Sydney Environmental Group

Effluent Disposal Site Assessment

Lot 23 DP 1256090 - Wilson Drive, Marulan NSW

Corio Projects Pty Ltd

Report No: 1732-EDSA-01-010824.v1f
Report Date: 1 August 2024

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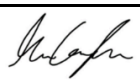
Author Signature		**Reviewer Signature**	
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Document Title:	Effluent Disposal Site Assessment, Lot 23 DP1256090 Wilson Drive, Marulan NSW
Site Address:	Lot 23 DP1256090 Wilson Drive, Marulan NSW 2557
Client Name:	Corio Projects Pty Ltd
Site Size:	93.9 ha Development area: 23.0 ha
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GLOSSARY OF TERMS

A list of the common abbreviations used throughout this report is provided below:

AWTS	Aerated Wastewater treatment System
DA	Development Approval
DCP	Development Control Plan
EPA	NSW Environmental Protection Authority
LEP	Local Environmental Plan
WWMP	Wastewater Management Plan

1. INTRODUCTION

Sydney Environmental Group Pty Ltd (SE) were engaged by Corio Projects Pty Ltd, hereafter referred to as 'the client', to prepare an Effluent Disposal Site Assessment of the property located at Lot 23 DP1256090 Wilson Drive, Marulan NSW, hereafter referred to as 'the site' (refer **Figure 1**).

SE has the following project appreciation:

- The broader site covers an area of approximately 93.9 ha, the development area comprises approximately 23.0 ha;
- The development area is proposed for construction of an additional effluent irrigation system to support existing infrastructure established for the residential subdivision to the east of site; and
- A Effluent Disposal Site Assessment is required, as part of a Water NSW RFI, to demonstrate that the proposed addition to the on-site sewage management system is appropriate for use.

The site identification details and associated information are presented in Error! Reference source not found. b elow.

Table 1.1 Site Identification Information

Attribute	Description
Street Address	Lot 23 DP 1256090 Wilson Drive, Marulan NSW
Lot and Deposited Plan (DP)	Lot 23 DP 1256090
Geographical Coordinates	34°43'0.48"S 149°59'59.9"E (centre of development area)
Site Area	93.9 ha (Development Area ≈ 23.0 ha)
Local Government Area (LGA)	Goulbourn Mulwaree Council
Zoning	IN1 General Industrial (Goulburn Mulwaree Local Environmental Plan 2009)

The locality, general layout, and boundary of the site is set out in **Figure 1**.

1.1. On-Site Wastewater Management

On-site wastewater management involves the treatment of wastewater followed by the release of liquid (treated wastewater) and solid (sludge, septage and compost) products into the environment. Inappropriate use or disposal of these products can have adverse impacts including the spread of disease by organisms in the wastewater, contamination of ground and surface water, and decreased community amenity, due to odours and insects.

Centralised, reticulated sewage systems are usually the best method of sewage management in urban areas and in rural residential areas where a council water supply is available and restrictive constraints are present (i.e. high rainfall, restrictive topography etc). Where these typical urban systems are not available, then an on-site wastewater management system is generally the next best option.

An initial assessment of a site requiring an on-site wastewater management system include the following:

- **Broad Evaluation** – Including a desktop analysis of all relevant information available and consideration of the major constraints and opportunities relating to the management of wastewater in relation to the proposed development or site.

- **Site and soil Assessment** – A detailed assessment of the site factors including slope, aspect, groundwater, soil permeability, and soil chemistry. These site constraints are evaluated so that the most suitable wastewater management system can be chosen

2. REVIEW OF PREVIOUS REPORTS

The following reports were reviewed as part of this assessment:

- Sydney Environmental Group (SE 2022), 'Wastewater Management Plan', dated 17 August 2022, ref: 1732-WWMP-01-170823.v1f; and
- Sydney Environmental Group (SE 2023), 'Sewer Treatment Decommissioning Plan, Lot 23 DP 1256090 Wilson Drive, Marulan NSW', dated 12 December 2023, ref: 1732-STDP-01-230823.v2f.

A summary of previous reports is provided below.

2.1. SE 2022 - Waste Water Management Plan

Sydney Environmental Group Pty Ltd was engaged by Darraby Pty Ltd (c/- SCP Consulting Pty Ltd) to prepare a Wastewater Management Plan (SE 2022) for the property located at Lot 23 DP 1256090, Wilson Drive, Marulan NSW.

A summary of the study information is provided below in **Table 2.1**.

Table 2.1 Study Summary

Item	Description
Proposed Development	Wastewater System to Service Existing Residence and 'Rural Factory'
Intended Water Supply Source	Town Water
Design Wastewater Allowances	150 L / day / person | 2.5 persons / lot | 48,375 L / day total (based on 129 lots)
Equivalent Tenements	2.5 persons / lot
Design Wastewater Flowrate	Total: 150 L / day
Rainfall and Evaporation Station	070263 Goulburn TAFE

NOTE these parameters are not in-line with council guidelines, and have been amended in this report]

CS 2021 undertook soil sampling and analysis of potential site constraints based on the site assessment. No major limitations were noted within this assessment. A summary of the site assessment data is provided below in **Table 2.2** and **Table 2.3**.

Table 2.2 CS 2021 Physical Properties Summary of Boreholes 1 and 2.

Soil Horizon	Depth (mm)	Colour	Mottles	Coarse Fragments	Texture
A1	300	Dark Brown	Nil	< 10%	Loam
A2	500	Dark Brown	Nil	< 10%	Clay Loam
B1	600	Red Brown	Nil	< 10%	Clay Loam
B2	1200	brown	Red	< 10%	Heavy Clay

Table 2.3 CS 2021 Properties Summary of Boreholes 1 and 2.

Site Feature	Relevant Systems	Result	Limitation
Depth to Bedrock	Surface Irrigation Sub-Surface Irrigation	> 1.0 m bgl	Minor
Depth to high episodic/seasonal water table (m)	Surface Irrigation Sub-Surface Irrigation	> 1.0 m bgl	Minor
Soil Permeability Category	Surface Irrigation Sub-Surface Irrigation	Clayey SILT Category 4	Minor
		Silty CLAY Category 5	Moderate – Potential excessive runoff, waterlogging, and percolation
		CLAY Category 6	Major – Potential excessive runoff, waterlogging, and percolation
Coarse Fragments (%)	All application land systems	None observed > 200 mm	Minor
Bulk Density (g/cm^3)	All application land systems	Estimated 1.4 g/cm^3	Minor
pH	All application land systems	BH01/0.2-0.35 = 6.6 BH02/1.0-1.2 = 6.9	Minor
Electrical Conductivity	All land application systems	BH01/0.2-0.35 = < 0.01 BH02/1.0-1.2 = 0.2	Minor
Cation Exchange Capacity (cmol/kg)	Surface Irrigation Sub-Surface Irrigation	BH01/0.2-0.35 = 3.4 BH02/1.0-1.2 = 45	Major – Potential inability to hold plant nutrients Minor
Phosphorus Sorption	All land application systems	BH01/0.2-0.35 = 4310 BH02/1.0-1.2 = 3156	
Modified Emerson Aggregate Test (MEAT)	All land application systems	BH01/0.2-0.35 = class 3a BH02/1.0-1.2 = Class 1	Major – Potential for structural degradation Minor

SE concluded as a result of our investigations and review of previous reports that a sustainable on-site wastewater management system can be constructed to meet the needs of the current occupants and land-use of the site.

2.2. SE 2023 - Sewer Treatment Decommissioning Plan

Sydney Environmental Group (SE) was engaged by Corio Projects Pty Ltd (the client), to prepare a Sewer Treatment Decommissioning Plan for the site located at Lot 23 DP 1256090, Wilson Drive, Marulan NSW (refer **Figure 1** with the 'site' boundaries outlined in **Figure 2**).

SE had the following project appreciation:

- The entirety of the site covers an area of approximately 93.9 ha. The development area covers an area of approximately 11 ha;
- The site is proposed for the development of a temporary sewer treatment system and effluent irrigation system to support the proposed residential subdivision to the east of site; and
- A Sewer Treatment Decommissioning Plan is required for the future removal of the system.

The objectives of the project were to:

- Provide a strategy for decommissioning of the sewage treatment plant.

SE undertook the following scope of works to achieve the project objective:

- Review of pertinent documentation pertaining to the proposed sewerage treatment plant;
- Assess plans and drawings for construction of the treatment system;
- Determine appropriate controls and methodology for eventual decommissioning of the system.

A summary of the decommissioning stages is presented below:

- Implementation of Erosion and Sediment Control;
- The Sewer Treatment Plant will be safely disconnected from power by a Licensed Electrical Contractor
- Removal/drainage of sludge and retained water from sewage treatment system and associated infrastructure (pipes, etc);
- Flushing of the sewage treatment system;
- Removal of above ground tanks ;
- Removal of ancillary components such as connecting pipes/pumps;
- Filling of encased pipes with concrete slurry;
- Removal of associated driveways;
- Removal of associated signage; and
- As per council advice on 11 December 20223; upon commencement of the decommissioning, the approved Vegetation Management Plan dated 21 November 2023 is to commence.

This procedure summarises requirements for waste produced in constructing the proposed development. Construction waste will be managed in accordance with the waste management hierarchy:

1. Avoid waste as a first priority
2. Re-use waste, recycle or reprocess
3. Dispose of waste as a last resort

The construction of the proposed development will generate the most amount of waste from demolition of structures. The following waste types are likely to be present:

- General demolition waste, including waste concrete, bricks, timber, metal and glass;
- Surplus materials used during site establishment, such as safety fencing and barriers possibly including plastics and metal;
- General construction waste, such as excess concrete, redundant pieces of pipe/fittings, broken bricks, timber, paper, plastic and metal; and
- Domestic waste, including food scraps, aluminium cans, glass bottles, plastic and paper containers, and putrescibles waste generated by site construction staff.

Construction will generate a relatively small amount of waste, however, the client will adequately manage and minimise impacts by implementing the waste mitigation measures listed below:

- Establish a combined waste collection system by a reputable service provider;
- Order appropriate quantities of materials to minimise wastage;
- Control the quality of materials supplied to reduce rework and problems due to quality and additional material consumption;
- Use prefabricated elements where practical and reasonable;
- Establish co-mingled recycling receptacles for packaging and food container waste;
- Separate waste steel and dispose in the steel recycling bin provided on-site;
- Reuse form work as often as possible;
- Send waste timber and formwork to a recycling facility;
- Send waste concrete to a recycling facility;
- Mulch and remove any green waste from site. Where possible depending on the species, reuse for landscaping purposes off-site;
- Recycle general waste such as paper, cardboard, aluminium cans and similar materials from offices and site facilities; and
- The potential for reuse through backfilling will be limited by geotechnical factors and space constraints onsite.

3. Site Assessment

SE undertook a site walkover on 15 July 2024 and have also reviewed a previous reports for the site prepared by SE in 2022 (SE 2022) for the assessment of the site.

SE have the following understanding of the site, presented below in **Table 3.1**.

Table 3.1 Site Summary

Item	Description
Proposed Development	Wastewater System to Service Existing Residence and 'Rural Factory'
Intended Water Supply Source	Town Water
Design Wastewater Allowances	150 L / day / person | 2.5 persons / lot | 48,375 L / day total (based on 129 lots)
Equivalent Tenements	2.5 persons / lot
Design Wastewater Flowrate[1]	Total: 150 L / day
Rainfall Station	070263 Goulburn TAFE

[1]NSW Health 2001, '*Septic Tank and Collection Well Accreditation Guidelines'*.

3.1. SE Site Walkover and Soil Sampling

A suitably experienced and qualified environmental scientist from SE undertook a site walkover the site on 25 July 2024 to make observations of site features and undertake supplementary sampling to confirm the results detailed in SE 2022.

Eight (8) boreholes were advanced across the site to make observations of sub-surface conditions and to collect samples for laboratory analysis. Eight (8) representative samples were taken and submitted to Eurofins | Environment Testing, a NATA accredited laboratory for analysis of pH and electrical conductivity. A summary of the results is provided below in **Table 3.2**.

Soil materials observed were generally consistent with SE 2022. Described as dark brown silty clay (0.01 – 0.3 m bgs), underlain by reddish brown clay (0.3 m – 1.0 m bgs).

Laboratory results are provided in **Appendix A – Laboratory Documentation**.

Photograph 1. General soil stratigraphy encountered in each borehole. Dark brown silty clay (0.01 – 0.3 m bgs), underlain by reddish brown clay (0.3 m – 1.0 m bgs).

Table 3.2 SE 2024 results summary

Soil Horizon		Borehole 1	
Borehole	Depth	pH	EC (µS/cm)
TP01	0.3-0.4	7.3	37
TP02	0.3-0.4	6.9	<10
TP03	0.3-0.4	6.9	<10
TP04	0.3-0.4	7.2	<10
TP05	0.3-0.4	5.9	<10
TP06	0.3-0.4	6.4	<10
TP07	0.3-0.4	7.3	21
TP08	0.3-0.4	7.6	39

SE note that these results are consistent with those obtained by SE 2022 and don't have a significant impact on conclusions made in the original publication of this report.

3.2. Rating of On-Site Systems

Site features recorded in SE 2023 and additionally assessed during a site walkover undertaken by SE on 15 July 2024 were assessed in terms of how they may constrain a potential on-site wastewater management system.

Table 3.2 Summary of Site Features and Potential Constraints

Site Feature	Subject Site	Rating	Comment
Flood Potential	Site situated in 'Low Flood Risk' area and outside of 1% AEP flood.	Good	No flood constraints
Exposure	High sun exposure, medium wind exposure	Good	Good evapotranspiration expected
Slope	< 10 %, generally flat with gentle slopes	Good	Low potential for run-off and erosion
Landform	Medium dense grassy stabilised landform	Good	Low potential for groundwater pollution hazard
Erosion Potential	No significant erosion potential identified	Good	Low potential for soil degradation
Site drainage	No visual signs of poor drainage identified	Good	Low potential for pooling of water
Fill	Limited fill present	Good	Low potential for subsidence or variable permeability
Buffer distance / appropriate setbacks	Appropriate area with the following setbacks available: > 100 m to permanent surface waters (Rivers, streams, lakes) > 250 m to domestic groundwater well > 40 m to other waters (farm dams, drainage channels, etc) > 12 m from property boundary > 6 m from swimming pools, driveways, and buildings	Good	Low health / pollution risk
Groundwater Bores	A review of Water NSW's 'real time data' application (realtimedata.waternsw.com.au) did not indicate the presence of groundwater wells within a 500m radius of the subject site	Good	Low health / pollution risk
Land Area	Total land area 93,900 m^2 Treated Wastewater Application area: 23,000 m^2 available	Good	Low health / pollution risk
Rocks and Rock Outcrops	Isolated areas of rocks on surface	Good	Rocks to be removed as part of installation works. System performance will not be affected by rocks
Geology / Regolith	No major geological discontinuities or natural geological pathways to groundwater present	Good	Low groundwater pollution risk

No site features were found to be a major limitation to the development and operation of an on-site wastewater management system.

4. Wastewater Management System Design

The following sections provide an overview of the proposed on-site wastewater management system, with sizing and design considerations and justification for its selection. Detailed design for the system is beyond the scope of this study, but should be undertaken prior to installing the system. **Figure 2** provides a site plan detailing the approximate location of the proposed system components.

4.1. Wastewater Treatment System

To treat domestic wastewater and allow irrigation of the treated effluent, SE recommend installing a system that provides secondary treatment, with a target effluent quality of:

- Biological Oxygen Demand (BOD) < 20 mg/L;
- Suspended Solids < 30 mg/L; and
- Faecal Coliforms / E.Coli < 10 Colony Forming Units (CFU) / 100 mL.

Nutrient reduction performance will vary with system type and wastewater composition. SE recommend selection of a system able to achieve total Nitrogen concentrations of < 20 mg/L and total Phosphorus concentrations of < 20 mg/L. SE recommend one of the following treatment systems presented below.

4.1.1. Aerated Wastewater Treatment Systems (AWTS)

AWTS are pre-fabricated or pre-engineered treatment systems designed to treat small (< 2,000 L/day) wastewater flows. They are tank-based systems that typically employ the following processes:

- Settling of solids and flotation of scum in an anaerobic primary chamber (this stage sometimes avoided)
- Oxidation and consumption of organic matter through aerobic biological processes
- Clarification – secondary settling of solids
- Disinfection
- Regular removal of sludge to maintain the process.

Good maintenance of AWTS is essential to ensure a consistently high level of performance. AWTS systems should be serviced quarterly by an approved maintenance contractor. More information on these requirements is provided later in this report.

4.1.2. Biological Filter System

These systems use alternating layers of filter media and peat filled bags contained within a plastic tank. Raw wastewater is discharged directly to the top of the filter and a rich humus layer develops that separates the solids from liquid prior to composting the solids with the aid of soil micro- and macro- fauna, including earthworms and bacteria.

The system is a passive, biologically-driven treatment process that mimics processes occurring in nature. Test results indicate these systems can achieve secondary treatment quality or better. These systems usually require servicing every 12 months, and optional effluent disinfection systems (Ultra Violet light irradiation or chlorination) are available, if the effluent is to be surface-irrigated. Most domestic systems start at 2,000 L capacity, similar to an AWTS; and larger commercial sizes are also available.

4.1.3. Sand Filters

Sand filters provide advanced secondary treatment to water that has already undergone primary treatment in a septic tank or similar device. They contain approximately 600 mm depth of filter media (usually medium to coarse sand, but other media can be used) within a lined excavation containing an underdrain system. Selection of the filter media is critical and a carefully designed distribution network is necessary. A dosing well and pump is normally used to allow periodic dosing. Depending on the desired level of treatment, sand filters can be single-pass or may incorporate partial recirculation. A subsequent disinfection system is required to

allow reuse by surface irrigation. There are several proprietary sand filter systems available and detailed sizing and design of these systems is generally undertaken by the manufacturer.

4.2. Land Application of Treated Effluent

A range of possible land application systems have been considered, such as absorption trenches, evapotranspiration/absorption (ETA) beds, surface and subsurface irrigation, and sand mounds. Due to the relatively shallow soil depth (600 mm), trenches and ETA beds are not an appropriate option. Given that the site has extensive available land application areas, the preferred system is subsurface irrigation. Use of pressure compensating irrigation pipeline (commonly available from irrigation system suppliers and installers), will provide even and widespread dispersal of treated effluent loads within the root-zone of plants. Subsurface irrigation will provide beneficial reuse of wastewater and this will be especially desirable given that the site is not serviced by town water.

By properly sizing the irrigation area to ensure sustainable hydraulic and nutrient loading rates, water and nutrients will be effectively utilised and will not leach to groundwater or runoff to surface waters. Subsurface irrigation ensures that the risk of effluent being transported offsite is negligible. Importantly, subsurface irrigation is preferred over conventional surface spray irrigation which can be prone to misuse and therefore is not as effective in ensuring environmental protection. Furthermore, the soil provides a separation barrier and further treatment of effluent.

4.2.1. Sizing of the Irrigation System

Water and nutrient balance modelling was undertaken to determine sustainable irrigation rates for the property and to estimate the necessary size of the land application area required to manage the proposed hydraulic and nutrient loads. The procedures for this generally follow the DLG (1998) guidelines. Appendix 2 contains a printout of the model spreadsheets completed for the development, which contain the calculation steps used in the water balance spreadsheet.

The water balance used is a monthly model adapted from the “Nominated Area Method” described in DLG (1998) and NSW DEC (2004). These calculations determined minimum irrigation area sizes for given effluent loads for each month of the year. The water balance can be expressed by the following equation:

Precipitation + Effluent Applied = Evapotranspiration + Percolation

A conservative nutrient balance was also undertaken, which calculates the minimum irrigation area requirements to enable nutrients to be assimilated by the native soils and vegetation. The nutrient balance used here is based on the simplistic DLG (1998) methodology, but improves this by more accurately accounting for natural nutrient cycles and processes. It acknowledges that a proportion of nitrogen will be retained in the soil through processes such as ammonification (the conversion of organic nitrogen to ammonia) and a certain amount will be lost by denitrification, microbial attack and volatilisation (Patterson, 2003, Geary & Gardner 1996). Patterson (2002) estimates that these processes may account for up to 40% of total nitrogen loss from soil. In this case, a more conservative estimate of 20% is adopted for the nitrogen loss due to soil processes. Table 4 presents the key data used and results of the water and nutrient balances.

Table 4.1 Summary of Water and Nutrient Balance Modelling (VLCAF Calculation)

Parameter	Units	Value	Comments

Average Effluent Load	L/day	50,000	Maximum anticipated load based on full occupancy of residence and factory components.
Precipitation	mm/month	Goulburn Tafe F.Stn Mean	From BoM Data (Goulburn Tafe 070263).
Evaporation	Mm/month	Goulburn Tafe F.Stn Mean	From BoM Data (Goulburn Tafe 070263).
Retained rainfall	Unitless	0.8	Proportion of rainfall that remains on-site and infiltrates soil. Based on site slopes, a factor of 0.8 is considered conservative.
Crop factor	Unitless	0.7	Conservative maximum annual value.
Design Irrigation Rate	mm/day	3.0	Nominated rate from Table M1, AS 1547:2012.
Effluent total nitrogen concentration	mg/L	20	Conservative target effluent quality for typical biological filter systems.
Nitrogen lost to soil processes	Annual %	20	Paterson (2002)
Effluent total phosphorus concentration	mg/L	12	Conservative target effluent quality for typical biological filter systems.
Soil phosphorus sorption (P-sorption) capacity	mg/kg	300	Estimated P-sorption capacity for the sandy clay loam topsoil based on known P-sorption values for similar soil types.
Nitrogen uptake rate by plants	Kg/Ha/yr	400	Rate expected of effluent irrigated pasture grasses (NSW Agriculture, 1997)
Phosphorus uptake rate by plants	Kg/Ha/yr	40	Rate expected of effluent irrigated pasture grasses (NSW Agriculture, 1997)
Design life of system (for nutrient management)	Years	50	Reasonable expected service life of the irrigation system
Results			
Water Balance	m^2	**18,428**	Limiting Factor
Nitrogen Balance	m^2	7,300	-

Based on this assessment, SE considers Water balance to be the limiting factor, requiring a minimum of 18,428 m^2 of irrigation area. Although already conservative, SE consider a suitable irrigation area to be 19,000 m^2.

4.2.2. Siting and Configuration of the Irrigation Area

It is preferable to keep the irrigation area as high on the property as possible and a maximum distance away from any water bodies or residential structures. The preferred area is adjacent the pre-existing irrigation zone in the south-western portion of site due to available area and buffering from site boundaries, water bodies, and residential structures.

The minimum setbacks for effluent disposal areas provided in Liverpool DCP Pt 1. Section 15 were taken into consideration during the design of the irrigation area. A summary is provided below in **Table 4.2.**

Table 4.2 Minimum Setbacks for Effluent Disposal Areas

System	Distance	Setback
All Land Application Systems	100 m	Permanent surface waters (river, stream, lake etc.)
	100 m	Domestic groundwater wells
	40 m	Other waters (farm dams, intermittent waterways, and drainage channels)
Surface Spray Irrigation	6 m	If area up-gradient of driveways and property boundaries
	3 m	If area down-gradient of driveways and property boundaries
	15 m	Dwellings
	3 m	Pathways and walkways
	6 m	Swimming pools
	6 m	If area up-gradient of swimming pools, driveways, property boundaries, and buildings

Reference: Liverpool DCP Pt.1 Section 15.

4.2.3. Irrigation System Description

A detailed irrigation system design is beyond the scope of this report; however, a general description of subsurface irrigation is provided here.

Subsurface irrigation comprises a network of drip-irrigation line that is specially designed for use with wastewater. The pipe contains pressure compensating emitters that often employ a biocide agent to prevent build-up of microbial slimes and inhibit root penetration. The lateral pipes are typically installed at 0.6 to 1 m spacing, roughly parallel and along the contour if possible. Installation depth is commonly 100-150 mm, in order to maximise evapotranspiration. It is critical that the irrigation pump be sized properly to ensure adequate pressure and delivery rate to the irrigation network.

A filter should be is installed in the main line to remove fine particulates that could block the emitters. This must be cleaned regularly following manufacturer's instructions. Vacuum breakers should be installed at the high point/s in the system to prevent air and soil being sucked back into the drippers when the pump shuts off. Flushing valves are an important component and allow periodic flushing of the lines, which should be done at least yearly during the dry season. Flush water can be either returned to the treatment system, or should be released where it will be readily absorbed (not during rainfall).

All trenching used to install the pipes must be backfilled properly to prevent preferential subsurface flows along trench lines, particularly where trenches are not absolutely parallel to contours. Irrigation areas should not be subject to traffic movement, especially by vehicles, otherwise compaction around emitters can lead to premature system failure.

5. Operation and Maintenance of Wastewater Management System

Proper maintenance of the treatment and land application systems is important to ensure effective long-term operation. Specifically, SE recommend the following measures be undertaken detailed below in Sections **5.1** to **5.4**.

5.1. Wastewater Generation

- Good water conservation practices should be adopted by the household, if not already in place to ensure that both the treatment and land application systems are not overloaded.
- AAA rated plumbing is recommended for all water fixtures. The household's water consumption can be reduced substantially by using the following water saving fixtures and devices:
    - Dual flush 6/3 L pan and cistern
    - AAA rated taps, limiting flow to less than 9 L/minute
    - AAA rated shower heads to limit flow to 6 L/minute
    - AAA rated dishwasher, using not more than 18 litres per wash
- Household cleaning products that are suitable for on-site wastewater managements should be selected, and used sparingly
- Large quantities of household chemicals such as bleaches, disinfectants, fabric softeners or other antibacterial solutions should never be flushed down sinks or toilets
- Fats and oils should be kept out of the system as much as possible (place in containers in the bin)
- Food scraps interfere with most treatment systems (biological filters excluded) and so should be prevented from entering sinks and toilets
- Detergents which are low in sodium and phosphorus (powder detergents use large amounts of sodium as filler).

5.2. Wastewater Treatment System

- The treatment system should be regularly serviced by a suitably qualified maintenance contractor, in accordance with the manufacturer's requirements and recommendations
- Generally speaking, annual servicing is appropriate for most biological filter and sand filter systems; while quarterly servicing is recommended for AWTS
- For all system types, the following aspects should be assessed during servicing (and can also be monitored by the owner):
    - The structural integrity of all tanks, lids and pipework
    - The condition and operation of any pumps, switches, blowers (AWTS) and other electrical components
    - The condition and operation of any disinfection systems; specifically chlorine tablet supply and dosing for chlorine systems and UV lamps for UV systems (including cleaning the lamp)
    - The sludge level (primary treatment/septic tanks and primary chamber of AWTS)
    - Final effluent characteristics such as colour, odour, pH, clarity and dissolved oxygen, to measure treatment performance
    - If required, testing of effluent biochemical oxygen demand (BOD) and suspended solids. This testing should be carried out by a National Association of Testing Authorities (NATA) registered laboratory
    - Condition of biomass of treatment micro-organisms (surface scum in septic tanks, suspended media or fixed growth in AWTS and fixed growth in biological filter systems and sand filter systems).
- AWTS require additional servicing to ensure adequate air delivery and timing of aeration; and correct operation of sludge return systems and skimmers.

5.3. Irrigation System

- Regularly harvest (mow) vegetation within the irrigation area and remove this to maximise uptake of water and nutrients;
- Monitor and maintain the subsurface irrigation system following the manufacturer's recommendations, including flushing of irrigation lines;
- Regularly clean in-line filters;
- Ensure that the irrigation system is working effectively to ensure good even dispersal of effluent;
- Do not erect any structures over the irrigation area; and
- Minimise vehicle access to the irrigation area, to prevent compaction.

5.4. Rainfall Runoff

Rainfall run-on from upslope could be a minor issue during heavy or prolonged rainfall. SE note however, that on and off-site drainage appears sufficient. We recommend that this be monitored during the first wet season following installation, and if required, install diversion drains on the upslope side of the irrigation area.

6. CONCLUSIONS AND RECOMMENDATIONS

SE conclude as a result of our investigations and review of previous reports that the effluent disposal area is adequate for the proposed on-site wastewater management system and meet the needs of the expected number of occupants and land-use of the site.

Based on these conclusions, SE recommends the following measures prior to and during operation:

- Installation of water saving devices to reduce the effluent load for on-site disposal;
- Use of low phosphorus and low sodium (liquid) detergents to improve effluent quality and maintain soil properties; and
- Operation and management of the treatment and disposal system in accordance with manufacturer's recommendations and the recommendations made in this report.

7. STATEMENT OF LIMITATIONS

The findings presented in this plan are based on information provided by the client, specific searches of relevant, government historical databases and anecdotal information that were made available during the course of this investigation. To the best of our knowledge, these observations represent a reasonable interpretation of the general condition of the site at the time of report completion.

This plan has been prepared solely for the use of the client to whom it is addressed, and no other party is entitled to rely on its findings.

No warranties are made as to the information provided in this plan. All conclusions and recommendations made in this plan are of the professional opinions of personnel involved with the project and while normal checking of the accuracy of data has been conducted, any circumstances outside the scope of this report or which are not made known to personnel and which may impact on those opinions is not the responsibility of Sydney Environmental Group Pty Ltd. Should information become available regarding conditions at the site including previously unknown sources of contamination, SE reserves the right to review the plan in the context of the additional information.

This plan must be reviewed in its entirety and in conjunction with the objectives, scope and terms applicable to SE's engagement. The plan must not be used for any purpose other than the purpose specified at the time SE was engaged to prepare the plan.

Logs, figures, and drawings are generated for this report based on individual SE consultant interpretations of nominated data, as well as observations made at the time site walkover/s were completed.

Data and/or information presented in this report must not be redrawn for its inclusion in other plans or documents, nor should that data and/or information be separated from this report in any way.

Should additional information that may impact on the findings of this plan be encountered or site conditions change, SE reserves the right to review and amend this plan.

8. REFERENCES

Sydney Environmental Group (SE 2022), 'Wastewater Management Plan', dated 17 August 2022, ref: 1732-WWMP-01-170823.v1f.

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Geary, P. and Gardner, E. (1996) 'On-site Disposal of Effluent'. In Proceedings from the one day conference Innovative Approaches to the Management of Waste and Water, Lismore 1996.

Environment & Health Protection Guidelines 'Silver Book' 1998.

Isbell, R.F. (1996) The Australian Soil Classification. CSIRO Publishing, Melbourne.

DLRM (2004) Land Units of the Greater Darwin Area Region.

Department of Health (1996) Code of Practice for Small On-site Sewage and Sullage Treatment Systems and the Disposal or Reuse of Sewage Effluent.

Department of Health (2012) Land Capability Assessment for On-site Wastewater Management Guidelines.

Goulburn Mulwaree Regional Council Development Control Plan (2009)

Local Government (General) Regulation 2005;

NSW Health 2001, Septic Tank and Collection Well Accreditation Guideline.

Standards Australia / Standards New Zealand (2012). AS/NZS 1547:2012 On-site Domestic Wastewater Management.

Sydney Catchment Authority 2012, Designing and Installing On-site Wastewater Systems.

Water NSW 2019, Designing and Installing On-site Wastewater Systems.

USEPA (2002). On-site Wastewater Treatment Systems Manual. United States Environmental Protection Agency.

FIGURES

Scale :	125 m	Site Layout	
Client Name:	Corio Projects Pty Ltd	N	Figure Number: 1
Project Name:	Effluent Disposal Site Assessment		Figure Date: 1 August 2024
Project Location:	Lot 23 DP 1256090 Wilson Drive, Marulan NSW		Report Number: 1732-EDSA-01-010824.v1f

Sydney Environmental Group

Sampling Plan				
Client Name:	Corio Projects Pty Ltd	N	Figure Number:	2
Project Name:	Effluent Disposal Site Assessment		Figure Date:	1 August 2024
Project Location:	Lot 23 DP 1256090 Wilson Drive, Marulan NSW		Report Number:	1732-EDSA-01-010824.v1f

Sydney Environmental Group

Appendix A

Laboratory Documentation

Sydney Environmental Group Pty Ltd
36E Fitzroy Street
Marrickville
NSW 2204

Attention: **Max Cunningham**

Report **1117993-S-V2**
Project name EQUINOX MARULAN
Project ID 1732
Received Date Jul 15, 2024

Client Sample ID			**TP01-0.3-0.4**	**TP02-0.3-0.4**	**TP03-0.3-0.4**	**TP04-0.3-0.4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S24-JI0037603**	**S24-JI0037604**	**S24-JI0037605**	**S24-JI0037606**
Date Sampled			**Jul 15, 2024**	**Jul 15, 2024**	**Jul 15, 2024**	**Jul 15, 2024**
Test/Reference	LOR	Unit				
Chloride	10	mg/kg	44	16	< 10	< 10
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	37	< 10	< 10	< 10
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.3	6.9	6.9	7.2
Resistivity*	0.5	ohm.m	270	1000	3900	1900
Sulphate (as SO4)	10	mg/kg	140	28	< 25	< 25
Exchangeable Sodium Percentage (ESP)*	0.1	%	7.9	5.8	9.1	9.5
Sample Properties						
% Moisture	1	%	23	26	25	26

Client Sample ID			**TP05-0.3-0.4**	**TP06-0.3-0.4**	**TP07-0.3-0.4**	**TP08-0.3-0.4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S24-JI0037607**	**S24-JI0037608**	**S24-JI0037609**	**S24-JI0037610**
Date Sampled			**Jul 15, 2024**	**Jul 15, 2024**	**Jul 15, 2024**	**Jul 15, 2024**
Test/Reference	LOR	Unit				
Chloride	10	mg/kg	17	< 10	36	< 10
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	< 10	< 10	21	39
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	5.9	6.4	7.3	7.6
Resistivity*	0.5	ohm.m	1200	3400	480	260
Sulphate (as SO4)	10	mg/kg	< 25	< 25	170	< 25
Exchangeable Sodium Percentage (ESP)*	0.1	%	12	9.1	7.6	8.9
Sample Properties						
% Moisture	1	%	22	22	13	25

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Chloride	Sydney	Jul 23, 2024	28 Days
- Method: LTM-INO-4270 Anions by Ion Chromatography			
pH (1:5 Aqueous extract at 25 °C as rec.)	Sydney	Jul 23, 2024	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Sulphate (as SO4)	Sydney	Jul 23, 2024	28 Days
- Method: In-house method LTM-INO-4270 Sulphate by Ion Chromatograph			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Sydney	Jul 23, 2024	7 Days
- Method: LTM-INO-4030 Conductivity			
Exchangeable Sodium Percentage (ESP)	Melbourne	Jul 23, 2024	28 Days
- Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP)			
% Moisture	Sydney	Jul 23, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370

Eurofins ProMicro Pty Ltd
ABN: 47 009 120 549

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46-48 Banksia Road
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+61 8 6253 4444
NATA# 2561
Site# 2554

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland	Auckland (Focus)	Christchurch	Tauranga
35 O'Rorke Road	Unit C1/4 Pacific Rise,	43 Detroit Drive	1277 Cameron Road,
Penrose,	Mount Wellington,	Rolleston,	Gate Pa,
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Sydney Environmental Group Pty Ltd
Address: 36E Fitzroy Street
Marrickville
NSW 2204

Project Name: EQUINOX MARULAN
Project ID: 1732

Order No.:
Report #: 1117993
Phone: 1300 884 164
Fax:

Received: Jul 15, 2024 5:30 PM
Due: Jul 18, 2024
Priority: 3 Day
Contact Name: Max Cunningham

Eurofins Analytical Services Manager : Asim Khan

Sample Detail						Aggressivity Soil Set	Moisture Set	Exchangeable Sodium Percentage (ESP)
Melbourne Laboratory - NATA # 1261 Site # 1254								X
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	TP01-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037603	X	X	X
2	TP02-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037604	X	X	X
3	TP03-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037605	X	X	X
4	TP04-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037606	X	X	X
5	TP05-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037607	X	X	X
6	TP06-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037608	X	X	X
7	TP07-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037609	X	X	X
8	TP08-0.3-0.4	Jul 15, 2024		Soil	S24-Jl0037610	X	X	X
Test Counts						8	8	8

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to the 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and despite any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the sampling date; therefore, compliance with these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether, the holding time is seven days; however, for all other VOCs, such as BTEX or C6-10 TRH, the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Exchangeable Sodium Percentage (ESP)*	%	< 0.1			0.1	Pass	
Method Blank							
Chloride	mg/kg	< 10			10	Pass	
LCS - % Recovery							
Chloride	%	113			70-130	Pass	
Sulphate (as SO4)	%	102			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Exchangeable Sodium Percentage (ESP)*	S24-Jl0037603	CP	%	7.9	3.7	1.4	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	S24-Jl0037605	CP	mg/kg	< 10	10	26	30%	Pass	
Sulphate (as SO4)	S24-Jl0037605	CP	mg/kg	< 25	< 25	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (1:5 Aqueous extract at 25 °C as rec.)	S24-Jl0037609	CP	pH Units	7.3	7.3	<1	30%	Pass	

Comments

This report has been revised (V2) to report aggressivity and ESP resutls for samples S24-Jl0037603, S24-Jl0037604, S24-Jl0037605, S24-Jl0037606, S24-Jl0037607 and S24-Jl0037608.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Asim Khan	Analytical Services Manager
Caitlin Breeze	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Sample Properties
Ryan Phillips	Senior Analyst-Inorganic

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please click here.

RECORD

☑ Sydney Laboratory
Unit F3 Bld.F, 16 Mars Rd, Lane Cove West, NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1, 21 Smallwood Pl, Murarrie, QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐

☐ Melbourne Laboratory
2 Kingston Town Close, Oakleigh, VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Sydney Environmental Group	Project №	1732	Project Manager	Max Cuinyh
Address	U63, 45 Huntley Street Alexandria NSW	Project Name	Equinox Marulan	EDD Format (ESdat, EQuIS, Custom)	
Contact Name				Sampler(s)	Max Cuinyh
Phone №	1300 884 164			Handed over by	M.C.
Special Directions				Primary Email	enviro@sydneyenvironmental.com.au
Purchase Order				Secondary Email	Max@
Quote ID №					

Analyses (Note: Where metals are requested, please specify "Total" or "Filtered"; SUITE code should be used to ensure correct SUITE pricing.)

№	Client Sample ID	Sampled Date (dd/mm/yy)	Matrix (Solid (S) Water (W))	SEG Contam Suite 1 (TRH, BTEX, PAH, Metals, Asbestos ID)	SEG Contam Suite 2 (TRH, BTEX, PAH, Metals, OCP, PCB, Asbestos ID)	SEG Contam Suite 3 (TRH, BTEX, PAH, Metals, OCP, OPP, PCB, Asbestos ID)	SEG ENM Suite 1 (TRH, BTEX, PAH, Metals, pH, EC, Asbestos ID)	Salinity Assessment Suite (L2 Aggresivity Suite, ESP %)	Asbestos ID AS4964 (0.01%)	Asbestos ID NEPM & WA (0.001%)	B7 Suite (TRH, BTEX, PAH, Metals)	B13 Suite (OCP, PCB)	Containers: 1L Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	50mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Turnaround Time (TAT) Requirements (Default will be 5 days if not ticked)	Sample Comments / Dangerous Goods Hazard Warning
1	TP01-0.3-0.4	15/7/24	S					X														
2	TP02-0.3-0.4							X														
3	TP03-0.3-0.4							X														
4	TP04-0.3-0.4							X														
5	TP05-0.4-0.5							X														
6	TP06-0.3-0.4							X														
7	TP07-0.3-0.4							X														
8	TP08-0.3-0.4	X	X					X														
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
19																						
20																						
	Total Counts																					

☐ Overnight ☐ Same Day ☐ 1 Day ☐ 2 Day ☒ 3 Day ☐ 5 Day ☐ Other (

Method of Shipment	☐ Courier (#) ☐ Hand Delivered	☐ Postal	Name		Signature	Date	Time
Eurofins | mgt Laboratory Use Only	Received By	SYD | BNE | MEL | PER | ADL |	Signature		Date	Time	Temperature
	Received By	SYD | BNE | MEL | PER | ADL |	Signature		Date	Time	Report № 117993

Note: Metals = As, Cd, Cr, Cu, Hg, Ni, Pb, and Zn), TRH = Total Recoverable Hydrocarbons, PAH = Polycyclic Aromatic Hydrocarbons, PCB = Polychlorinated Biphenyls, BTEX = Benzene, Toluene, Ethylbenzene, and Xylene

15/7 5:30 12.7

Re: Eurofins Sample Receipt Advice - Report 1117993 : Site EQUINOX MARULAN (1732)

Max Cunningham <Max@sydneyenvironmental.com.au>

Tue 2024-07-16 7:53 AM

To:#AU25_Enviro_Sample_NSW <EnviroSampleNSW@eurofins.com>
Cc:Enviro <enviro@sydneyenvironmental.com.au>

Please place bags 'TP01' - 'TP06' on hold.

Kind regards

Max

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Monday, July 15, 2024 10:07:55 PM
To: Max Cunningham <Max@sydneyenvironmental.com.au>
Cc: Enviro <enviro@sydneyenvironmental.com.au>
Subject: Eurofins Sample Receipt Advice - Report 1117993 : Site EQUINOX MARULAN (1732)

Dear Valued Client,

Only received bags for "TP01-TP06".

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins Analytical Services Manager as soon as possible to make certain that they get changed.

Kind regards

Sharlene Santos
Sample Receipt Officer

Eurofins Environment Testing Australia Pty Ltd
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Girraween, NSW 2145
Phone: +61 2 9900 8421

E-mail: EnviroSampleNSW@eurofins.com
Website: www.eurofins.com.au/environmental-testing