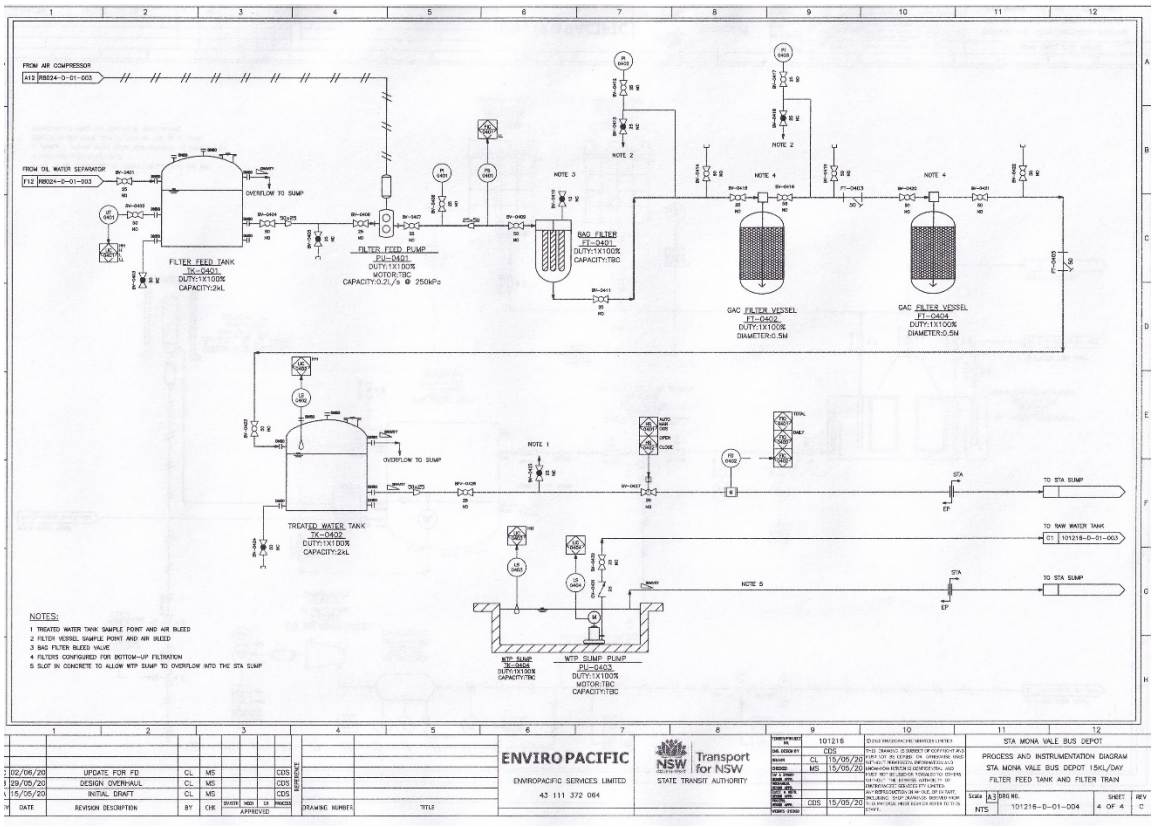
The Wastewater treatment system designed to receive and separate contaminated Groundwaters for treatment and discharge to sewer under a Trade Waste Agreement will be comprised of:

- An air compressor and air receiver
- Three 5,000 litre tanks; a raw water, filter feed and treated water tank
- An oil water separator
- Two 1,000 litre Integrated Bulk Containers
- A bag filter and two granulated active carbon filters
- Pneumatic bore pumps and filter feed pumps

2.4.3 Process Flow

Schematics of the proposed process flow of the Wastewater Treatment Plant are as depicted below;





2.4.4 Height of the System

The height of the Trade Waste Treatment System should not exceed 2.5metres, with the largest specified tank height being some 2.2 metres in height, with additional height allowance made for pipework. The Trade Waste System as designed and constructed will have to meet Sydney Water Standards for Wastewater treatment and discharge, as outlined in a Trade Waste Agreement to be developed with Sydney Water business customer representatives.

2.4.5 Hours of Operation

The Total Liquids System once established is designed to operate 24/7. The compressed air driven system itself will intermittently switch on and off to allow for draw and rest phases, to enable groundwater to draw down and to recharge, to all wells for improved product recovery. The system will be designed with alarms and automatic pump cut-offs to prevent system overflows or spills, should tanks or system reach capacity or a component fail. The plant and equipment comprising the Total Liquids Remediation System will be subject to regular inspection to ensure efficient, effective and safe operation.

2.4.6 Maintenance

The plant and equipment maintenance will include:

- Periodic cleaning of the oil water separator
- Changing out of bag and granulated activated carbon filters

- Periodic pumping out of flow balancing raw water tanks
- Collection and recycling of separated diesel product
- Servicing of system pumps, and pollution controls.

3. Construction Timeline

The construction timeline from site establishment to system testing and commissioning is expected to take 6 weeks from date of commencement.

Stages of Construction include;

- Site Establishment – Extraction Well Installation
- Extraction Well Pipework Installation – Offsite
- Extraction Well Pipework Installation – Onsite
- Installation of Extraction Pumps
- Installation of Total Fluids System
- System Testing and Commissioning.

A detailed MS Project Construction Program schedule will be available before commencement of any works.

Construction works will be carried out within standard weekday workhours, (8am to 5pm) with the exception of works within No 10 Taronga Place, where afterhours Saturday PM and Sunday (8am to 4pm) work is being considered to minimise disruption to the industrial tenants at No 10, i.e. Reece Plumbing.

4. Site suitability for Total Liquids Remedial System

The Depot site is considered suitable for the Total Liquids Remediation System in that:

- The site is secure (fenced around the perimeter, with boom gates) and has space to accommodate the Total Liquids Remediation System with access to power and sewer discharge point for treated wastewater
- The site has pollution controls in place, i.e. Stormwater isolation valves, bunding and spill kits
- It has the necessary geotechnical integrity and hardstand to support the weights of the proposed Wastewater Treatment System
- The on and offsite recovery well network sits within the delineated boundary of the plume, where remediation of LNAPL is required
- A site Environmental Management Plan exists to control the potential environmental risks associated with civil works with the potential to expose contaminated lands and groundwater.

Suitability of Onsite Location

The location of the Wastewater treatment system on the site towards the northern end of the Depot adjacent the Chassis Wash building and staff carpark is considered suitable in that:

- It is away from Depot Traffic flow
- It does not overlay any buried Council stormwater pipelines
- Has nearby access to power and a sewer discharge point
- It is sited within an appropriate distance of Depot North and Western boundaries
- It will sit within a concrete bunded area.

SECTION 2: PRE-LODGEMENT ADVICE

Response to Pre – Lodgement Advice PLM2020/0036

The following pages outline the applicant's response to matters raised within the Pre-lodgement meeting and advice received from Northern Beaches Council.

Zoning and Permissibility

State Transit has determined that remediation works are Category 1 Remediation under State Environmental Planning Policy No 55, for which a Development Application is required.

Clause 4.3 Height of Building

The proponent does not propose to house the Wastewater Treatment System within a shipping container. The components of the Waste Water Treatment System will be free standing and attached to the hardstand. The maximum height of the system will be 2.5 metres high, being slightly higher than the height of the maximum capacity tank of 2.2 metres, and well within Council 11m building height guidelines.

Clause 7.1 Acid Sulfate Soils.

In accordance with pre-lodgement advice an Acid Sulfate Soils Management Report has been developed by Environmental Contractors ENRS and is provided with this application. The report titled; "Acid Sulfate Soils Management Plan STA Bus Depot Mona Vale, June 2020", will be followed by Environmental Contractors Enviro Pacific Services in the construction of a Total Liquids Remediation System. It will provide the framework for the on-site monitoring, treatment and management of potential and actual acid sulfate soils that may be disturbed during the proposed works, and provide the procedures to be followed for soil waste classification and offsite disposal.

Pittwater 21 DCP

Section B3.6 Contaminated Land

The proponent has provided a Statement of Compliance with Voluntary Management Proposal Notice No 20191731 and amendment 20204416 with the EPA (EPA Doc 20/563147 dated 17 July 2020).

A copy of the revised Remediation Action Plan 2020 and 13th round Groundwater Monitoring Report is also provided. These reports demonstrate that the proposed development, i.e. the Total Liquids Remediation System is about remediating lands to minimise risk and make lands safe and suitable for current land use.

Section B3.11 Flood Prone Land

The applicant has provided a Flood Management / Mitigation Report developed by Contractors Pitt and Sherry, titled STA Mona Vale Depot Flood Report for Total Liquids Pump and Treatment Installation, dated 17 July 2020. The preliminary report concludes that the proposed installation with have no appreciable impact on:

- flood storage, because it will occupy no appreciable flood storage volume
- flood conveyance, because it presents no appreciable additional blockage to flood flows and creates no additional drainage paths, and
- that the impacts of flooding on the proposed installation can be managed via locating maintenance items and power outlets above an appropriate level.

Section B8.2 Erosion and Sediment Management

The development of the Total Liquids Remediation System is estimated to involve disturbance of land of less than 2500m^2. The applicant's contractors Enviro Pacific Services will be required by the proponent to develop an Erosion and Sediment Control Plan, that outlines the strategies civil works contractors will use to prevent the migration of sediment off the site, and to prevent pollution of any waterways, drainage systems, public reserves, road reserves and private lands. This plan will be developed prior to the commencement of any civil works. As a minimum this plan will require that any water generated, will be controlled at the point of generation, and all stormwater collection points will be suitably protected. State Transit will manage contractor performance in relation to environmental controls via series of random site inspections. Further details of Erosion and Sediment control actions are outlined in the enclosed Statement of Environmental Effects.

Section D9.1 Character as viewed from a public place.

The Wastewater Treatment System, as may be visible from the public walkway, adjacent the western boundary of the Depot, will be appropriate in character with the surrounding light industrial area, and the Depot. It will appear as a series of interconnected tanks, pumps and filters standing in a designated bunded Armco protected area, adjacent to the entrance of the standalone Chassis Wash Building, and staff carpark. The construction of the wastewater treatment system will be similar in character to the existing rainwater harvesting system as situated next to the Bus Wash Building.

Section 9.3 Building Colours and Materials

The visible Waste Water Treatment System is not a building as such, but comprises an arrangement of pieces of plant and equipment as previously described. The external colours of tanks and pumps will be of dark earthy tones and of low reflectivity to blend in with the character of the Depot and within the nearby industrial environments.

Section 9.6 Front Building Line

As identified in the pre-lodgement advice the site (Mona Vale Bus Depot) does not conform to the standard front, rear and two side approach as anticipated by the development control plan. The siting of the waste water treatment component of the Total Liquids Remediation System is well in from both Northern and Western Depot boundaries.

Section 9.7 Side and Rear Building Line

As previously mentioned, State Transit do not propose to contain the Wastewater Treatment System within a shipping container. The component elements of the Wastewater Treatment System will sit within a defined and bunded area, near the entrance of the Chassis Wash Building.

Specialist Environmental Health Advice

For the assessment of Environmental Health Matters the applicant has provided:

- A site Environment Management Plan and Remediation Action Plan have been attached.
- Excavation and Construction timeframes.
- Contaminated Waste Disposal
- Details of storage for any reclaimed petrochemicals
- Dewatering Protocol.

Site Environment Management Plan

The STA Environment Management Plan June 2017 has been revised, and is currently being amended by environmental contractors WSP in light of EPA Auditor advice. The revised copy will be sent to the EPA Auditor for his endorsement. The updated endorsed copy dated June 2020 will be distributed to all stakeholders when finalised.

Remediation Action Plan

The Mona Vale Remediation Action Plan 2020 as revised and reviewed by the EPA Auditor has been provided. The Remediation Action Plan outlines the remediation strategy that underpins this Development Application.

Excavation and Construction Timeframes.

As discussed under Construction Timeframes, excavation and construction is expected to take 6 weeks from the commencement of civil works until the installation and testing of the interconnected Total Liquids Remediation System, i.e. systems commissioning.

Contaminated Waste Disposal

All contaminated waste spoil or waste soils will be managed in accordance with Contaminated Lands and Waste legislation, and EPA Guidelines. Contaminated waste disposal processes will include waste classification, waste consignment, use of a licensed waste contractor, waste tracking and disposal to a licensed waste facility. No onsite landfarming of contaminated waste materials is planned. All contaminated spoil waste will be contained within 205 litre drums or covered skip bins for segregation, classification and disposal.

Storage of Reclaimed Diesel

Storage for reclaimed diesel will comprise two interconnected 1,000 litre bunded Integrated Bulk Containers (IBC's) with overflow protection in the form of a high level alarm and automatic cutoff. These IBC's will sit within a concrete bunded area. The proponent proposes to use a licensed waste contractor to collect and transport any reclaimed diesel for recycling, rather than disposal. Waste dockets for all IBC pump-outs will be retained as a record of volumes of reclaimed diesel collected for recycling. Quantities of treated waters discharged to sewer will be controlled under the Trade Waste Agreement with Sydney Water.

Dewatering Protocol

Dewatering is unlikely to be a requirement in the construction of a Total Liquids Remediation System as the recovery wells to be installed within the delineated plume are designed to intersect groundwater and allow for its flow into the well via well the narrow well screens. In the excavation works for underground connections between well vaults, should any dewatering be required, then the sump pumping technique for dewatering will be utilised, with excess waters pumped into IBC's for treatment or disposal.

Stormwater

Pre-lodgement advice indicates that the proposed Water Treatment Plant shipping container will be located within the vicinity of Councils 600mm stormwater pipeline (SPI52183) and 2100mm stormwater pipeline (SPI51760).

The applicant wishes to indicate that the Wastewater Treatment Plan will not be located within a shipping container and that the proposed location of the Plant and Equipment has changed since the pre-lodgement meeting. The Wastewater Treatment Plant, formerly planned to be adjacent to the Workshop Wall, near the underlying tidal culverts, has been relocated to be adjacent to the Chassis Wash Bay, will be clear of any Council pipeline, pit or easement and will comply with the minimum vertical and horizontal clearances.

Easement Rights

State Transit Total Liquids 'Pump and Treat' System is a closed system drawing groundwater and LNAPL for treatment before discharge to sewer. The system as designed, is intended to be temporary, to last for 2 years or until LNAPL is remediated to the extent practicable. State Transit is

prepared to grant the Northern Beaches Council easement rights over all Total Liquids Remediation structures for the life of the system.

Stormwater Infrastructure

State Transit contractors have utilised Service Searches and non-destructive digging techniques to avoid Council Stormwater and buried power, gas and telecoms service infrastructure. The location of recovery wells and the wastewater treatment system is some 10 metres away from buried Council Stormwater Infrastructure. The proposal will not burden Council Stormwater Infrastructure in that recovered groundwaters will be treated for discharge to sewer.

Footings

No footings are required in the design and construction of the Total Liquids Remediation System. Armguard railing will be secured to the Depot hardstand to protect the Wastewater Treatment System.

Structural Details

There are no building structures as such to be considered. There will be wastewater plant and equipment to be secured to the hardstand within a bunded area adjacent to the entrance of the Chassis Wash Building.

Water Management Policy PL850

In relation to Council's Policy this proposed development has primary relevance to Section 8.2 Groundwater Management.

The contaminated groundwater as recovered by this remediation system will not adversely impact receiving waters as it will be treated to a standard acceptable to Sydney Water for discharge to sewer. Extensive records of volumes of water extracted, and volumes collected and treated for discharge will be maintained for audited remediation purposes. The groundwater will be regularly gauged and monitored to establish the quality of groundwater as diesel product is extracted with the groundwater.

Erosion, Sediment and Pollution Control and Flood Risk Management aspects of this Policy are addressed elsewhere in this submission.

Building Over or Adjacent to Constructed Council Drainage System and Easement Technical Specifications

The proposed location of the Wastewater Treatment System is some 19 metres from Council Drainage (Tidal Culverts) as depicted on the Stormwater Map provided with this application.

The Wastewater Treatment System and connecting pipework are well clear of Councils 600mm stormwater pipeline (SPI52183) and 2100mm stormwater pipeline (SPI51760), as depicted in the stormwater plans.

Water Management and Bunding

All above ground plant and equipment will be protected by Armco railing. Tanks will be fitted with high level and overflow and leak detection alarms; spill response gear will be located in proximity of the Wastewater Treatment System for rapid response in the event of a leak. The system will be situated within a 100mm concrete bund, and the system covered by yard CCTV cameras. All electrics will be located above flood planning levels.

SECTION 3: Environmental Aspects and Impacts.

Environmental Aspects and Impacts of the Proposed Development

The identified environmental aspects and impacts evaluated as part of this construction project include:

- Visual Amenity
- Contaminated Lands and Groundwater
- Waste Management
- Erosion and Sediment Control
- Flood Risk and Stormwater Management
- Noise and Amenity
- Access and Traffic.

Visual Amenity

The TLRS is anticipated to have minimal negative visual amenity impact.

Within the Taronga Place Roadway, visual amenity impact will be limited to a number of flush mounted steel trafficable monitoring well lids being visible at different points on the roadway or pedestrian footpath. The metal lids are secured with three screws to allow for access during periodic Groundwater monitoring, gauging or adjusting pump heights.

At the end of their useful life, recovery wells will be abandoned and well caps or covers removed and surfaces reinstated.

For the most part the bunded PVC conduit conveying compressed air and product lines will be buried, and where this runs above ground will primarily be visible for only short distances inside the No 10 customer carpark and inside of the Depot boundary.

The proposed wastewater treatment system, located at the northern workshop wall, comprising a series of tanks and pumps enclosed within an Armco barrier, will be visible to public using the public access way between Perak Street and Darley Road, when passing by. The treatment system Plant and Equipment will have a similar appearance as the existing onsite rainwater harvesting system.

Contaminated Lands

The site is currently declared as significantly contaminated under s30 of the Contaminated Lands Management Act. State Transit has entered into a Voluntary Management Proposal with the EPA (VMP Notice No 2019/1731) for the voluntary remediation of the site, in accordance with this agreement and with the documented WSP Remediation Action Plan (revised 2020) dated 18/05/2020.

While full site remediation has not been completed, remediation works have taken place since 2013 in order to mitigate the known sources(s) of onsite and offsite contamination including;

- Removal of all undergound fuel infrastructure
- Excavation of hydrocarbon impacted soils
- Installation of an active onsite PSH removal system
- Conduct of a multi-phase extraction events and installation and maintenance of offsite passive skimmers to impacted wells.

An EPA accredited auditor Mr James Davis of EnviroView P/L has been engaged to audit the site's remediation, that on satisfactory completion will sign off on a site audit statement indicating that impacted lands have been made suitable for existing land use with or without suitable management controls, i.e. Site EMP and periodic groundwater monitoring. Importantly all remedial works have been in compliance with Voluntary Management Proposals held with the EPA including VMP 20191731.

Groundwater

The remediation system is designed to extract both diesel product and groundwater via drawing down on the groundwater table to expose saturated soils, and to draw product towards the recovery wells for pumping to the wastewater treatment plant for separation before discharge of treated wastewaters to sewer.

As part of this Groundwater extraction exercise State Transit are in the process of seeking Water NSW approval, in the form of Water Access Licence, to access Groundwater for remediation purposes.

It is proposed that groundwater with LNAPL be extracted for up to two years or until LNAPL has been remediated to the extent practicable, as evidence by LNAPL recharge and thickness. Top loading pumps within the recovery well network will be periodically adjusted in height to focus on drawing down LNAPL ahead of drawing down on groundwater.

Waste Management

The construction of the Total Liquids Remediation System does not entail any demolition. The development of the 25 recovery well network and trenching will generate contaminated spoil.

Waste soils will be collected and temporarily stored with 205 litre drums for later classification and disposal by a licensed waste contractor to a licensed waste facility. All such drums will be stored on the Depot site within a bunded area or facility, whilst awaiting classification for transport and licensed disposal.

Trenching for establishing buried conduit to bus depot will be via a combination of non destructive drilling and potholing to avoid critical services. Waste soils as generated from establishing trenches will be managed in a similar manner to contaminated spoil.

Any such potential contaminated soils as generated will be classified for offsite disposal in accordance with EPA waste classification guidelines and in accordance with ENRS Acid Sulfate Soil Management Plan, June 2020.

The management of wastes generated will be in accordance with the following waste management framework;

- All wastes will be appropriately stored onsite (contained and segregated) until collected for disposal
- Any wastes suspected to be hazardous will be labelled
- All waste storage will remain within the boundary of the site until collected for disposal
- Stormwater drainage will be protected from contaminants throughout the course of works
- Wastes will be transported by a licensed waste contractor to a licensed waste facility. State Transit is familiar with EPA waste tracking requirements and in particular the need to ensure that waste transporters and waste disposal facilities are appropriately licensed.

Erosion and sediment control

While the development is considered to entail the disturbance of less than 2,500m2 of land, State Transit will require its Environmental Contractors to provide an Erosion and Sediment Control Plan to contain and control any sediment runoff form the construction of recovery wells, or from roadway or concrete cutting.

As a minimum State Transit will require Enviro Pacific Services and contracted drillers to protect any stormwater drain in proximity of works by the deployment of absorbent socks around the perimeter of the grated inlet, and the provision of silt basket housed within the stormwater drain.

Contractors will be subject to periodic site inspections to ensure they are complying with Erosion and Sediment control requirements as outlined in their plan, and to ensure compliance with Environmental Regulations.

Environmental and Drilling contractors will be required to:

- Leave the site tidy at the completion of each work day, to not allow waste generated during the works to build up onsite (that is appropriately dispose of waste in a timely manner)
- Ensure trucks transporting soils to or from the worksite have properly secured and covered their load prior to arrival onsite or departure from site
- Not bring any hazardous materials onsite without State Transit's prior approval. If approval is granted, the hazardous materials brought onsite will be stored in a bunded area away from stormwater drainage.

Heritage

There have been no heritage items identified within the State Heritage Register or Local Government register (reference Pittwater LEP 2014 Heritage Map) for the area of proposed development.

In the establishment of recovery wells and vaults should any unlikely item suspected to be of heritage significance, be unearthed then works will be stopped until a Heritage Consultant can examine and advise on the item's significance.

Noise and Amenity

Construction Noise

All drilling and excavation works will be conducted in accordance with Construction Noise Standards and with regard to the NSW Noise Policy for Industry Guidelines 2017. Works will be carried out with sensitivity towards industrial neighbour's businesses and community noise amenity.

Noise from drilling and trenching is expected to be at or below existing background noise levels.

Operational Noise

The nearest residential premises to the Depot are located in Basset Street some 250 metres away from the north western corner of the Depot.

Minimal operational noise is anticipated from the Wastewater Treatment System, where wastewater is pumped by a diaphragm pump into a Coalescing Plate Separator and thence through granulated carbon filters before discharge to sewer.

The primary operational noise source will be the switching of the air compressor, which will be located within the fully enclosed tyre bay within the Depot Garage. Noise from submersible pumps housed within lidded wells across Taronga Place will not be audible.

Any low level noise as encountered from the operation of the diaphragm pumps will potentially be masked by bus movements around the Depot Yard.

Flora and Fauna

The proposed works are not anticipated to have any impacts on native flora or fauna. The site as an active bus depot with predominantly sealed surface has minimal occurrence of flora and fauna. The Taronaga Place cul de sac, similarly as an industrial area, has minimal occurrence of flora or fauna.

Access and Traffic

In the construction of the recovery wells in Taronga Place, Traffic Management Services will be utilised to manage Traffic during works in accordance with a Traffic Management Plan. Only half of a roadway will be occupied at any time. All Taronga Place industries will have road and driveway access to their properties at all times. All necessary Council Road or Road Reserve permits will be obtained in advance of planned works.

After completion of the Total Liquids Remediation System, some additional periodic contractor traffic will be generated in Taronga Place to access monitor, gauge or adjust pump height in wells from time to time. As a professional courtesy the contractor will check in with property owners, occupiers before accessing lands for any purpose.

Flood Risk and Stormwater Management

The site is affected by medium and low flood precincts and has a flood life hazard category of H3.

The attached Flood Mitigation Report, developed by Contractors Pitt and Sherry concludes that the proposed installation with have no appreciable impact on:

- flood storage, because it will occupy no appreciable flood storage volume
- flood conveyance, because it presents no appreciable additional blockage to flood flows and creates no additional drainage paths, and
- that the impacts of flooding on the proposed installation can be managed via locating maintenance items and power outlets above an appropriate level.

Measures proposed to further mitigate the potential impacts of flooding on the operation of the TLRS include:

- Use of watertight well caps to prevent ingress of surface waters into recovery wells
- Monitoring of weather warning or alert systems
- Placement of Plant and Equipment away from operational stormwater culvert or piping.

Contractor Site Management

For the duration of Works

- All contractor will be inducted onsite via LinkSafe Program or via individual instruction
- The worksite will be suitably delineated and protected to minimise the risk of accidents and to deter unauthorised entry
- The existing traffic operating plan will be amended to promote the safe movement of buses, vehicles and pedestrians through the Depot yard
- The contractor will be required to demonstrate a safe system of work has been implemented and hazards identified and controlled prior to works commencing
- The contractor will be required to provide a site specific Safety Management Plan prior to commencement of works.

Further to these contractors will be instructed to;

- Organise all work permits
- Supply a Works Plan prior to commencement
- Carry out a Dial before you Dig survey and services location survey to detect buried services prior to any invasive works

- Ensure the collection, transport and disposal of waste is in accordance with NSW waste tracking requirements
- Appropriately store all excavated soils onsite until they have been classified and are able to be disposed of appropriately
- Take required measures to prevent any contaminants generated from entering the stormwater drainage system and from migrating offsite
- Make good any disturbed structures and maintain the site and surrounding areas on good operational condition
- Allow for movement corridors for buses at all times
- Maintain its work area to the nominated site boundary

Site Geological Information

The JK Geotechnics Report, dated 7 August 2017, whilst commissioned for a different project as conducted on the Bus Depot, was carried out in the adjoining staff carpark and provides a representative and detailed analysis of site geotechnical conditions, as it likely to be encountered in the construction of the Total Liquids Remediation System. Further site geological information is provided within the multiple Contaminated Land Management Studies conducted on site. The Wastewater Treatment component of the Total Liquids Remediation System will sit on the existing 200 to 250mm concrete hardstand, that supports the movement of 15 tonne plus buses.

Attachments.

Remediation Action Plan

Environmental Management Plan

Groundwater Monitoring Round

ENRS Acid Sulfate Soil Management Plan

Pitt and Sherry Flood Management Plan