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20 February 2025 WWLA1244

Milldale Subdivision Wastewater Treatment Plant: Hazardous Substances and ITA Assessment

1. Introduction

Williamson Water & Land Advisory Ltd (WWLA) has prepared this hazardous substances and industrial and trade activity (ITA) assessment to support the application by Fulton Hogan Land Development (FHLD) for a resource consent to the Environmental Protection Authority (EPA) under the Fast-Track Approvals Act 2024 (FTAA). Resource consent is required by FHLD for the construction and operation of a Wastewater Treatment Plant (WWTP) as part of FHLDs Milldale development.

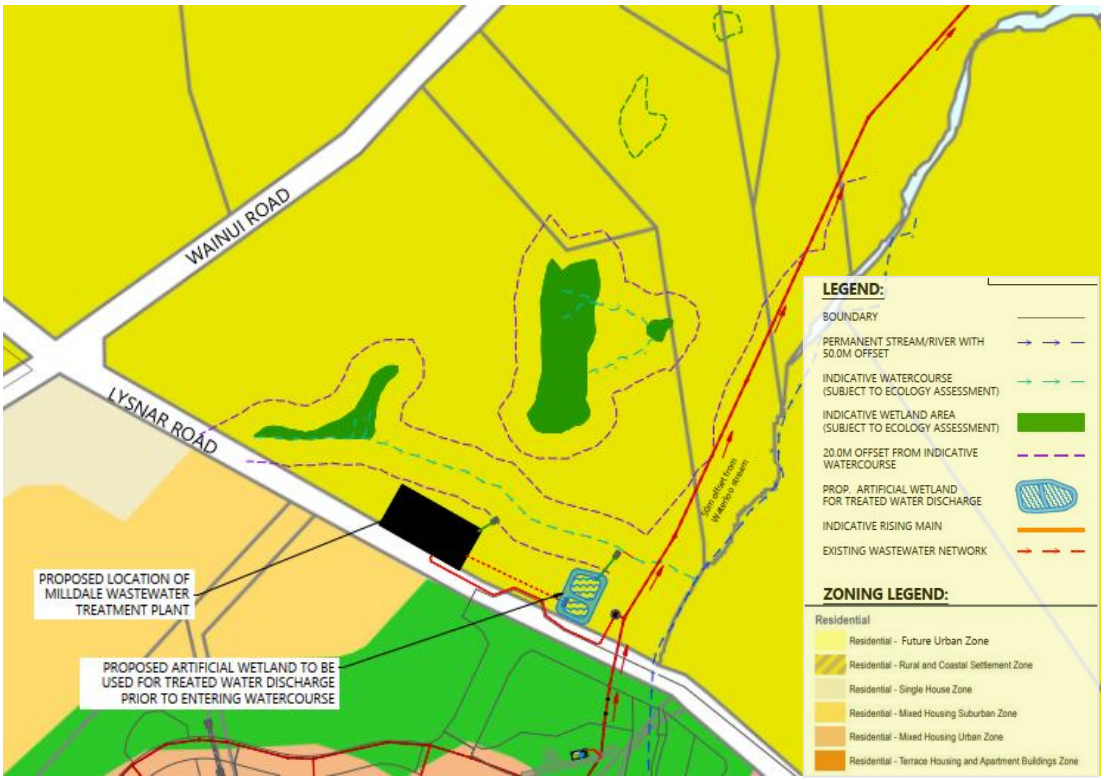

Figure 1. Milldale Wastewater Treatment Plant location – black rectangle (source: Woods, Drawing # P24-189-0005A-GE-WWTP, not reproduced to scale)

2. Statement of Qualifications and Experience

WWLA a niche employee-owned consultancy with core expertise in the fields of water resources and contaminated land. As part of our broader environmental service offering we provide hazardous substances assessment and advice to a range of clients in the infrastructure and industrial development spaces. This includes undertaking regulatory assessments and risk assessments to support resource consents and preparing management plans. We have competent independent persons on staff who are able to provide advice on storage and disposal

of hazardous substances. We also prepare Environmental Management Plans that encompass hazardous substance management as well as wider site management to ensure correct environmental outcomes.

The qualifications and experience of the author and reviewer of this report are summarised below. We confirm that we have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

2.1 Report author

Steve Tyson is an Environmental Scientist and Hazardous Substances Advisor at WWLA, where he has been employed since May 2022.

Steve holds the qualifications of Bachelor of Science (Zoology) which he completed in 1993, and Post Graduate Diploma in Environmental Management which he completed in 1996, both obtained from the University of Auckland.

Steve has 30 years of professional experience in the field of environmental management in industry, including roles such as Pollution Response Team Leader at the Auckland Regional Council and Senior Environmental Advisor at Refining NZ (previously the oil refinery at Marsden Point now Channel Infrastructure). More recently Steve completed training to become a Compliance Certifier (for both Location Compliance Certification (LCC) and Stationary Container System Compliance Certification (SCSCC)) under the Health and Safety at Work (Hazardous Substances) (HSW-HS) Regulations.

Steve's experience includes Resource Management Act compliance auditing of high risk industrial sites, pollution incident response (hazardous substance spills) and subsequent enforcement where required, consent compliance monitoring and reporting, air quality reporting, contaminated groundwater monitoring/ remediation, stormwater monitoring and reporting, hazardous substance audits and subsequent issuing of LCC's and SCSCC's as a competent person under the HSW-HS performance standards, hazardous waste management and disposal, contaminated land investigation and reporting.

2.2 Report reviewer

Shane Moore is a Principal Environmental Specialist at WWLA. Shane has been employed at WWLA since October 2022 but has 28 years of professional experience in the environmental management in New Zealand, including similar roles with multi-disciplinary consultancies including URS (now AECOM), Coffey Environments (now Tetra Tech Coffey) and Tonkin & Taylor.

Shane holds the qualifications of Bachelor and Master of Science in Geology from the University of Auckland, which he completed in 1996.

While his primary specialty is in the assessment, management and remediation of contaminated land and groundwater, Shane supports clients across a range of environmental challenges related to managing discharges of hazardous substances. Shane's experience crosses many business sectors, including land development, oil and gas, mining, defence, waste and industry. Shane's involvement in these projects has included emergency response, design and implementation of field programmes, specialist technical input, remedial design, project management, stakeholder consultation, peer review and presentation of expert evidence.

3. Background

The WWTP (the site) is located within Lot 4 DP 353309, which has a total area of 10.45 ha. The site is zoned "Future Urban Zone". The site is on the northern side of Lysnar Road, Wainui and is located directly adjacent to the Milldale development and just outside the Wainui Precinct.

The parent site is characterised by undeveloped rural land that has historically been used for farming. The topography of the parent site generally slopes from north-west to south-east and has two stands of poplar trees. There is an unnamed tributary of the Waterloo stream that bisects the southern portion of the site, the stream is located some 30 m from the footprint of the proposed WWTP.

The area subject to the works (and associated enhancement planting) covers a total land area of approximately 1.21 ha and has been positioned in the southern corner of the parent site, directly adjacent to Lysnar Road as illustrated in **Figure 1** above. The works site is generally flat and has been utilised as a construction compound supporting the ongoing delivery of the Milldale development. A full description of the Site and surrounds is provided in the application AEE. An indicative layout of the WWTP is provided in **Appendix A**.

FHLD is seeking approval to authorise the construction and operation of a WWTP on Lysnar Road, Wainui. The proposed WWTP will locally treat the wastewater generated throughout the Milldale subdivision. A full description of the project is provided in the application AEE.

We understand that the WWTP will operate on a temporary basis until Watercare constructs new infrastructure in the area, after which time the WWTP will be decommissioned and wastewater will be diverted to Watercare's system.

Based on our discussions with Apex Water (lead WWTP designer), we understand that key elements of the WWTP as they relate to hazardous substances include:

- Bulk tanks of acetic acid and sodium hydroxide (each tank 10,000 L). The tanks will be connected to the treatment process via an automated dosing system.
- Transportable containers (1,000 L intermediate bulk containers or IBCs) of aluminium sulphate, citric acid and sodium hypochlorite. One IBC of each of the substances will be connected to the treatment system, with another IBC of each in storage.
- Diesel as generator fuel, note this is not separate storage but is contained in the internal fuel tank of the generator.
- Secondary containment will be provided for all bulk hazardous substances, as follows:
  - Bulk tanks will either be self-bunded (double skinned) or within bunded areas.
  - Bunds will be constructed of concrete and will be lined with chemically resistant coating where necessary.
  - Bunds will also be covered to prevent the ingress of rainwater.
  - IBCs, if stored outside will be stored in covered bunded areas and if inside will either be bunded or on drip trays that drain to an area where spills can be recovered.
  - A containment system will also be provided for the bulk chemical delivery area. This will be sized to contain 110% of the volume in the largest road-tanker compartment (5,500L).
- Incompatible substances will be correctly segregated.
- Stormwater generated in in areas where hazardous substances are stored or used will be collected and diverted for treatment through the WWTP process.
- No methane capture/ flaring will occur, and no boilers will operate on the site.

A hazardous substances assessment is required to determine the activity status of the hazardous substances proposed to be used at the WWTP under the provisions of Section 31 of the Auckland Unitary Plan (AUP). Similarly, an assessment is also required against the ITA requirements of Section E33 of the AUP.

This document sets out our assessment against the above sections of the AUP. We note that this assessment is based on preliminary design information, which we consider appropriate for the Fast-Track Approvals process. However, we recommend that it is updated, and the conclusions

are confirmed, when detailed design information becomes available. However, we note that such reassessment is unlikely to materially change the outcome since the activity is already assessed as being discretionary.

This letter has been prepared by a suitably qualified and experienced hazardous substances practitioner. A CV for the assessor is available on request.

4. Hazardous Substances Assessment

In summary, the controls and measures that will be put in place at the WWTP mean that the proposed facility will largely comply with the permitted standards for hazardous facilities as specified under Section E31 (although some setbacks may not be met). However, overall the quantity of toxic, corrosive and eco-toxic substances proposed to be stored onsite triggers a Discretionary Activity status.

As described in **Section 2**, a range of hazardous substances will be stored, handled and used the proposed WWTP, these are summarised in **Table 1** and detailed in **Appendix B**. The hazardous characteristics of the majority of the substances are toxicity, corrosivity and eco-toxicity. There are lesser quantities of flammable substances (diesel).

For the purposes of this assessment we have made the following assumptions:

- The WWTP will be zoned Future Urban Zone.
- Hazardous substances located on the site will be placed within 30 metres of the nearest watercourse.
- The WWTP will treat water to a standard suitable for discharge to the receiving environment.
- Smaller quantities of chemicals used at the WWTP, such as cleaning products or maintenance oils etc., are expected to be stored indoors at levels well below the thresholds specified in the AUP. On this basis these substances have not been assessed further.

The separation distance assumption is considered to provide a conservative assessment as the final WWTP design may be able to achieve this standard.

Assessment against the relevant hazardous substance requirements of Section E31 of the AUP is provided in **Table 1** to **Table 3**.

The following colour coding is used throughout this report:

- Green shading indicates permitted activity thresholds or standards are met.
- Orange shading indicates permitted activity thresholds or standards are NOT met and either additional controls are required and/or that activity will have a discretionary activity status.
- Red shading indicates the activity has a discretionary status.

Table 1. Assessment of Activity Status under Future Urban Zone (Table E31.4.3)

HSNO classification	Sub-class (combined quantities)	Proposed volume of substance on site (tonnes unless specified)	Table E31.4.3 Activity	Table E31.4.3 Permitted Activity (PA) threshold volume (tonnes)	Table E31.4.3 Discretionary Activity (D) threshold volume (tonnes)	Activity Status
Flammable liquids Class 3	3.1D	0.4	A91	< 1	≥ 1	PA
Toxic Class 6	6.1C and	18.2	A101	< 0.3	≥ 0.3	D

HSNO classification	Sub-class (combined quantities)	Proposed volume of substance on site (tonnes unless specified)	Table E31.4.3 Activity	Table E31.4.3 Permitted Activity (PA) threshold volume (tonnes)	Table E31.4.3 Discretionary Activity (D) threshold volume (tonnes)	Activity Status
	6.3-6.9					
Corrosive Class 8	8.1, 8.2A and 8.3	31.8	A102	< 0.05	≥ 0.05	D
	8.2B and 8.2C	24.5	A103	< 0.3	≥ 0.3	D
Eco-toxic Class 9 (all assumed to be within 30 m of a watercourse)	9.1B, 9.2B, 9.3B and 9.4B	5.2	A107	< 3	≥ 3	D
	9.1C, 9.2C, 9.3C and 9.4C	10.5	A109	< 10	≥ 10	D
	High BOD5 (>10,000 mg/l)	5.2	A111	< 20	≥ 20	PA

Table 2. Assessment of Activity Status under all zones (Table E31.4.1)

Activity	Conditions / Standard	Comment on assessment
Table E31.4.1 Hazardous facilities activity status: all zones	A5 - Use, storage and disposal of hazardous substance sub-classes 1.4, 1.5, 1.6, 6.1D, 6.1E, 9.1D and 9.2D	Permitted Activity A5 applies – as detailed in **Appendix B,** hazardous substance in sub-classes 6.1D and 6.1E are proposed to be stored and used the site. This activity is permitted.
	A7 - Use, storage and disposal of hazardous substances above restricted discretionary thresholds.	Discretionary Activity A7 applies – to the use and storage of hazardous substances at the proposed WWTP as corrosive substances are proposed in quantities above the specified thresholds for controlled and restricted discretionary activities in activity table E31.4.3 (refer **Table 1** above). An assessment against the other activities in table E31.4.1 confirms the following: • Radioactive materials will not be stored on the site (A1); • Petrol, diesel or LPG associated with retail sale will not be stored on the site (A2, A3 and A4); • Subclasses 6.1D will be stored and used on the site, permitted activity (A5); and • The site will not be a fire station or a fire-fighting training facility (A6).

As shown in **Table 1**, the aggregate quantities for the toxic; corrosive and ecotoxic classes (within 30 m of a watercourse) exceed the permitted activity thresholds. Therefore, as set out in **Table 2**, the proposal is assessed as having a Discretionary Activity status.

If the final WWTP design can achieve a 30 m set back from the nearest watercourse (for Class 9 substances) those activities will comply with permitted activity thresholds. However, the overall status of the proposal will remain Discretionary due to the volume of toxic and corrosive substances required to be stored at the WWTP.

While the proposal has been assessed as a discretionary activity overall, the permitted activity standards set out in Section E31 of the AUP provide guidance on good practice within the Auckland Region, **Table 3** provides an assessment of the proposal against these standards.

As shown only the setbacks from watercourses may not meet permitted activity standards. However, these will be achieved where possible and all parts of the WWTP facility will be designed and operated to ensure that offsite effects from the use of hazardous substances are no more than minor.

Proposed conditions of consent are included as **Appendix C** to this assessment.

Table 3. Assessment of the proposal against Permitted Activity standards in Section E31 of the AUP

Standard	Requirements	Comment on assessment
E31.6.1 Hazardous facilities site design	Standards that apply to the design of hazardous facilities: (1) Hazardous substance locations must be designed, constructed and operated to ensure that: (a) setbacks from the more sensitive zones and watercourses achieve the distances specified for the relevant subclass; and	May Comply – due to the proximity of watercourses and proposed residential lots, setbacks may not be able to be achieved for all substances stored or used on the site. However, setback will be achieved where possible and all parts of the facility will be designed and operated to ensure that offsite effects from the use of hazardous substances are no more than minor.
	(b) hazardous substances are stored to: (i) ensure containment in the event of a spill; and (ii) prevent the accumulation of any solid, liquid, gas or vapour outside of the site.	Will Comply – hazardous substances will be stored within tanks that are self-bunded (i.e. double skinned) or within secondary containment (bund) that achieves at least 110% of the volume of the largest tank within the bund. The WWTP will have a comprehensive Environmental Management Plan (EMP), including spill response plan, and spill kits will be available at the site. The WWTP will treat water to a standard suitable for discharge to the receiving environment such that there will be no accumulation of any solid, liquid, gas or vapour outside of the site. The facility will also be designed and operated to ensure that offsite effects from the use of hazardous substances are no more than minor.
E31.6.2 Site drainage systems	Standards that apply site drainage systems: (1) The site drainage system must prevent the entry or discharge of hazardous substances into: (a) the stormwater or sewerage systems (unless authorised by the network operator); and (b) air, land or water (including groundwater and potable water supplies), unless authorised by a resource consent or another rule in the AUP.	Will Comply – areas where hazardous substances are stored or used will be serviced separate drainage systems with no connections to the stormwater system. This system will divert discharges to the wastewater treatment plant for treatment. The facility will also be designed and operated to ensure that the effects of discharges of hazardous substances to air, land or water are no more than minor.
E31.6.3 Spill containment system	Standards that apply to spill containment on the site: (1) Areas where a hazardous substance spill may occur must include spill containment that is: (a) constructed from impervious materials; and (b) for liquid hazardous substances:	Will Comply – bunds where hazardous substances are to be stored/ used will be constructed of concrete and lined with an appropriate chemical resistant coating. Bund capacity will be sized at 110% of the volume of the largest container within the bund. Bulk chemical deliveries will be carried out on a chemical delivery apron which will be sized

Standard	Requirements	Comment on assessment
	(i) contain the maximum volume of the largest tank plus an allowance for stormwater or fire water; (ii) for drums or other smaller containers, be able to contain half of the maximum volume of substances stored, plus an allowance for stormwater or fire water; (iii) prevent any spill and any contaminated stormwater and/or fire water from entering the stormwater drainage system (unless authorised by the network operator). (iv) prevent any spill and any contaminated stormwater and/or fire water from discharging into air, land or water (including groundwater and potable water supplies), unless authorised by a resource consent or another Standard in the AUP.	to contain 110% of the volume in the largest chemical delivery tanker compartment. It is proposed that an EMP will be prepared as a condition of consent. This will include detailed response actions to take in the event of hazardous substance spills. Spill kits will be located near areas where hazardous substances are stored and used.
E31.6.4 Hazardous facilities waste management	Hazardous wastes must be disposed of at lawfully operated waste facilities or be serviced by a Council approved waste disposal contractor.	Will Comply – any hazardous waste produced at the site will be stored inside until removal for appropriate disposal to a lawfully operated waste facility.

5. ITA Assessment

In summary, an assessment against the Industrial and Trade Activity requirements of Section E33 of the AUP has determined that (subject to appropriate design) the proposed WWTP will be a permitted activity. The preparation of an Environmental Management Plan (EMP), including a spill response plan and inspection schedule, in accordance with Standard E33.9, will ensure that the proposed WWTP meets the Permitted Activity standards.

The rules applying to ITAs are determined based on Table E33.4.3, which includes a list of ITAs and classifies the risk of an ITA based on the activity area. The proposed WWTP is captured by the two 'sewage treatment and handling' activities, as set out in **Table 4**.

Table 4. Industrial or trade activity risk criteria

Description of industrial or trade activity		Low risk	Moderate risk	High risk
Sewage treatment and handling	Environmentally hazardous substances storage or use (excluding sewage)	Activity is never low risk	No activity area	Any activity area
	Sewage solids storage	Less than 1000 m^2	1000 m^2 to 5000 m^2	More than 5000 m^2

The ITA activity area is defined (in Section J of the AUP) as the total of:

- All areas used for outdoor storage, handling or processing of materials or products that may contribute to the quality or quantity of environmentally hazardous substance discharges. This includes areas that contribute runoff (including roofs) to the ITA area; and
- The area at risk from failure of the largest unbunded container.

The calculation of ITA activity area excludes all:

- Indoor or covered areas that do not contribute discharge to land or water;
- Areas that are not used for or affected by the ITA; and
- Any areas that discharge lawfully to an authorised trade waste system.

As described in **Section 2**, areas where hazardous substances are stored or used will be drained back to the WWTP for treatment, thereby discharging to "to an authorised trade waste system". All other areas of the WWTP, such as building roofs, carparking / yards, landscaping etc., will be designed and operated such that they are not at risk from a spill from an environmentally hazardous substances or used for storage of non-inert materials. These areas are therefore not classified as ITA areas. On this basis the WWTP has no ITA activity area and is classified as moderate risk. **Table 5** provides assessment of the activity status of the proposal against the requirements of Section E33 of the AUP.

Table 5. Assessment of the Activity Status under Section E33 of the AUP

Standard	Activity	Description	Activity status
Table E33.4.1 Land use activity status: industrial or trade activity	A5	Use of land for an existing or new industrial or trade activity listed as moderate risk in Table E33.4.3	PA
Table E33.4.2 Discharge of contaminants from an industrial or trade activity area	A17	Discharge of contaminants from an existing or new industrial or trade activity area listed as moderate risk in Table E33.4.3	PA

As shown in **Table 5**, the activity is assessed as being permitted, **Table 6** provides assessment of the proposal against the permitted activity standards.

Table 6. Assessment of the proposal against Permitted Activity standards of Section E33 of the AUP

Standard	Conditions / Standard	Comment on assessment
E33.6.1.1 (1) Permitted activity land use standards: Wastewater and washwater disposal	Wastewater and washwater must be disposed of on-site via the sanitary sewer, (with approval from Watercare), or collected, for recycling or disposal, to a system or facility with all the appropriate authorisations to accept wastewater of that type. Wastewater or washwater also includes: (a) boiler blow down and condensate; (b) all waste liquids generated or collected as part of an industrial or trade activity; (c) cooling tower water excluding vapour; and (d) condensate from air compressors.	Will comply – all wastewater from the site, including washrooms and toilets, will be collected for treatment through the WWTP process. There will be no boilers or cooling towers installed as part of the proposed WWTP.
E33.6.1.1 (2) Permitted activity land use standards: Spill response plan	Spill response plan (SRP) prepared where any environmentally hazardous substance is handled, used or stored on land at a quantity greater than used for domestic purposes. SRP must meet the requirements of Table E33.9.1, as relevant and be supplied to the Council on request.	Will comply – the EMP, proposed to be prepared as a condition of consent, will include a spill response plan that addresses the requirements of Table E33.9.1.
E33.6.1.1 (3) Permitted activity land use standards: Spill response plan	For environmentally hazardous substances in quantities covered by Part 4 of the Hazardous Substances (Emergency Management) Regulations 2001, a spill response plan prepared in accordance with those regulations will be considered to comply with Standard	Will comply – the proposed WWTP will store environmentally hazardous substances in quantities above the thresholds specified in Schedule 4 of the Hazardous Substances (Emergency Management) Regulations 2001. The spill response plan (part of the

Standard	Conditions / Standard	Comment on assessment
	E33.6.1.1(2) provided the emergency spill response plan also explicitly addresses matters (vi) to (x) in Table E33.9.1.	EMP) will be prepared in accordance with those regulations and Table E33.9.1.
E33.6.1.1 (4) Permitted activity land use standards: Spill response plan	For environmentally hazardous substances not covered by Part 4 of the Hazardous Substances (Emergency Management) Regulations 2001, a spill response plan prepared in accordance with Council's factsheet 'Being Prepared for a Spill' will be considered to comply with Standard E33.6.1.1 (2).	Standard does not apply – the proposed development is covered by Part 4 of the Hazardous Substances (Emergency Management) Regulations 2001.
E33.6.1.1 (5) Permitted activity land use standards: Secondary containment	When the quantity of environmentally hazardous substances stored above the ground exceeds that used for domestic purposes, it must be stored: (a) in a container and in a manner that prevents the entry of rainwater into the container; and (b) within a secondary containment device or within a containment system that is constructed of impervious materials that are resistant to chemical attack from the substances contained therein.	Will comply – environmentally hazardous substances will be stored within closed containers (bulk tanks or intermediate bulk containers (IBCs)). Secondary containment bunds will be constructed from concrete and lined with an appropriate chemical resistant coating.
E33.6.1.1 (6) Permitted activity land use standards: Secondary containment	For environmentally hazardous substances in quantities covered by Part 4 of the Hazardous Substances (Emergency Management) Regulations 2001, storage requirements in accordance with those regulations will be considered to comply with Standard E33.6.1.1(5).	Will comply – the proposed development will store environmentally hazardous substances in quantities above the thresholds specified in Schedule 4 of the Hazardous Substances (Emergency Management) Regulations 2001 and will meet the secondary containment storage requirements of those regulations.
E33.6.1.1 (7) Permitted activity land use standards: Secondary containment	For environmentally hazardous substances not covered by Part 4 of the Hazardous Substances (Emergency Management) Regulations 2001, storage requirements in accordance with council's factsheet 'Above Ground Storage' noting the following bund sizing criteria for secondary stage storage, will be considered to comply with Standard E33.6.1.1(5) where: (a) for tanks the bund has a storage capacity of at least 110 per cent of the capacity of the largest tank taking into account the volume displaced by any equipment and/or materials stored within the bund; and (b) for drums the bund has an effective storage height of at least 100mm, allowing for any sloping ground, and the bund is set back from the drums by a distance equal to half the height of the stacked or stored drums.	Standard does not apply – the proposed development is covered by Part 4 of the Hazardous Substances (Emergency Management) Regulations 2001.
E33.6.1.1 (8) Permitted activity land use standards:	All secondary containment devices must be designed, constructed and managed so that uncontaminated rainwater and stormwater	Will comply – secondary containment on the site will be designed and managed to prevent uncontaminated rainwater and

Standard	Conditions / Standard	Comment on assessment
Secondary containment	runoff is prevented from flowing into the contained area.	stormwater from flowing into the bunded areas.
E33.6.1.1 (9) Permitted activity land use standards: Regular inspections	Weekly inspections must be undertaken and recorded to check that environmentally hazardous substances are stored and/or contained appropriately.	Will comply – the proposed EMP will include a weekly inspection schedule (with associated record keeping).
E33.6.1.1 (10) Permitted activity land use standards: Underground storage tanks	A regular reconciliation process must be undertaken for any environmentally hazardous substance stored in an underground storage tank that will identify any leakage or unaccounted losses of material from the tank.	Standard does not apply – The proposed development will not include any hazardous substance underground storage tanks.
E33.6.1.1 (11) Permitted activity land use standards: Waste bins	Any waste compactors and bins must be located and operated in such a manner that prevents leachate or waste leaking from them.	Will comply – no waste compactors will be present. The regular inspection schedule will include monitoring any waste bins.
E33.6.1.1 (12) Permitted activity land use standards: On-site vehicle re-fuelling	All on-site vehicle re-fuelling areas must be segregated and housed under cover, and/or surrounded by a drain that drains to an appropriately designed and sized stormwater treatment and spill containment device fitted with a shut-off valve.	Standard does not apply – the proposed development will not include refuelling facilities.
E33.6.1.1 (13) Permitted activity land use standards: EMP	Operations must be undertaken in accordance with an environmental management plan specific to the industrial or trade activity. This plan must be prepared in accordance with Table E33.9.2 and supplied to Council upon request.	Will Comply – the EMP will be prepared in accordance with Table E33.9.2 of the AUP and will be specific to the WWTP.
E33.6.1.1 (14) Permitted activity land use standards: Sewage treatment facility	Where the industrial or trade activity is located within a sewage treatment facility then the wastewater generated on site by that industrial or trade activity may be disposed of within that facility.	Will Comply – the activity is a sewage treatment facility and wastewater generated on the site will be disposed of within the WWTP.
E33.6.1.2 Permitted activity discharge standards	Activities list in Table E33.4.2 must comply with: The discharges of contaminants must result in less than minor adverse environmental effects on the receiving environment without the need for stormwater treatment (with the exception of on-site vehicle refuelling areas requiring stormwater treatment and spill contaminant devices under the permitted activity Standard E33.6.1.1(12)).	Will Comply – The ITA activity areas will not be discharged to stormwater.

6. Assessment of Risk and Effects

Under Section E31 Council is afforded discretion on several matters relating to assessment of Restricted Discretionary activities, including:

- The location, design and management of hazardous facilities;
- How risks to people, property and the environment are avoided or adequately mitigated; and
- Assessment of cumulative effects of hazardous facilities.

While Council is afforded full discretion with respect to a Discretionary activity, as applies in this instance, the matters of control provided for Restricted Discretionary activities provide a helpful baseline for assessing risks and effects. We provide the following assessment of risk and effects related to the proposal.

6.1 Location, design and management

As described in the preceding sections, the WWTP will be designed to ensure that the effects of discharges of hazardous substances to air, land or water are no more than minor. Design factors will include:

- Location of hazardous substances centrally within the WWTP, with greatest setback from the site boundaries, where possible.
- Appropriate segregation and separation of incompatible substances and processes.
- Secondary containment will be provided for all bulk hazardous substances.
- Stormwater generated in areas where hazardous substances are stored or used will be collected and diverted for treatment through the WWTP process.
- Dedicated unloading areas with unloading of bulk liquids using closed systems designed to minimise the risk of material loss.

With respect to management, as described in the preceding sections, the WWTP will be operated in accordance with a site-specific EMP which will include training and monitoring requirements, unloading and safe handling procedures, spill response plan, etc. It is proposed that as a condition of consent a site-specific EMP will be prepared for submission to the Council prior to commissioning.

In summary, we consider that implementing appropriate conditions of consent will ensure that the design and management of proposed WWTP avoids or adequately mitigates adverse effects, including risks, to people, property and the environment.

6.2 Risk to people, property and the environment

The risk or harm that a particular event presents is a function of the likelihood of the event occurring and the consequence of the event. The hazard identification and risk assessment processes are further detailed in **Appendix D**, we note the following key points:

- With respect to likelihood - hazardous substances will only be released if there is a spill during unloading of chemicals / filling of tanks or a failure of secondary containment. As described above both engineering (e.g. closed systems, high level alarms etc.) and management (e.g. trained staff, monitoring, spill response procedures etc.) controls will be implemented at the WWTP. On this basis the likelihood of a release occurring which results in effects beyond the boundary of the WWTP is expected to be only a rare or unlikely, in other words probable only in extraordinary circumstances.
- With respect to consequence - the hazardous substances proposed to be stored and used in bulk at the WWTP (refer to **Appendix B**) have low to medium hazard levels[1] with respect to potential effects on human health or environmental receptors.

  The substances present a low health risk other than via direct contact. Other than site workers (whose exposure will be managed via workplace health and safety procedures), it is therefore highly unlikely that future residents will be exposed to discharges of hazardous substances from the WWTP. As the hazardous substances are all in liquid form, in the event of an uncontrolled release, they will either soak to ground or be captured and diluted in the

[1] Ministry for the Environment, 2002. Land Use Planning Guide for Hazardous Facilities. A resource for local authorities and hazardous facility operators. A report prepared by the Hazardous Facilities Screening Procedure Review Group in conjunction with the Ministry for the Environment.

watercourses before they reach the nearest human receptors. The pathway for exposure to human receptors (other than site workers) is therefore incomplete except via air or vapour discharges. Air or vapour discharges would only be relevant in the context of a fire, but in the unlikely event of a fire the impact is not expected to be materially different from a house fire on any of the surrounding residential lots. In addition, the WWTP will also have fire monitoring and control systems that will further mitigate potential effects.

With respect to potential environmental effects, the substances proposed to be used at the WWTP are generally acutely toxic to aquatic ecosystems. So, a release of large quantities of the substances would result in significant short-term effects, i.e. die-off of flora and fauna. However, as noted above with appropriate engineering and management controls a release of large quantities of the substances would only be expected to occur in extraordinary circumstances. In addition, the substances typically have a low potential for bioaccumulation and generally attenuate (for example through volatilisation and/or biodegradation) rapidly in the environment so there is limited potential for long-term effects.

In conclusion, as detailed in **Appendix D**, with industry standard controls in place it is very unlikely that hazardous substances will be released from the site, since the consequence of a release is low to moderate, operation of the WWTP presents a low risk overall.

6.3 Cumulative effects

The WWTP will be located in a residential development, and there are no other facilities anticipated to store and use hazardous substances in the area. As a result, there are not expected to be any cumulative effects from other source of hazardous substances.

As described in the previous sections, small spills will be contained and managed, so there will be no cumulative effects on human health or the environment because of this type of incident.

7. Summary and Conclusions

In summary, this assessment has determined that:

- The quantity of hazardous substances proposed to be stored onsite triggers a Discretionary Activity status under Section E31 of the AUP.
- Subject to appropriate design ensuring that areas where hazardous substances are stored or used will be drained back to the WWTP for treatment, the proposed WWTP will be a permitted activity under Section E33 of the AUP.
- The controls and measures that will be put in place at the WWTP mean that the proposed facility will largely comply with the permitted standards for hazardous facilities as specified under Section E31. While some setbacks may not be met, operation of the WWTP presents a low overall risk to people, property and the environment.

In conclusion, we consider that implementing appropriate conditions of consent will can ensure that the design and management of proposed WWTP avoids or adequately mitigates adverse effects, including risks, to people, property and the environment. Proposed conditions of consent are included as **Appendix C** to this assessment.

8. Closure

Please contact the undersigned if you have any queries in relation to this assessment.

Yours sincerely,

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Appendix A. Layout plan

NOTES:

1. ALL WORK AND MATERIALS TO COMPLY WITH AUCKLAND COUNCIL STANDARDS. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.
2. FOR ACCESSWAY DETAILS REFER TO WOODS TYPICAL CROSS SECTIONS DRAWINGS P24-189-2200-RD-WWTP TO 2201-RD-WWTP.
3. LOCATION OF STREETLIGHTS INDICATIVE ONLY (SUBJECT TO FINAL DESIGN BY TECHLIGHT LTD).
4. REFER TO DRAWING P24-189-2600-RD-WWTP AND 2601-RD-WWTP FOR LONG SECTIONS OF ACCESSWAYS.

WOODS
Est.1970

20m OFFSET FROM CENTER OF WATERCOURSE

TANK STORAGE AREA

TREATMENT PLANT BUILDING

2m HIGH TOPSOIL BUND
REFER TO LANDSCAPING PLANTING PLANS FOR DETAILS

RL 16.75m

RL 16.50m

RL 16.00m

BIOLOGICAL TREATMENT AREA

PROPOSED SITE FENCE

PROPOSED 1.8m SECURITY FENCE

LYSNAR ROAD

SITE ENTRANCE
PROPOSED SITE ENTRANCE TO BE VIA ROUNDABOUT CONSENTED IN STAGE 8, AND DETAILS WILL BE PROVIDED AT EPA AND BUILDING CONSENT STAGE

STAGE 8

PROPOSED LAND CONTACT INFILTRATION DEVICE
REFER TO DRAWING P24-189-3200-DR-WWTP FOR DETAILS

PROPOSED WASTEWATER TAKE-OFF MANHOLE. TO BE DETAILED AT BUILDING CONSENT STAGE

2m HIGH TOPSOIL BUND
REFER TO LANDSCAPING PLANTING PLANS FOR DETAILS

PROPOSED STORMWATER DRY BASIN
REFER TO DRAWING
P24-189-3300-DR-WWTP FOR DETAILS

LEGEND:

- STAGE 8 BOUNDARY
- EXISTING BOUNDARY
- INDICATIVE WATERCOURSE (SUBJECT TO ECOLOGY ASSESSMENT)
- WATERLOO STREAM
- 20.0m OFFSET FROM WATERCOURSE
- 50.0m OFFSET FROM WATERCOURSE
- EXISTING WASTEWATER TRANSMISSION LINE
- ACCESSWAY EDGE LINE
- PROPOSED CONCRETE SURFACE
- PROPOSED BUILDING PLATFORM
- PROPOSED STORMWATER NETWORK
- PROPOSED WASTEWATER PIPE DISCHARING TO LAND CONTACT INFILTRATION DEVICE
- PROPOSED WASTEWATER RISING MAIN FROM TAKE-OFF MANHOLE
- PROPOSED WASTEWAER PIPE DISCHARGING BACK TO EXISTING TRANSMISSION LINE
- PROPOSED GREEN AREA
- PROPOSED MAINTENANCE TRACK
- PROPOSED EARTHWORKS EXTENT
- PROPOSED WORK EXTENT
- EXISTING CONTOUR (1.0m INTERVAL)
- PROPOSED CONTOUR (0.2m INTERVALS)
- SITE SECURITY FENCE (1.8m HIGH) AND GATES

SCALEBAR (m) 0 8 16 40
SCALE | 1:800 @A3 | 1:400 @A1|

REVISION DETAILS		INT	DATE	SURVEYED	WOODS
1	ISSUED FOR CONSENT	YC	FEB 2025	DESIGNED	YC
				DRAWN	YC
				CHECKED	TR
				APPROVED	TR

BUILDING B, LEVEL 1
8 NUGENT ST, GRAFTON,
AUCKLAND 1023
+64 9 308 9229
WOODS.CO.NZ

MILLDALE
Connecting Lifestyles

MILLDALE WASTEWATER TREATMENT PLANT

OVERALL LAYOUT PLAN

N

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:800 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P24-189-2000-RD-WWTP	

Plot Date: 4:06:07 pm,24 February 2025, YANGC

File: C:\12DSYNERGY\DATA\WP-PEN-APP-01\P24-189 - MILLDALE TREATMENT PLANT_21668\02 DRAWINGS\01 ENG\P24-189-2000-RD-WWTP-OVERALL LAYOUT PLAN.DWG

Appendix B. Hazardous substances inventory

Hazardous substances proposed to be stored and used on site

					Flammable liquids Class 3	Toxic Class 6		Corrosive Class 8		Eco-toxic Class 9[2]					
					3.1D	6.1C and 6.3-6.9	6.1C and 6.3-6.9 within 50m of a more sensitive zone[1]	8.1, 8.2A and 8.3	8.2B and 8.2C	9.1B, 9.2B, 9.3B and 9.4B	9.1B, 9.2B, 9.3B and 9.4B within 30m of watercourse[1]	9.1C, 9.2C, 9.3C and 9.4C	9.1C, 9.2C, 9.3C and 9.4C within 30m of watercourse[1]	High BOD5 (>10,000 mg/l)[3]	High BOD5 (>10,000 mg/l) within 30m of watercourse[1,2]
Auckland Unitary Plan - Permitted Activity Criteria (Future Urban Zone)					< 1t	< 0.3t	< 6t	< 0.05t	< 0.3t	< 10t	< 3t	<30t	< 10t	< 40t	< 20t
Auckland Unitary Plan - Discretionary Activity Criteria (Future Urban Zone)					≥ 1t	≥ 0.3t	6t to <12t	≥ 0.05t	≥ 0.3t	≥ 10t	≥ 3t	≥ 30t	≥ 10t	≥ 40t	≥ 20t
Activity Reference (Table E31.4.3) - AUP. E31 Hazardous Substances					A91	A101	A37	A102	A103	A106	A107	A108	A109	A110	A111
Substance Name	**Quantity (tonnes unless specified)[3]**	**Quantity (litres)**	**Specific gravity[4]**	**Hazard Classifications (HSNO)[5]**	Flammable liquids Class 3	Toxic Class 6		Corrosive Class 8		Eco-toxic Class 9					
Acetic acid, >30-50% aqueous solution	10.5	10,000	1.05	6.1D 6.9B 8.1A 8.2C 8.3A 9.3C [6]	-	10.5	10.5	10.5	10.5	-	-	10.5	10.5	-	-
Aluminium sulphate, >25% in a non hazardous diluent	2.7	2,000	1.33	6.3A 6.4A 8.1A 9.1B [7]	-	2.7	2.7	2.7	-	2.7	2.7	-	-	2.7	2.7
Citric acid, >10 - 50% in a non hazardous diluent	2.5	2,000	1.25	6.3B 8.3A [7]	-	2.5	2.5	2.5	-	-	-	-	-	-	-
Diesel fuel (automotive gas oil and marine diesel fuel)	0.4	500	0.83	3.1D 6.1E 6.7B 9.1B [6]	0.4	0.4	0.4	-	-	0.4	0.4	-	-	0.4	0.4
Sodium hydroxide, >5% aqueous solution	14	10,000	1.4	6.1D 8.1A 8.2B 8.3A [6]	-	-	-	14	14	-	-	-	-	-	-
Sodium hypochlorite, >5 - 25% in a non hazardous diluent	2.1	2,000	1.07	6.3A 8.3A 9.1B [7]	-	2.1	2.1	2.1	-	2.1	2.1	-	-	2.1	2.1
				Site Total (tonnes unless otherwise stated)	0.4	18.2	18.2	31.8	24.50	5.2	5.2	10.5	10.5	5.2	5.2
				Activity Status (Permitted Activity / Discretionary)	PA	D	RD	D	D	PA	D	PA	D	PA	PA

Notes:

[1] Assumes hazardous substances are located within the stated separation distance.

[2] Conservative approach taken and assumed that all class 9.1A-C sbstances have a high BOD. Wastewater not included as raw waste water has a BOD_5 of 250-350mg/l.

[3] Specific gravity sourced from SDS.

[4] Where specific gravity is noted as a range in the SDS, the top value of the range has been used (conservative approach).

[5] Conversion where required from GHS Classification to HSNO Classification using "HSNO:GHS 7 Correlation Tables" https://www.epa.govt.nz/assets/Uploads/Documents/Hazardous-Substances/GHS2/HSNO-GHS7_Correlation_Table.pdf

[6] Hazard Classifications sourced from individual HSR approval for the substance and converted from GHS to HSNO classification where necessary.

[7] Hazard classifications sourced from SDS and converted from GHS to HSNO classification where necessary.

Appendix C. Proposed conditions of consent

The following conditions of consent are proposed in relation to hazardous substance and ITA matters:

1) The consent holder shall provide copies of Location and Stationary Container Compliance certificates, issued by an authorised Compliance Certifier, to the Council prior to the Wastewater Treatment Plant becoming operational.

2) The consent holder shall prepare an Environmental Management Plan which to be provided for Council approval as part of the building consent application process for the Wastewater Treatment Plant (or sooner if available).

   Advice note:
   The purpose of the Environmental Management Plan is to ensure the risks from the site are managed appropriately.

3) The Environmental Management Plan must include, but not be limited to:

   a) identification of the specific activities conducted on the site;

   b) identification of potential contaminants associated with these activities, including a Hazardous Substance Inventory and associated Material Safety Data Sheets;

   c) methods used to contain identified contaminants and prevent them contacting stormwater runoff as far as practicable, and methods to manage environmental risks from site activities;

   d) a Spill Response Plan (which includes the provision that all spills over 20 litres, or any spill of environmentally hazardous substances that has entered the stormwater system, a waterbody or has contacted unsealed ground, must be reported immediately to the Auckland Council's 24-Hour Pollution Hotline (09-377-3107));

   e) accurate site drainage plan(s) showing the location of all site catchpits, containment systems, treatment devices and the discharge point(s) of the site stormwater system;

   f) an appropriate auditing programme to ensure site performance with all components of the Environmental Management Plan;

   g) methods for providing and recording staff training.

   h) an Operation and Maintenance Plan.

4) The site must be operated and managed in accordance with the Environmental Management Plan for the duration of the consented activity.

5) The Environmental Management Plan must be reviewed and updated after 12 months from the date of commissioning to the Wastewater Treatment Plant, to ensure all components of the Environmental Management Plan are still relevant.

6) The Environmental Management Plan must be kept on site and accessible at all times.

7) The Hazardous Substance Inventory, associated Material Safety Data Sheets, and Spill Response Plan must be kept up to date and maintained onsite at all times.

8) Suitable spill kits must be made available onsite at all times for the duration of the consented activity.

Appendix D. Hazard identification and risk assessment

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HAZARDOUS SUBSTANCES: HAZARD AND RISK ANALYSIS

Date:	January 2025	**Project Director:**	Jon Williamson
Project No.	WWLA1244	**Project Manager:**	Shane Moore
Project Name:	Milldale Subdivision - Wastewater Treatment Plant (WWTP)		
Client:	Fulton Hogan Land Development Limited		

The document presents a qualitative assessment of the potential risk of offsite effects associated with the storage and handling of hazardous substances at the proposed WWTP. This assessment has been undertaken in general accordance with the approach set out in WorkSafe's Good Practice Guidelines[1]. As the final form and layout of the WWTP is subject to detailed design this analysis should be considered preliminary and be updated once final design information is available.

The key elements of this assessment are:

- It is principally limited to an assessment of offsite effects. It is assumed that onsite effects, e.g. exposure to site workers, will be appropriately controlled in accordance with health and safety regulations and associated legislation[2].
- Hazard identification – this summarises the properties of the substances and identifies key failure modes or pathways by which hazardous substances could be released and may result in potential effects on offsite human or environmental receptors.
- A qualitative risk assessment - the risk or harm that a particular event presents is a function of the likelihood of the event occurring and the consequence (or severity) of the event. The risk assessment matrix set out below has been applied to qualitatively evaluate the level of risk with and without control measures in place.

In summary, no hazards have been identified that cannot be adequately mitigated through the implementation of industry standard control measures.

The following colour coding is used throughout this assessment:

- Green shading indicates low level of hazard, risk or effect.
- Orange shading indicates moderate level of hazard, risk or effect.
- Red shading indicates high level of hazard, risk or effect.

Risk Assessment Matrix

Consider the severity of injury/illness	Consider the likelihood of a hazardous event occurring: Very unlikely to happen	Unlikely to happen	Possibly could happen	Likely to happen	Very likely to happen
Catastrophic (e.g fatal)	Moderate	Moderate	High	Critical	Critical
Major (e.g Permanent Disability)	Low	Moderate	Moderate	High	Critical
Moderate (e.g Hospitalisation/Short or Long Term Disability)	Low	Moderate	Moderate	Moderate	High
Minor (e.g First Aid)	Very Low	Low	Moderate	Moderate	Moderate
Superficial (e.g No Treatment Required)	Very Low	Very Low	Low	Low	Moderate

[1] WorkSafe New Zealand, 2016. Major Hazard Facilities: Safety Assessment. Good Practice Guidelines. July 2016.
[2] For example: Health and Safety at Work (Hazardous Substances) Regulations 2017.

WWLA

HAZARD IDENTIFICATION

Substance	Quantity (litres)	Hazard level[3]	Potential failure (release) modes	Exposure pathways	Adopted hazard rating (and rationale)
Acetic acid (>30-50%) aqueous solution	10,000	Health	• Spill during filling of tank • Tank leak or rupture during use • Fire	• Dermal contact, inhalation or ingestion of substance. Flammable	Low – as hazard is limited to direct exposure of workers on site
		Environment		• Substance entering waterways, soil or groundwater	Low – as naturally occurring and rapidly biodegrades so effects will be short-term only
Aluminium sulphate (>25%) in a non-hazardous diluent	2,000	Health	• Spill during delivery or removal of IBCs • Leak or rupture of IBCs during use	• Dermal contact, inhalation or ingestion of substance	Low – as principally limited to direct exposure of workers on site although aluminium does have some long-terms effects
		Environment		• Substance entering waterways, soil or groundwater	Moderate – due to persistence in environment
Citric acid (>10 - 50%) in a non-hazardous diluent	2,000	Health	• Spill during delivery or removal of IBCs • Leak or rupture of IBCs	• Dermal contact or ingestion of substance	Low – as hazard is limited to direct exposure of workers on site
		Environment		• Substance entering waterways	Low – naturally occurring and rapidly biodegrades so effects will be short-term only
Diesel fuel	500	Health	• Spill during filling of tank • Tank leak or rupture during use • Fire	• Dermal contact or ingestion of substance. Flammable	Moderate – due to potential offsite deposition by fire
		Environment		• Substance entering waterways, soil or groundwater	Moderate - due to persistence in environment
Sodium hydroxide (>5%) aqueous solution	10,000	Health	• Spill during filling of tanks • Tank leak or rupture during use	• Dermal contact, inhalation or ingestion of substance	Low – as hazard is limited to direct exposure of workers on site
		Environment		• Substance entering waterways	Low – rapidly neutralised so effects will be short-term only
Sodium hypochlorite (>5 - 25%) in a non-hazardous diluent	2,000	Health	• Spill during delivery or removal of IBCs • Leak or rupture of IBCs	• Dermal contact, inhalation or ingestion of substance	Low – as hazard is limited to direct exposure of workers on site
		Environment		• Substance entering waterways	Moderate - very toxic to aquatic organisms but as the substance is extremely reactive effects are short lived

[3] Ministry for the Environment, 2002. Land Use Planning Guide for Hazardous Facilities. A resource for local authorities and hazardous facility operators. A report prepared by the Hazardous Facilities Screening Procedure Review Group in conjunction with the Ministry for the Environment.

RISK ANALYSIS

Hazard	Potential harm	Risk assessment without controls[4]			Mitigation measures / hazard controls	Residual risk with controls		
		L	S	R		L	S	R
Spill during delivery of bulk liquids (e.g. hose failed, tank overfilled etc.)	Health effects due to dermal contact with, inhalation or ingestion of substance	P	M	H	• The WWTP will be operated in accordance with a site-specific Environmental Management Plan (EMP) which will include training, monitoring and maintenance requirements, unloading and safe handling procedures, spill response plan, etc. • A containment system will be provided for the bulk chemical delivery area. • Where possible unloading of bulk liquids will be undertaken using closed systems designed to minimise the risk of material loss. Tanks will also be fitted with overpressure vents, liquid level indicators and high-level alarms. • Stormwater generated in in areas where hazardous substances are stored or used will be collected and diverted for treatment through the WWTP process. • Hazardous substances will be located centrally within the WWTP, with greatest setback from the site boundaries, where possible.	VU	O	L
	Environment effects due to large volumes of substance entering waterways, soil or groundwater	P	C	C		VU	M	L
Leak from or rupture of bulk tank during use	Health effects due to dermal contact with, inhalation or ingestion of substance	U	M	M	• The EMP, stormwater and location controls set out above will be implemented in relation to operation of the bulk tanks. In addition: • Bulk tanks will either be self-bunded (double skinned) or within bunded areas with bunds constructed of concrete and lined with chemically resistant coating where necessary.	VU	O	L
	Environment effects due to large volumes of substance entering waterways, soil or groundwater	U	C	M		VU	M	L
Spill during unloading of packaged liquids (e.g. IBC dropped and punctured or ruptured etc.)	Health effects due to dermal contact with, inhalation or ingestion of substance	P	O	M	• Refer to the controls described in relation to delivery of bulk liquids. • IBCs will only be moved by trained staff, using appropriate equipment, and within designated areas.	VU	I	VL
	Environment effects due to substance entering waterways, soil or groundwater	P	O	M		VU	O	L

[4] L = Likelihood, S = Severity, R = Risk
Likelihood: VU = Very unlikely, U = Unlikely, P = Possible, L = Likely, VL = Very likely
Severity: C = Catastrophic, M = Major, O = Moderate, I = Minor, S = Superficial
Risk ranking: C = Critical, H = High, M = Moderate, L = Low, VL = Very low

Hazard	Potential harm	Risk assessment without controls[4]			Mitigation measures / hazard controls	Residual risk with controls		
		L	S	R		L	S	R
Leak from or rupture of IBC during use	Health effects due to dermal contact with, inhalation or ingestion of substance	U	M	M	• IBCs, if stored outside will be stored in covered bunded areas and if inside will either be bunded or on drip trays that drain to an area where spills can be recovered. • Stormwater generated in in areas where hazardous substances are stored or used will be collected and diverted for treatment through the WWTP process. • Where possible the IBCs will be located centrally within the WWTP, with greatest setback from the site boundaries.	VU	O	L
	Environment effects due to large volumes of substance entering waterways, soil or groundwater	U	M	M		VU	O	L
Fire associated with diesel generator or acetic acid (at high concentrations)	Health effects due to exposure to smoke	P	M	M	• EMP will include procedures for response to fire, including controls such as fire extinguishers. • Substances will be appropriately separated / segregated. • Refilling will be undertaken by trained delivery contractor.	VU	O	L