PART 16
HAZARDOUS SUBSTANCES

16.1 INTRODUCTION AND SIGNIFICANT RESOURCE MANAGEMENT ISSUES

16.1.1 It is recognised that the storage, use, disposal or transportation of hazardous substances is an accepted and essential part of many primary industrial and rural activities such as farming, forestry and horticulture. Hazardous substances are required to be managed to ensure that the districts industries are able to continue to produce high quality output without compromising the district's sensitive environments including our lakes, rivers, streams, wetlands and geothermal areas that are sensitive to contamination from hazardous substance spillage within their catchment.

16.1.2 Most industrial land use activities in the district are located within or in close proximity to the Lake Rotorua water catchment. In addition, agricultural activities can require the storage and use of substantial amounts of hazardous substances. Several of the lake catchments within the Rotorua district contain farming activities which if there was a spill or accidental release of hazardous substances would impact on sensitive lake and river systems. There are also a number of land use activities which use hazardous substances within some of the district's groundwater recharge areas, which are also used as potable water supplies. Some of these areas are also within a lake catchment.

16.1.3 The Hazardous Substances and New Organisms Act 1996 (HSNO) governs the management of hazardous substances. It sets minimum performance standards for all hazardous substances, regardless of where they are used, stored, transported or disposed of.

16.1.4 The Resource Management Act 1991 governs the management of hazardous facilities at a regional and district level. The Act is focused on site-specific controls on the use of land, and on managing risks to the local environment. It requires councils to take an effects-based approach to managing hazardous facilities. The threat of a fire, explosion or toxic gas release is the **hazard;** while the probability of this occurring and the consequences of such an incident is the **risk.** Risk can range from low to high levels of risk.

16.1.5 The two Acts work together. HSNO provides the framework for managing hazardous substances anywhere in New Zealand, and the Act, through the district plan provides additional controls for hazardous facilities at the particular site.

16.1.6 The Act gives the regional and district council's shared responsibilities and functions for managing hazardous facilities as well as dealing with contaminated sites.

16.1.7 Rotorua District Council has two relevant functions under Section 31 of the Act relating to hazardous substances and contaminated land. These are to control any actual or potential effects of the use, development, or protection of land for the purpose of:

- Preventing or mitigating any adverse effects of the storage, use, disposal or transportation of hazardous substances; and
- Preventing or mitigating any adverse effects of the development, subdivision or use of contaminated land.

16.1.8 The first function is addressed in this chapter. Preventing or mitigating adverse effects of development, subdivision or use of contaminated land is addressed in **Part 12 – Site Suitability and Subdivision**.

16.1.9 Section 30 of the Act assigns very similar functions to Regional Council's relating to hazardous substances and contaminated land. In addition to the above, regional council's have the added

functions of investigation of land for the purposes of identifying and monitoring contaminated land and also controlling discharges of hazardous substances into, water, onto land in circumstances which may result in contaminants entering water, or into air.

16.1.10 Under the *Water Services and Trade Waste Bylaw 2010,* Rotorua District Council also regulates discharges, including trade waste, hazardous substances, wastewater, geothermal fluids and stormwater into Rotorua District Council Wastewater Services. This is required to ensure conditions of discharge consents Council holds on behalf of the community are complied with. Compliance with Council's discharge consents ensures waterways and lake water quality is safeguarded. The bylaw is administered as an asset management function of Council and does not remove any requirement to comply with the District Plan in terms of this section or any Regional Council requirements.

16.1.12 The issues detailed below have shaped the hazardous substances policy framework . While many issues have required consideration, and the objectives and policies are comprehensive, most are related to achieving one of the following major outcomes:

- To clarify Council's role in managing the land use aspects of hazardous substances, and avoid duplication of the responsibilities of other agencies.
- To advise the community when resource consent will be required for the amount and type of substances to be stored on a site.
- To protect the lakes and waterbodies from spillages and prevent land from becoming contaminated by hazardous substances.
- To inform the community on how to manage spillage or leakages and identify ways to avoid these events.

16.1.13 **POTENTIAL FOR SHORT AND LONG-TERM DAMAGE TO THE ENVIRONMENT**

If not managed effectively hazardous substances have the potential to cause short or long-term damage to the environment and ecosystems. This can be caused by the accidental, unintentional or uncontrolled release of hazardous substances resulting in contamination of water, soil and air, or risk of fire and explosive events. There will be some locations such as next to waterways, above aquifers or closed to environmentally sensitive areas such as Rotorua's lakes, rivers, streams and wetlands where risks will be unacceptable. Indirect effects also need to be managed to avoid the accumulation of a substances or sediment within in sensitive environments.

16.1.14 **POTENTIAL FOR DAMAGE TO HUMAN HEALTH AND PROPERTY CAUSED BY ACCIDENTAL, UNINTENTIONAL OR UNCONTROLLED RELEASE OF HAZARDOUS SUBSTANCES**

Hazardous substances need to be responsibly managed in terms of how they are handled, stored and disposed of which extends to planning for sites and facilities. Of importance is the awareness of environmental risk associated with the storage, use, disposal or transportation of hazardous substances, and how best to mitigate or reduce these risks. If not managed effectively hazardous substances have the potential to cause damage to human health and property. This can occur through the accumulation of persistent substances in the bodies of humans and animals, resulting in chronic and or long-term dame to health.

16.1.15 **AVOIDANCE OF SITE CONTAMINATION BY HAZARDOUS SUBSTANCES**

Council is responsible for ensuring the appropriate location for disposal facilities, and ensuring that activities using hazardous substances have appropriate options for disposal identified.

16.1.16 The Hazardous Facility Screening Procedure can be used to assess the likely effects of hazardous substances at all stages of a process including raw materials, production and waste.

16.1.17 In general, hazardous facilities are permitted in a zone where:

1. the Performance Standards for hazardous substances can effectively control any potential adverse effects; and
2. where the potential level of risk is low; and
3. the health and safety of the community and the environment will not be adversely affected. In determining this, the objectives and policies of the particular Zone concerned and the relevant objectives and policies of zones adjoining that Zone, along with the facility's characteristics and location on site, will be taken into account.

16.1.18 All applications for new facilities for hazardous substances will be assessed by the Hazardous Facility Screening Procedure regardless of the size, substance(s) or processes proposed **except where explicitly exempted**. Only those activities which exceed specific levels of risk beyond their site boundary as determined in this Part of the District Plan, are to be subjected to more detailed scrutiny or assessment and additional controls may be applied. The further scrutiny or assessment shall take account of both the probability and the effects of potential accidents involving hazardous substances and the proposed measures to mitigate and manage such risks. The assessment of any application for a hazardous facility will focus on risk mitigation measures and emergency plans. Management and operational practices of the facility will also be assessed to identify where risks may be avoided. The assessment to determine whether to grant a resource consent or otherwise will considered whether any off-site risks presented by a hazardous facility are adequately managed.

16.1.19 There are a number of activities involving hazardous substances for which assessment through the Hazardous Facility Screening Procedure is not appropriate and for which Rule **16.3.1** does not apply. The HFSP is not appropriate because the potential effects they generate are below the trigger levels established in the Activity Status Matrix, or they are managed and controlled by other legislation,

16.1.20 A number of other activities are well managed under voluntary industry Codes of Practice and compliance with such codes has been demonstrated to avoid, remedy or mitigate risks related to the storage and use of hazardous substances on the environment and on the health and safety of the community. Such activities, are identified a Controlled Activities in table **16.3.3.**

16.1.21 There are also a number of identified activities that are of a temporary or short term duration at any one location. The current management practices of these activities present a short term risk on the environment and health and safety of the community. Such activities are to be Permitted Activities in this Part. The table in **16.3.3** states whether activities are required to comply with the Hazardous Substances Performance Standards or otherwise.

EXISTING FACILITIES

16.1.23 Hazardous facilities existing as at March 2002 will not be subject to the *Hazardous Facility Screening Procedure* unless they expand or alter their activities (refer also to rule **16.3.4**).

DRAFT POLICY FRAMEWORK – FEEDBACK SOUGHT

1. **The policy framework is essentially unchanged from the existing district plan. This topic is highly specialised and applies to particular activities. The chapter has a two-pronged focus, protection of the environment from hazardous substances misuse, and protection of the health and safety of the community.**
2. **Does the policy framework suitably address all relevant issues relating to hazardous substances?**
3. **Is there enough detail or too much detail to provide a clear policy direction?**
4. **The RMA 1991 overlaps with a number of other legislative documents in the management of hazardous substances. Does the policy framework fulfil its requirements under the RMA 1991 without being overly repetitious of other relevant legislation?**
5. **Are there hazardous substances and actual or potential effects that should have more or less prominence in the framework?**

16.2 OBJECTIVES AND POLICIES

Protection of the environment from short and long-term damage	
Objective 16.2.1 Rotorua's lakes, rivers and the margins, and other sensitive environments protected from unacceptable adverse effects and risks from facilities and activities involving the use and/or storage, disposal and transport of hazardous substances.	**Policy 16.2.1.1** Identify through the use of the Hazardous Facilities Screening Procedure, those facilities which pose a risk to the natural environment or to public health and safety. **Policy 16.2.1.2** Ensure hazardous facilities and activities involving the use, storage and/or disposal of hazardous substances are managed and controlled in such a way that avoids, remedies or mitigates adverse effects and unacceptable risks to the environment, including: ▪ contamination of water, soil and air; ▪ short and long-term damage to ecosystems; ▪ damage through fire and explosion events; and ▪ the districts' lakes and waterbodies. **Policy 16.2.1.3** Promoting a clean production ethic and best practice methods appropriate to the environment of the district for all hazardous facilities. **Policy 16.2.1.4** Ensure adverse cumulative effects from hazardous facilities and activities involving the use, storage, disposal and transportation of hazardous substances on the environment and on the health and safety of the community are avoided, remedied or mitigated. **Policy 16.2.1.5** Avoid locating hazardous facilities and substances where levels of risk are incompatible with those of surrounding land use activities.
Protection of human health and property caused by hazardous substances	
Objective 16.2.2 Protected the Rotorua community and its assets from unacceptable risks from hazardous facilities and substances.	**Policy 16.2.2.1** Ensure hazardous facilities and activities involving the use and/or storage of hazardous substances are managed in such a way that avoids, remedies or mitigates adverse effects and unacceptable risks to human health and property, including: ▪ damage through fire and explosion events ▪ accumulation of persistent substances in the bodies of humans and animals, resulting in chronic and/or long-term damage to their health ▪ acute damage to human health through exposure to substances affecting skin, mucous membranes, respiratory and digestive systems

Avoid future contamination by hazardous substances	
Objective 16.2.3 Minimise the adverse effects of site contamination and prevent future site contamination.	**Policy 16.2.3.1** Avoid the potential for further contamination of sites by controlling hazardous substance storage, use, disposal or transportation. **Policy 16.2.3.2** Minimise and control the adverse effects of discharges into or onto land **Policy 16.2.3.3** Require where appropriate the remediation of land as prerequisite to its redevelopment.

16.3 RULES FOR ACTIVITIES INVOLVING THE USE, STORAGE, DISPOSAL OR TRANSPORATION OF HAZARDOUS SUBSTANCES IN ALL ZONES

The following Rules specify the status for activities involving the use, storage, disposal or transportation of hazardous substances in all zones within the district. For the avoidance of doubt Rules below apply in addition to other zone–specific rules. The users of this District Plan are advised that, notwithstanding any provision in this Plan, no activity shall contravene any Rule in any relevant regional plan, or proposed regional plan. District Plan rules do not negate the need for compliance with all other relevant legislation or bylaws.

In Table **16.3.3**:

P = Permitted Activity
C = Controlled Activity
RD = Restricted Discretionary Activity
D = Discretionary Activity
NC = Non-Complying Activity
Pro = Prohibited Activity
NA = Not Applicable

Meanings for technical terms of relevance to this Part of the Plan can be found in section 16.13. In addition, meanings for other terms can be found in Part 1 Definitions.

16.3.1 HAZARDOUS FACILITY SCREENING PROCEDURE

In March 2002, Council adopted the *Hazardous Facility Screening Procedure or HFSP (Land Use Planning Guide for Hazardous Substances, Ministry for the Environment September 1999)* to assess all new land use activities involving facilities storing, using or disposing of hazardous substances. Council requires applicants for land use activities involving facilities using or storing hazardous substances, to identify any threat to the health and safety of the community and to the environment. The Hazardous Facility Screening Procedure will determine the zone-related activity status and the degree of scrutiny that any application will be subjected to. Detailed information about the Hazardous Facility Screening Procedure is in part **16.11 and 16.12.**

16.3.1.1 The HFSP manages hazardous facilities by categorises the effects of substances into three groups as follows:

1. Fire/Explosion Effect Type: - concerned with damage to property, the built environment and safety of people;
2. Human Health Effect Type: - concerned with the wellbeing, health and safety of people; and
3. Ecosystem Effect Type: - concerned with damage to ecosystems and natural resources and systems.

16.3.2 DETERMINATION OF ACTIVITY STATUS UNDER THE HAZARDOUS SCREENING PROCEDURE

All new applications for hazardous facilities shall be assessed in accordance with the *Hazardous Facility Screening Procedure* in **16.11** to establish its Effects Ratio, unless explicitly stated as being excluded from HFSP assessment in Table 16.3.3 . The *Effects Ratio Trigger* in Table (**R16.3.2**) lists the different Effects Ratio trigger levels for each Zone and sets the effects ratio over which requires a Discretionary Activity resource consent. If the effects ratio is below that stated as Discretionary Activity the activity is a Permitted Activity.

16.3.3 EFFECTS RATIO TRIGGERS FOR PERMITTED AND DISCRETIONARY ACTIVITIES (refer to 16.11 for process to determine activity status

Table 16.3.2

ACTIVITY STATUS MATRIX FOR ZONES		
ZONE	**PERMITTED ACTIVITY [1]**	**DISCRETIONARY ACTIVITY**
Industrial 2 Innovation and Enterprise 2	$\leq 1^2$	>1
Industrial 1 Rural 1, Innovation and Enterprise 1 Airport 1	$\leq 0.75^2$	> 0.75
Tourism and Events 1	≤ 0.5	> 0.5
Commercial 1, 2 and 5 Infrastructure and Transport 1	≤ 0.2	> 0.2
Commercial 3 and 4 City Centre 2, 3, 5 and 7 Rural 2 and 3 Reserve and Recreation 1 and 2	≤ 0.1	> 0.1

ZONE	PERMITTED ACTIVITY [1]	DISCRETIONARY ACTIVITY
City Centre 1, 4 and 6	≤ 0.05	> 0.05
Residential 1,2, 3, 4 and 5 Reserve and recreation 3	≤ 0.02	> 0.02

Table 16.3.3 Activities exempt from the hazardous facility screening procedure

Activities	Status	HSFP assessment required	Required to Comply with performance standards
Permitted activities			
Transportation of hazardous substances unless otherwise stated.	P	No	No
Storage or use of hazardous consumer products for domestic purposes.	P	No	No
Fuel in motor vehicles, boats and small engines such as weedeaters, lawnmowers, chainsaws etc.	P	No	No
Retail outlets for the sale of hazardous consumer products for domestic purposes (such as supermarkets, hardware shops, pharmacies).	P	No	No
Storage and/or use of LPG in quantities not exceeding those listed in Table 2.1 of AS/NZS 1696:2008.	P	No	No
Pole mounted transformers and street transformers for the transmission of electric power.	P	No	No
Residential Transformers holding under 500 litres of transformer oil.	P	No	No
Up to 60kg of UN Class 1 blasting explosives used as one off operations, as controlled under HSNO, associated regulations and the Health and Safety in Employment Act 1992.	P	No	No
Facilities using genetically modified or new organisms.	P	No	No
Gas and Oil Pipelines.	P	No	No
Trade waste sewer facilities such as grease traps and interceptors.	P	No	No
Use, storage or transportation of hazardous substances by any temporary military training activity	P	No	Yes
Hazardous activities not involving hazardous substances.	P	No	No
Facilities presenting a dust explosion risk of non-hazardous substances.	P	No	No
On farm milk or factory storage provided any spillage is prevented from entering a watercourse or waterbody, or from seeping into groundwater.	P	No	Yes
Agrichemicals			
Storage, handling and use of agrichemicals on-farm, in-forest or on-orchard (NZ Standard Code of Practice for the Management of Agrichemical NZS 8409: 2004 'Growsafe'.)	C	No	Yes
Hazardous substances associated with bulk earthworks and road construction activities			
The storage or use of hazardous substances in conjunction with bulk earthworks and road construction activities (eg road construction and improvement activities) complying with the Performance Standards under Rule R16.5 of this Part.	P	No	Yes
The storage or use of hazardous substances in conjunction with bulk earthworks and road construction activities (e.g. road construction and improvement activities) not complying with the Performance Standards under Rule R16.5 of this Part.	RD	Yes	-

Activities	Status	HSFP assessment required	Required to Comply with performance standards
Storage and or retailing of CNG, LPG. Petroleum and Diesel Facilities			
Storage and/or dispensing facilities for CNG outlets providing CNG storage up to 1,000m³ storage in cascades (AS/NZS 1696:2008 Storage and Handling of LP Gas)	C	No	No
Storage and/or dispensing facilities for LPG outlets providing LPG storage up to 12,000 litre w/c in a single above ground storage vessel or 48,750 litre w/c in an underground storage vessel (AS/NZS 1696:2008 Storage and Handling of LP Gas)	C	No	No
Storage of up to 12,000 litres w/c of LPG for use in "industrial fuel burning equipment." (AS/NZS 1696:2008 Storage and Handling of LP Gas)	C	No	No
Storage and/or dispensing (facilities) for petroleum products at an outlet with up to 160,000 litres in underground storage with 50,000 litres maximum capacity for any individual tank. (Code of Practice for the Design, Installation and Operation of Underground Petroleum Systems, published by the Department of Labour – OSH and supplements)	C	No	No
Storage and /or dispensing (facilities) of diesel fuel outlets in any above ground or underground tank with 50,000 litres maximum capacity. (Code of Practice for the Design, Installation and Operation of Underground Petroleum Systems, published by the Department of Labour – OSH, or Code of Practice for Storage Tanks and Ancillary Equipment, published by the Department of Labour – OSH and supplements)	C	No	No
Storage and/or dispensing facilities for Jet A1 fuel and/or Av Gas up to 200,000 litres in above ground storage tanks with 50,000 litres maximum capacity for any individual tank in the Airport Zone. (Above Ground Bulk Tank Containment Systems - Ministry for the Environment 1995)	C	No	No
Storage and/or dispensing facilities for Jet A1 fuel and/or Av Gas up to 140,000 litres in underground storage tanks with 50,000 litres maximum capacity for any individual tank in the Airport Zone. (Above Ground Bulk Tank Containment Systems - Ministry for the Environment)	C	No	No
Any storage and or retailing of CNG, LPG. Petroleum and Diesel Facilities not in compliance with all relevant voluntary industry Codes of Practice.	Status determined by HFSP	Yes	Yes
Hazardous substances associated with teaching, research, and laboratories			
Storage (not including bulk hazardous substance storage facilities), handling, use, transport and disposal of hazardous substances by teaching, research and hospital laboratories. ▪ AS 2982-2010 - Laboratory Construction ▪ AS 2243.1-2005 - Safety in Laboratories- Planning and operational aspects ▪ AS 2243.2-2006 - Safety in Laboratories Part 2: Chemical aspects ▪ AS 2243.3-2002 - Safety in Laboratories Part 3: Microbiology ▪ AS 2243.5-2004 - Safety in Laboratories Part 5: Non-Ionising Radiation ▪ AS 2243.6-1990 - Safety in Laboratories Part 6: Mechanical Aspects	C	No	Yes

Activities	Status	HSFP assessment required	Required to Comply with performance standards
AS 2243.9 2009 - Safety in Laboratories Part 9: Recirculating Fume Cabinets			
Storage (not including bulk hazardous substance storage facilities), handling, use, transport and disposal of hazardous substances by teaching, research and hospital laboratories **not in compliance with all relevant voluntary industry Codes of Practice.**	Status determined by HFSP	Yes	Yes
Radioactive materials			
Any use or storage of radioactive material with an activity below that specified as an exempt activity in the Radiation Protection Regulations 1982.	P	No	No
Radioactive material in smoke detectors is exempt from the requirements of these activities.	P	No	No
Any use or storage of radioactive material with an activity in excess of that specified as an exempt activity in the Radiation Protection Regulations 1982 and less than 1,000 terabecqueral.	D	No	No
Any facility using radioactive material with an activity in excess of 1,000 terabecqueral (1×10^{16}).	Pro	No	No

18.3.4 EXISTING HAZARDOUS FACILITIES

Existing hazardous facilities are not subject to the HFSP where Section 10 or 10A of the *Resource Management Act 1991* apply. In this regard it is noted that Council adopted the use of the HFSP into the District Plan in 9 Dec 2005. As a guide to determining whether any existing hazardous facility which substantially alters its operation has effects that are no longer the same or similar in character, intensity and scale to those that existed previously, the following matters will be considered:

1. Any increase in the effects ratio from one activity to a higher one in **R16.3.2**; and
2. Whether the activity complies with all Hazardous Substances Performance Standards in **R16.5**

Reference should also be made to the following parts of the plan for other matters that may determine the classification of an activity within the relevant zone the activity is proposed to be located in:

R2.3 Issues of Importance to Maori
R3.3 Issues of National Importance
R4.3 Residential
R5.3 City Centre and Lakefront
R6.3 Commercial
R7.3 Industrial
R8.3 Innovation and Enterprise
R9.3 Airport
R10.3 Rural
R11.3 Reserves and Recreation
R12.3 Infrastructure and Transport
R13.3 Site suitability and Subdivision
R14.3 Natural Hazards

16.4 ACTIVITY CLASSIFICATIONS FOR ALL ZONES

16.4.1 PERMITTED ACTIVITIES

1. Where activities in **16.3.3** are stated as Permitted Activities and stated as not required to comply with Performance Standards no resource consent is required.

2. Where activities in **16.3.3** are stated as Permitted Activities and stated as required to comply with Performance Standards, and where they have been demonstrated to comply in all respects with the Hazardous Substances Performance Standards in **16.5**, no resource consent is required. The Performance Standards stated in **16.5** apply to all use, storage, disposal or transportation unless otherwise stated in **16.3.3**.

3. Where activities are required to be assessed in accordance with the Hazardous Facility Screening Procedure under rule R16.3.1 and have an effects ratio stated as a Permitted activity in table **16.3.2**, and where they have been demonstrated to comply in all respects with the Hazardous Substances Performance Standards in **16.5**, no resource consent is required.

16.4.2 CONTROLLED ACTIVITIES

Where activities in **16.3.3** are stated as Controlled Activities, they shall comply with the Hazardous Substances Performance Standards stated in **16.5**. The matters over which Council shall reserve its control are stated in Rule **16.6**. Council can not refuse a resource consent for a controlled activity but can grant the consent subject to conditions relating to those matters over which Council has reserved control.

16.4.3 RESTRICTED DISCRETIONARY

Where activities in **16.3.3** are stated as Restricted Discretionary Activities, the Hazardous Substances Performance Standards stated in **16.5** may be varied by means of a resource consent for a Restricted Discretionary Activity. The matters over which Council shall restrict its discretion are stated in Rule **16.7**.Council can chose to grant or refuse a resource consent for a Restricted Discretionary Activity. If Council grants a resource consent for a Restricted Discretionary Activity it can be granted subject to conditions relating to those matters over which Council has restricted the exercise of its discretion.

16.4.4 DISCRETIONARY ACTIVITIES

Where activities in **16.3.3** are stated as Discretionary Activities, or activities are required to be assessed in accordance with the Hazardous Facility Screening Procedure and have an effects ratio higher than the ratio stated as a Permitted activity in table **16.3.2**, the activity shall be assessed against those matters in Rule **16.8**. Council can chose to grant or refuse a resource consent for a discretionary activity. If Council grants a resource consent it can be granted subject to conditions.

16.4.5 NON-COMPLYING ACTIVITIES

There are no Non-complying activities in this Part.

16.5 HAZARDOUS SUBSTANCES PERFORMANCE STANDARDS

16.5.1 SITE DESIGN AND MANAGEMENT

The following Site Design and Management standards are in addition to, and not in substitution for, the Performance Standards of the relevant zone, and other legislation that deals with hazardous substances, including the Hazardous Substances and New Organisms Act 1996 and regulations, Medicines Act 1981, Health and Safety in Employment Act 1992, or any subsequent legislation and any conditions set by the National Radiation Laboratory.

16.5.1.1 **A**ny site or part(s) of a site dedicated to the manufacturing, mixing, packaging, above ground storage, loading, unloading, using or handling of hazardous substances shall be protected by a spill containment system.

The spill containment system shall include at least the following:

1. be constructed from impervious materials that are resistant to the hazardous substances involved; and
2. be able to contain 125% of the volume of all containers (e.g. drums, tanks) containing hazardous substances within the spill containment area, or if the containment area is covered then the volume will be 100%, or where drums or other containers are used, the spill containment system shall be able to contain the maximum volume of substances stored; and
3. be designed, constructed and managed so that any spill or release of any hazardous substance and any stormwater that may have entered and become contaminated in the spill containment system is:
    a. prevented from discharging into or onto land or groundwater, into any waterbody, or into any potable water supply unless permitted by a Regional Plan or a regional resource consent has been obtained; and
    b. prevented from entering the stormwater drainage system unless allowed by the Network Utility Operator , or by a Regional Plan or a regional resource consent has been obtained.

16.5.1.2 Other than the storage and dispensing of LPG carried out in accordance with AS/NZ 1696:2008, underground storage tanks shall be designed and constructed to contain any leakage. A leak detection system shall be integrated into the design of the tank and backed up with an effective monitoring programme.

All stormwater grates shall be clearly marked to ensure that hazardous substances are not inadvertently released into the stormwater system.

The part of the site where vehicles, equipment or containers (that are or may have become contaminated with hazardous substances) are washed, shall be designed and constructed so that any contaminated effluent from the wash-down area or washing facility cannot be discharged into the stormwater system, into a sewer, into or onto land, into groundwater or any waterbody, or to a potable water supply unless a resource consent, allowed by the Network Utility Operator.

16.5.1.3 Provided that the following shall apply in the specified instances:

1. the storage and dispensing of LPG carried out in accordance with AS/NZ 1696 : 2008;or
2. use of vehicles such as mobile trailer fuel tanks, asphalt trucks, bitumen spray trucks and bulk tanker trailers, where best management practices during the operation of these vehicles shall be employed, (covers 14.41.4).

16.5.2 WASTE MANAGEMENT

Any waste including trade wastes or waste containing hazardous substances shall be managed so they are not:

1. discharged on to land or into any stormwater drain or discharged into sewers serviced by the Rotorua Wastewater Treatment Plant unless authorised under Council's *Water Services and Trade Waste Bylaw 2010* or contrary to Part 16 (Infrastructure) of this District Plan; or
2. discharged into or onto land, groundwater, any water body, or potable water supply unless a resource consent from a Regional Council allows otherwise.

16.5.2.1 The storage of any waste or waste containing hazardous substances shall comply with **R16.5.1** of this Part of the District Plan at all times.

16.5.2.2 The storage of any waste containing hazardous substance shall be in a manner that prevents:

1. the exposure to ignition sources;
2. the corrosion or other alteration of the containers used for the storage of waste;
3. the unintentional release of the waste.

16.5.2.3 Wastes containing hazardous substances shall be disposed of within the Rotorua District only in facilities formally approved by the Rotorua District Council, unless covered by a resource consent issued by a Regional Council.

16.5.3 SIGNAGE

All hazardous facilities shall be sign posted to indicate the nature of the substance stored, used or otherwise handled. All signs required to comply with this provision will be exempt from the signage provisions within the zone/s the activity locates.

16.5.4 FIRE SAFETY

All hazardous facilities where flammable hazardous substances are either stored or used shall have adequate fire safety equipment in place.

16.5.5 EMERGENCY AND EVACUATION PLANS

All hazardous facilities shall have an emergency and evacuation plan in place which deals with possible on-site accidents involving hazardous substances.

16.6 CONTROLLED ACTIVITIES

16.6.1

1. Where activities in **16.3.3** are stated as Controlled Activities the matters over which Council shall reserve its control are stated in **Rule 16.6.**
2. Controlled Activities shall comply with the Performance Standards for Permitted Activities in the Zone unless otherwise provided for in the Rules of this Part.
3. For those activities stated as Controlled Activities in **16.3.3** specific additional criteria will also be applied. These criteria are set out in **16.6.5** to **16.6.8**

16.6.2 **MATTERS OVER WHICH CONTROL IS RESERVED FOR CONTROLLED ACTIVITIES**

1. The extent to which the application complies with the relevant standard and/or Code of Practice and any replacement of that standard or code (the current relevant standard or code is listed after each controlled activity in table 16.3.3.
2. Where applications for storage and/or dispensing facilities for CNG, LPG, petrol and diesel Hazardous substances used in teaching and the storage and use of on-farm in forest, or on orchard agrichemicals are made without reference to any of the above codes, an applicant shall satisfy the Council that matters addressed in the relevant codes are addressed in the application. The Council may impose conditions setting the requirements of compliance with an appropriate code of practice(s) as conditions of a consent; and
3. The extent to which the application complies with the relevant standards for Permitted Activities in the zone and Rule R16.5.
4. For land use of agrichemicals, compliance with (NZ Standard Code of Practice for the Management of Agrichemical NZS 8409: 2004 'Growsafe'.)

16.7 RESTRICTED DISCRETIONARY ACTIVITIES

16.7.1 Where activities in **16.3.3** are stated as Restricted Discretionary Activities the matters over which Council shall restrict discretion are stated in **Rule 16.8**

16.7.2 The criteria for assessing applications for Restricted Discretionary Activities and the imposition of conditions, if any, is restricted to the matters set out in **R16.8**.

16.8 DISCRETIONARY ACTIVITIES

16.8.1 Where activities in Table **16.3.3** are stated as Discretionary Activities, or are Discretionary Activities in accordance with Rule **16.3.2**, the activity shall be assessed against those matters in Rule 16.8. Council can choose to grant or refuse a consent for a discretionary activity. If Council grants a consent it can be granted subject to conditions.

16.8.2 Activities storing or using hazardous substances which under **R16.3.2** and **R16.3.3** do not meet the Permitted Activity standards or are specified as Discretionary Activities are those which may however be appropriate on some sites in the District. These activities can, however, have effects or pose risks which require particular assessment. Council may decline an application for such an activity or grant a resource consent subject to conditions that ensure that the activity does not pose an adverse risk on the environment or the health and safety of the Community, and that the relevant Objectives and Policies of this Part and the relevant Objectives and Policies of the Zone where the activity is proposed to be located and any adjoining Zones, are promoted.

16.8.3 An application for a resource consent for a Discretionary Activity may be considered, in cases where the exercise of the Council's discretion in respect of non-compliance with the Site Standards under **R16.5** is concerned, without the need to obtain the written approval of affected persons and need not be notified unless the Council considers that special circumstances exist in relation to such an application.

16.8.4 The criteria for assessing applications for Discretionary Activities are set out in **R16.8**.

16.8.5 Where a hazardous facility is proposed to be located within the 20 metre wide yard, the relevant objectives and policies of the adjoining zone will be taken into account in resource consent applications for Discretionary Activities to ensure that the objectives of the adjoining zone are promoted.

16.8.6 MATTERS COUNCIL WILL USE WHEN ASSESSING DISCRETIONARY ACTIVITIES

In considering whether to decline or grant a Discretionary Activity application (with or without conditions), all applications will be assessed in terms of the following matters:

Risk assessment

16.8.6.1 Whether the proposal is acceptable after a risk assessment has been carried out (i.e. the extent to which any risks associated with the proposal are able to be avoided, remedied or mitigated), as described in Section **R16.8.13** of this Part of the District Plan.

1. The level of risk associated with the environment in which the facility is proposed to be located (e.g. instability from geothermal activity) and the manner in which those risks have been accommodated.
2. Are there cumulative risks presented to the environment as a result of other neighbouring facilities.

Management practices

16.8.6.2
1. Whether proposed site management systems are appropriate. Consideration will be given to spill contingency plans, health and safety systems, emergency procedures, stormwater treatment and disposal procedures for hazardous wastes, fire safety, transportation, monitoring and maintenance procedures.
2. Whether monitoring and maintenance schedules are appropriate to identify systems failures in order that action can be taken to avoid, remedy or mitigate any adverse effects.

Alternatives

16.8.6.3 Whether there are reasonable alternatives to the proposal. A description of any possible alternative locations or methods for undertaking the activity shall be submitted, where it is likely that an activity will have significant adverse effects on the environment.

District Plan provisions

16.8.6.4 1. The extent to which the proposal complies with the objectives, policies and performance standards of:
   a. Part 16;
   b. The zone in which the facility is proposed to be located; and
   c. The adjoining zone to the facility (where this is located within 20 metres of the adjoining zone).

2. Consent to an application may be granted with conditions attached, to address the following matters:
   a. Hazard and exposure pathways; and
   b. The sensitivity of the surrounding human, natural and physical environment; and
   c. The sensitivity of the facility in relation to unstable environments (e.g. changes in geothermal activities); and
   d. Measures to protect the surrounding natural and physical resources (e.g. aquifers, streams, wetlands, habitats, lakes); and
   e. The separation distances from adjoining land use activities and people potentially at risk from the hazardous facility; and
   f. Managing risks to adjoining property; and
   g. Cumulative effects of hazardous facilities in the area; and
   h. Site drainage and off-site infrastructure (e.g. stormwater and sewer types and capacities); and
   i. Quantities and uses of hazardous substances; and
   j. Transfer/transport of hazardous substances on and off the site; and
   k. Site layout and design; and
   l. Spill contingency and emergency planning, monitoring and maintenance; and
   m. Disposal of wastes containing hazardous substances.

Risk assessment

16.8.6.5 A risk assessment, identifying any risk to the environment or health and safety of the community shall be required. The level of detail required will depend on the scale and intensity of the effects of the proposed land use activity or facility. A risk assessment shall include an assessment of the following matters:

1. Separation distances to people sensitive activities, especially land use activities such as schools, rest homes, hospitals, marae and shopping centres: and
2. The location of the land use activity or facility in relation to the aquifers, streams or lakes; and
3. The nature of the site's subsoil and/or geology; and
4. The distance to sensitive habitats in the area or water catchments; and
5. The cumulative and/or synergistic effects, biotoxicity, and bioaccumulation of hazardous substances used or stored; and
6. Fire safety and fire water management; and
7. The extent to which the adherence to health and safety, code of practice or environmental management systems is relevant to the particular circumstances of the application or will lead to improved environmental outcomes. Where appropriate, the Council recommends the use of a national and/or international standard, such as the NZCIC Responsible Care Programme, the ISO 9000 system, the ISO 14000 system, the ISRS system and the BS 7750 system. The Council will give consideration to any other alternative site management system which will achieve the same intent of any of the above systems; and
8. Spill contingency and emergency planning, monitoring and maintenance schedules; and
9. Site drainage and off-site infrastructure (e.g. stormwater, sewer type and capacity); and
10. The level of risk associated with the transportation of hazardous substances, both for the roading network and for the amenity and environment through which the transport route concerned passes.

16.9 NON-COMPLYING ACTIVITIES

16.9.1 There are no Non-complying activities in this Part.

16.10 TRADE WASTE

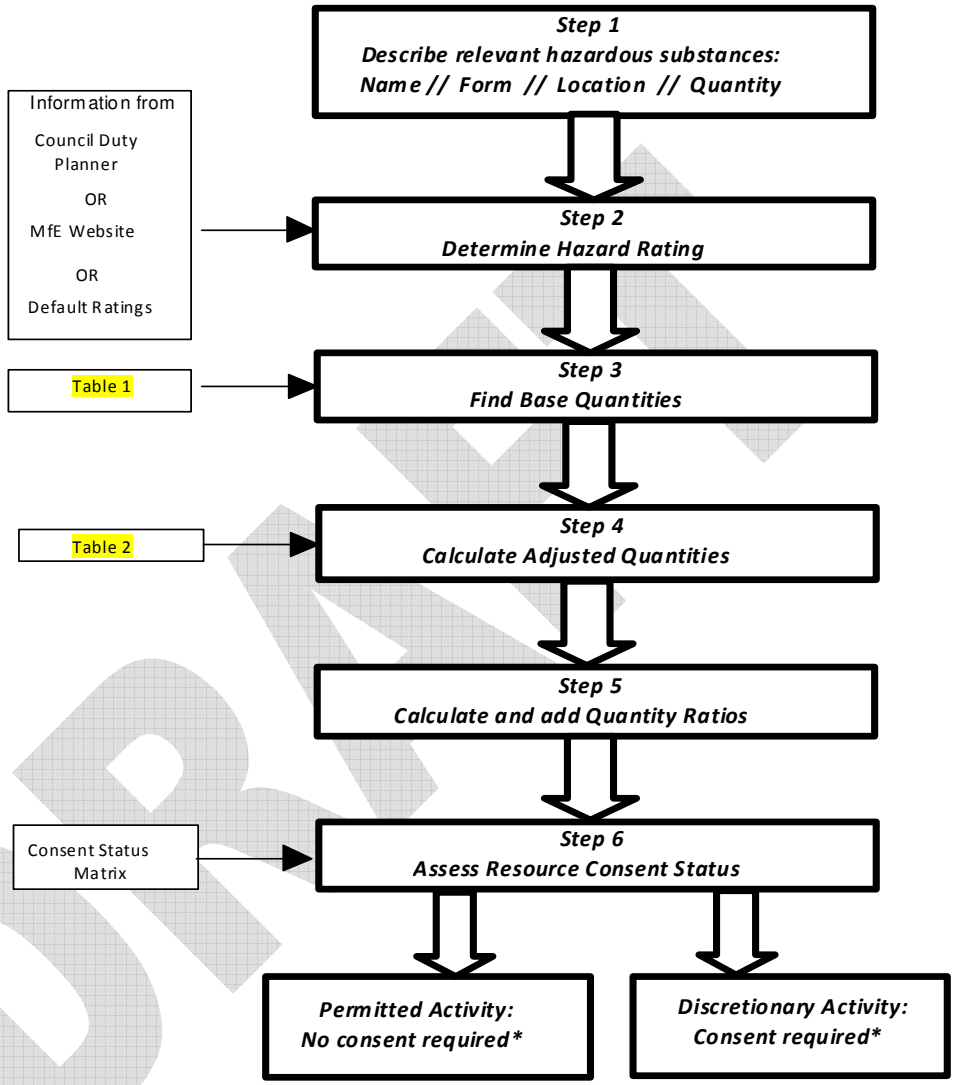
16.10.1 Notwithstanding any provisions in this Part, the discharge of liquid and solid Trade Wastes onto land or into a sewer serviced by the Rotorua Wastewater Treatment Plant, or to a stormwater drain must comply with Council's *Water Services and Trade Waste Bylaw2010.*

16.10.2 The issue of a trade waste consent does not constitute compliance or substitute liability to comply with the requirements under the district plan, regional council or other legislation.

16.11 HAZARDOUS FACILITIES SCREENING PROCEDURE

The Hazardous Facility Screening Procedure (HFSP) is applied to hazardous facilities in all zones and in addition to other zone–specific rules. The HFSP is used to screen hazardous facilities and their sites. However, where hazardous facilities on the same site are separated by more than 30 metres from each other, they may be dealt with as separate facilities and the HFSP applied to them separately.

16.11.1 The following provides a step-by-step guide and an attached worksheet in 16.11.4 on how to use the HFSP.



NOTE: Compliance with minimum performance standards is always required.

16.11.1 The HFSP Step-by-Step Guide

STEPS	HFSP CALCULATIONS				EXPLANATION
1. Describe the hazardous facility Prior to using the HFSP, it is necessary to compile a full description of the hazardous facility in question. This includes the creation of an inventory of hazardous substances held on the site, including: • names of the hazardous substances; • quantities of the hazardous substances; • the physical form of the substances at 20°C and 101.3 kPa; and • the location of use or storage on the site, including separation distances from the site boundary and neighbouring hazardous facilities (on-site and off-site). The description should also include site-specific details, including neighbouring land uses and the surrounding environment, with a focus on sensitive land uses and receptors (for example, retirement accommodation, aquifers or wetlands).	**Substance Name** Substance 1 Substance 2 ……. Substance 10 **Petrol**	**Substance Form** (liquid, solid, gas) **Liquid**	**Location of substances on site** **<30 metres**	**Proposed Quantity (P)** (tonnes or m³) **50 t**	The HFSP uses standard units of tonnes (for solids, liquids and liquefied gases) and m³ (for compressed gases). In some cases, it may therefore be necessary to convert substance quantities to these units. In the case of liquids, specific gravity (or density) must be taken into consideration when converting litres or m³ to tonnes (i.e. volume of liquid (litres) x specific gravity = tonnes). 1000 Adjustments to quantities are also necessary where a substance is diluted with water or mixed with another substance. In this instance, only the percentage quantity of the hazardous substance or product in the dilution or mixture is assessed for the purposes of HFSP calculations (unless a mixture is more hazardous than its components, in which case data on the mixture need to be used). An exception to this are products or brands that already constitute dilutions or mixtures of hazardous substances and which have been classified in terms of their hazardous properties as the 'whole' dilution or mixture for life cycle management purposes. Examples of this are corrosives, oxidising substances and pesticides, which are often sold commercially as standard solutions or strengths. In these cases, quantity adjustments are only applied when these commercially supplied concentrations are further diluted or mixed.

EXAMPLE

2. Determine Hazard Rating

For the purposes of the HFSP, the effects of substances are categorised into three Effect Types:

- Fire/Explosion Effect Type: addressing damage to the built environment and safety of people;
- Human Health Effect Type: addressing adverse effects on the well-being, health and safety of people;
- Environmental Effect Type: addressing adverse effects on ecosystems and natural resources.

Each Effect Type is divided into three Hazard Rating Levels:

♦ High ♦ Medium ♦ Low

The rating levels are predominantly based on the HSNO classification system.

Substance Name	Hazard Rating	Hazard Rating	Hazard Rating
Substance 1 Substance 2 ……. Substance 10	Fire/ Explosion High (H) or Medium (M) or Low (L)	Human Health High (H) or Medium (M) or Low (L)	Environment High (H) or Medium (M) or Low (L)
EXAMPLE			
Petrol	**High**	**-**	**High (Default)**

The HFSP rates hazardous substances in terms of each of the three Effect Types as having a high, medium or low hazard.

The Hazard Rating of a substance is derived from:

1. The list of HFSP-rated hazardous substances is available from the Council Duty Planner or MFE website.
2. The HSNO classification (16.11.4 or ERMA website). Once a substance has been classified under HSNO, Hazard Ratings can be assigned for each Effect Type as shown in 16.11.4.
3. Where a substance is neither found in the list of HFSP related substances available from Council's Duty Planner or the HSNO databases on the MfE/ERMA websites, default ratings should be used (Fire/Explosion Effect Type: Medium, Human Health Effect Type: Medium and Environment Effect Type: **High**)

3. Find Base Quantities The Base Quantity (B) is pre-calibrated. It is the amount of a substance that has been assessed as generating no significant off-site effects in a heavy industrial area before site- and substance-specific considerations have been taken into account (refer Step 4). Base Quantities for different hazardous properties and hazard ratings in each Effect Type are listed in Table 1.	**Substance Name** Substance 1 Substance 2 ……. Substance 10	Base Quantities (B) Fire/ Explosion B_1 B_2 …….. B_{10}	Base Quantities (B) Human Health B_1 B_2 …….. B_{10}	Base Quantities (B) Environment B_1 B_2 …….. B_{10}	For example, in the Fire/Explosion Effect Type [Sub-category Flammables], non-significant off-site effects in a heavy industrial area are represented by a Base Quantity of: • 100 tonnes of a HSNO Category D flammable liquid which has a low hazard level for the Fire/Explosion Effect Type. • 30 tonnes of a HSNO Category C flammable liquid which has a medium hazard level for the Fire/Explosion Effect Type.
	EXAMPLE				
	Petrol	**10 t**	**-**	**1 t**	

4. Calculate Adjusted Quantity (A)

The pre-calibrated Adjustment Factors (FF, HF, EF) are multiplied with the Base Quantities (B) to account for substance properties and site-specific environmental circumstances. This multiplication yields the Adjusted Quantity (A).

Adjustment Factors differ for each of the Effect Types, and take into account the following considerations:

- the physical state of the substance;
- the type of storage;
- the type of activity or use;
- separation distances to the site boundary;
- the environmental sensitivity of the site location.

The Adjustment Factors are listed in Table 2.

Substance Name	Fire/ Explosion	Human Health	Environment
	A_1	A_1	A_1
Substance 1	A_2	A_2	A_2
Substance 2	…….	…….	…….
…….	A_{10}	A_{10}	A_{10}
Substance 10			
	EXAMPLE		
Petrol	**100 t (10 tonnes x 10)**	**-**	**3 t (1 tonne x 3)**

Different Adjustment Factors are applied for each Effect Type. For example, for the Fire/Explosion Effect Type, the temperature is relevant, while for the Human Health Effect Type, proximity to a potable water resource is important.

In some instances, more than one Adjustment Factor within each Effect Type must be applied, which then need to be multiplied with each other to yield the total Adjustment Factor for the Effect Type. When the Adjustment Factors for each Effect Type have been calculated, they in turn are multiplied with the Base Quantity to yield the Adjusted Quantity).

In the example given, the following parameters have been assumed:

- <30 to site boundary;
- not adjacent to water body;
- underground storage.

5. Calculate and add Quantity Ratios (FQ, HQ, EQ)

This step requires the calculation of the Quantity Ratio for each hazardous substance in question. The Quantity Ratio is a dimensionless number. It is obtained by dividing the quantity of a substance that is proposed to be used or stored on a site, ie. the Proposed Quantity (P) by the Adjusted Quantity (A).

If several hazardous substances are used or stored on a site, the Quantity Ratios calculated for each of these substances are added up for each Effect Type.

Note that $FQ/HQ/EQ_{Total}$ stands for the total sum of Quantity Ratio values from all assessed hazardous substances, within each Effect Type.

Substance Name	Quantity Ratios (FQ, HQ, EQ)		
	Fire/ Explosion	Human Health	Environment
Substance 1	FQ_1	HQ_1	Q_1
Substance 2	FQ_2	HQ_2	Q_2
…….	…….	…….	…….
Substance 10	FQ_{10}	HQ_{10}	Q_{10}
	FQ_{Total}	HQ_{Total}	EQ_{Total}
EXAMPLE			
Petrol	**0.50** (50 tonnes / 100 tonnes)	**-**	**16.67** (50 tonnes / 3 tonnes)

By using the dimensionless ratio of the Proposed Quantity of a hazardous substance over the Adjusted Quantity, it is possible to aggregate the effects presented by multiple substances held on the same site. Hence, it becomes possible to assess the cumulative potential effects which may be created by several substances present on the same site.

<table>
<tr>
<td>6. Assess resource consent status of hazardous facility
When assessing the resource consent status of a particular hazardous facility, the added Quantity Ratios for each Effect Type are compared with relevant Consent Status Indices in the Resource Consent Matrix in the district plan. If they are exceeded, a resource consent is required.</td>
<td colspan="4">
<table>
<tr><th rowspan="2">Substance Name</th><th colspan="3">Does Quantity Ratio exceed Consent Status Index?</th></tr>
<tr><th>Fire/ Explosion</th><th>Human Health</th><th>Environment</th></tr>
<tr><td>Substance 1</td><td>YES/NO</td><td>YES/NO</td><td>YES/NO</td></tr>
<tr><td>Substance 2</td><td></td><td></td><td></td></tr>
<tr><td>…….</td><td></td><td></td><td></td></tr>
<tr><td>Substance 10</td><td></td><td></td><td></td></tr>
</table>
EXAMPLE
In a typical industrial zone:
Petrol NO - YES
</td>
<td>When examining total Quantity Ratios against applicable Consent Status Indices, one or several substances may trigger a resource consent. This highlights the fact that when assessing hazardous facilities, it is often sufficient to assess just a few hazardous substances to start off with, mainly those that are either highly hazardous or are used/stored in high quantities.</td>
</tr>
</table>

16.11.2 Table 1: Base Quantities (B) for all Effect Types and Hazard Ratings

HSNO CATEGORY	UN CLASS EQUIVALENT	HAZARD LEVEL	UNIT	BASE QUANTITY (B)		
				Fire / Explosion	Human Health	Environment
EXPLOSIVENESS						
1.1	Class 1.1	High	tonnes	0.1	-	-
1.2	Class 1.2	Medium	tonnes	1	-	-
1.3	Class 1.3	Low	tonnes	3	-	-
FLAMMABLE GASES						
2.1 A+B (LPG)	Class 2.1	Medium	tonnes	30	-	-
2.1 A+B (excluding LPG)	Class 2.1	High	m^3	10,000*	-	-
FLAMMABLE LIQUIDS						
3 A and 3 B	Class 3PGI and 3PGII	High	tonnes	10	-	-
3 C	Class 3PGIII	Medium	tonnes	30	-	-
3 D		Low	tonnes	100	-	-
FLAMMABLE SOLIDS						
4.1 (all categories)	Class 4.1	Medium	tonnes	10	-	-
4.2 (all categories)	Class 4.2	High	tonnes	1	-	-
4.3 (all categories)	Class 4.3	High	tonnes	1	-	-
OXIDISING GASES, LIQUIDS AND SOLIDS						
5.1 (all categories)	Class 5.1	Medium	tonnes (m^3)	10 (10,000*)	-	-
5.2 (all categories)	Class 5.2	High	tonnes	1	-	-
TOXIC GASES, LIQUIDS AND SOLIDS						
6.1 A	Class 6.1 PGI	High	tonnes	-	0.5	-
6.1 A	Class 2.3 PGI	High	m^3	-	30*	-
6.1 B	Class 6.1 PGII	Medium	tonnes	-	10	-
6.1 B	Class 2.3 PGII	Medium	m^3	-	50*	-
6.7-6.9 (chronic toxicity categories)	OECD	Medium	tonnes	-	10	-
6.1 C	Class 6.1 PGIII	Low	tonnes	-	30	-
6.1 C	Class 2.3	Low	m^3	-	500*	-

* Base Threshold in m^3 at 101.3 kPA and 20 ^{0}C for permanent or compressed gases.

CORROSIVE GASES, LIQUIDS AND SOLIDS						
(8A) 6.3-6.4 (corrosives, all categories)	Class 8	Medium	tonnes (m^3)	-	10	-
ECOTOXIC GASES, LIQUIDS AND SOLIDS						
9.1-9.4A	(OECD 1)	High	tonnes (m^3)	-	-	1 (30*)
9.1-9.4B	(OECD 2)	Medium	tonnes (m^3)	-	-	30 (50*)
9.1-9.4C	(OECD 3)	Low	tonnes (m^3)	-	-	100 (500*)

16.11.3 Table 2 - Adjustment Factors

ADJUSTMENT FACTORS FOR ALL EFFECT TYPES		
Fire/Explosion	**Human Health**	**Environment**
FF1: SUBSTANCE FORM	**FH1: SUBSTANCE FORM**	**FE1: SUBSTANCE FORM**
Solid Liquid, powder Gas (101.3 kPA and 20°C)	Solid = 3 Liquid, powder = 1 Gas (101.3 kPA and 20°C) = 0.1	Solid = 3 Liquid, powder = 1 Gas (101.3 kPA and 20°C) = 0.1
FF2: SEPARATION DISTANCE FROM SITE BOUNDARY (SUB-FACILITY)	FH2:-SEPARATION DISTANCE FROM SITE BOUNDARY (SUB-FACILITY) (GASES ONLY)	**FE2: ENVIRONMENTAL SENSITIVITY**
< 30 metres > 30 metres (> 60 metres)[1]	< 30 metres = 1 > 30 metres (> 60 metres) [1] =3	More than 100 metres from a water resource[2] = 1 Adjacent to or within 100 metres of a water resource = 0.3
FF3: TYPE OF ACTIVITY	**FH3: TYPE OF ACTIVITY**	**FE3: TYPE OF ACTIVITY**
Use Above ground storage Underground storage[3]	Use = 0.3 Above ground storage = 1 Underground storage [3] = 10	Use = 0.3 Above ground storage = 1 Underground storage [3] = 3
Final Fire/Explosion Adjustment Factor **FF = FF1 x FF2 X FF3**	Final Human Health Adjustment Factor **FH = FH1 x FH2 X FH3**	Final Environment Adjustment Factor **FE = FE1 x FE2 X FE3**

[1] If the facility is assessed as a sub-facility, the distance to the neighbouring sub-facility must be more than 60 metres (i.e. 2 x 30 metres) to qualify for an Adjustment Factor of 3.

[2] Water resource includes aquifers and water supplies, streams, rivers, springs, lakes, wetlands, but do not include entry points to the stormwater drainage network.

[3] Applicable to UN Class 3 substances (flammable liquids) only.

16.11.4 HFSP CALCULATION SPREADSHEET

APPLICATION NO	
APPLICANT	
CONTACT NAME	
POSTAL ADDRESS	
SITE ADDRESS	
PHONE NUMBER	
FAX NUMBER	
E-MAIL	
COMMENT	

Ref. No.	Substances on this site	CAS No.	Effect Type	Hazard Rating	Base Quantity B t or m^3	Substance Form	Distance to boundary less than 30 metres? Y ES N O	Adjacent to water? Y ES N O	Type of Activity A /Ground B /Ground U se	Adjustment Factors F1	F2	F3	Product of Adjustment Factors	Adjusted Quantity T	Proposed Quantity Q t or m^3	Fire/ Explosion Quantity Ratio	Human Health Quantity Ratio	Environment Quantity Ratio
1			Fire/Explosion															
			Human Health															
			Environment															
2			Fire/Explosion															
			Human Health															
			Environment															
3			Fire/Explosion															
			Human Health															
			Environment															
4			Fire/Explosion															
			Human Health															
			Environment															
5			Fire/Explosion															
			Human Health															
			Environment															
6			Fire/Explosion															
			Human Health															
			Environment															
7			Fire/Explosion															
			Human Health															
			Environment															
8			Fire/Explosion															
			Human Health															
			Environment															
9			Fire/Explosion															
			Human Health															
			Environment															
10			Fire/Explosion															
			Human Health															
			Environment															
	Total Quantity Ratios																	

16.12 HFSP RATING FOR HAZARDOUS SUBSTANCES

The full description of HSNO Classes, Sub-classes and Categories is contained in the HSNO Regulations.

Hazard	HSNO Class & Category	(UN Division)	Description	Effect Type	Hazard Rating
Explosiveness	1.1	1.1	Articles and substances having a mass explosion hazard.	Fire/Explosion	**High**
	1.2	1.2	Articles and substances having a projection hazard, but not a mass explosion hazard.	Fire/Explosion	**Medium**
	1.3	1.3	Articles and substances having a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard. This division comprises articles and substances that: • give rise to considerable radiant heat, or • burn one after another, producing minor blast and/or projection effects.	Fire/Explosion	**Low**
	1.4, 1.5, 1.6	1.4, 1.5, 1.6	Not applicable.		
Flammable Gases	2.1A, 2.1B	2.1	Flammable gases: (i) gases which at 20^{o}C and a standard pressure of 101.3 kPa: • are ignitable when in a mixture of 13% or less by volume with air, or • have a flammable range with air of at least 12% regardless of the lower flammability limit; or, (ii) gases or gas mixtures, other than those of (i) above, that at 20^{o}C and a standard pressure of 101.3 kPa have a flammable range in mixture in air. Flammable aerosols, being a pressurised mixture of containing gas, compressed, liquified, or dissolved under pressure, with or without a liquid, paste or powder; comprising at least 45 % by mass of flammable ingredients, under a pressure greater than 100 kPa, which can be released in a finely divided spray.	Fire/Explosion	**High**
	-	LPG	LPG	Fire/Explosion	**Medium**
		2.2	Not applicable.		
Flammable Liquids	3A	3 PGI	Flammable liquids comprising liquids, mixtures of liquids, or liquids containing solids in suspension which give off a flammable vapour at specific temperatures. Flash point: < 23^{o}C Initial boiling point: < 35^{o}C	Fire/Explosion	**High**

	3B	3 PGII	Flash point: $< 23^{o}C$ Initial boiling point: $> 35^{o}C$	Fire/Explosion	**High**
	3C	3 PGIII	(a) Flash point: $\geq 23^{o}C; \leq 60^{o}C$ (b) Flash point: $> 60^{o}C$, but liquid is manufactured, stored, transported or used (except deliberate burning) at a temperature at or above its flash point.	Fire/Explosion	**Medium**
	3D	Combustible Liquids	Flash point: $> 60^{o}C$ but $\leq 93^{o}C$	Fire/Explosion	**Low**
Flammable Solids	4.1 All Categories	4.1	• Flammable solids that are readily combustible or may cause fire easily through an ignition source or friction. • Self-reacting substances that are thermally unstable and are liable to undergo a strongly exothermic decomposition even without the participation of oxygen (and related substances). • Desensitised explosives: substances which are wetted with water or alcohol or diluted with other substances to suppress their explosive properties.	Fire/Explosion	**Medium**
	4.2 All Categories	4.2	Substances liable to spontaneous combustion: • pyrophoric substances: liquid or solid substances which, even in small quantities, ignite within 5 minutes of coming in contact with air • self-heating substances: solid substances which generate heat when in contact with air without additional energy supply.	Fire/Explosion	**High**
	4.3 All categories	4.3	Substances which, in contact with water, become spontaneously flammable, or emit flammable gases.	Fire/Explosion	**High**
Oxidising Capacity	5.1 All categories	5.1	Oxidising substances: substances which in themselves are not necessarily combustible, but may cause or contribute to the combustion of other materials by yielding oxygen.	Fire/Explosion	**Medium**

	5.2 All categories	5.2	Organic peroxides: organic substances that are thermally unstable and may undergo exothermic, self-accelerating decomposition. They may: • be liable to explosive decomposition, • burn rapidly, • be sensitive to impact or friction, • react dangerously with other substances • cause damage to the eyes.	Fire/Explosion	**High**
Toxicity		6.1	Substances which are liable to cause death or injury or to harm human health if swallowed, inhaled, or contacted by the skin.		
	6.1A	6.1 PGI	Oral toxicity LD_{50} (mg/kg): ≤ 5 Dermal toxicity LD_{50} (mg/kg): ≤ 50 Inhalation toxicity dust/mist LC_{50} (mg/l): ≤ 0.05	Human Health	**High**
	6.1B	6.1 PGII	Oral toxicity LD_{50} (mg/kg): >5 - 50 Dermal toxicity LD_{50} (mg/kg): >50 - 200 Inhalation toxicity dust/mist LC_{50} (mg/l): >0.5 - 1	Human Health	**Medium**
	6.1C	6.1 PGIII	Oral toxicity LD_{50} (mg/kg): Dermal toxicity LD_{50} (mg/kg): Inhalation toxicity dust/mist LC_{50} (mg/l):	Human Health	**Low**
	6.1A	2.3	Toxic gases: gases which are known to be toxic or corrosive to humans and pose a hazard to health. This division is divided into the following categories: a) Inhalation toxicity gases LC_{50}: < 100 ppm, vapours LC_{50}: < 0.5 mg/l	Human Health	**High**
	6.1B		b) Inhalation toxicity gases LC_{50}: ≥ 100 ppm - 500 ppm, vapours LC_{50}: ≥ 0.5 mg/l – 2 mg/l	Human Health	**Medium**
	6.1C		c) Inhalation toxicity gases LC_{50}: ≥ 500 ppm - 2,500 ppm, vapours LC_{50}: ≥ 2 mg/l – 10 mg/l	Human Health	**Low**
	(8A) 6.4 All categories	8	Eye Irritation/Corrosiveness: Chemical Property: 2 > pH > 11.5. Effect: Draize Grade ≥ 1 for either corneal opacity or iritis or Grade 2 for either conjunctival redness or chemosis	Human Health	**Medium**
	(8A) 6.3 All categories	8	Skin Irritation/Corrosiveness: Chemical Property: 2 > pH > 11.5. Effect: Draize Grade ≥ 1.5 for erythema or oedema	Human Health	**Medium**
	6.4	(OECD 1 & 2)	Respiratory or contact sensitiser.	Human Health	**Medium**
	6.7A, 6.7B	(OECD 1 & 2)	Carcinogenicity: Suspected or presumed carcinogen.	Human Health	**Medium**
	6.9A, 6.9B	(OECD 1 & 2)	Known, presumed or suspected human target organ toxicity.	Human Health	**Medium**

	6.6A, 6.6B	(OECD 1 & 2)	Substances known or regarded as mutagenic OR Substances which cause concern for man owing to the possibility that they may induce heritable mutations in the germ cells of human.	Human Health	**Medium**
	6.8A, 6.8B	(OECD 1 & 2)	Known, or presumed Human Reproductive or Developmental Toxicant OR Suspected Human Reproductive or Developmental Toxicant.	Human Health	**Medium**
	6.8C	(OECD)	Effects on or via lactation: Data showing (i) a likelihood that the substance would be present in potentially toxic levels in human breast milk; AND/OR (ii) clearly defined adverse effect in the offspring of animals due to transfer in the milk; OR clearly defined adverse effect on the quality of the milk in animals; AND/OR (iii) human evidence indicating a hazard to babies during the lactation period.	Human Health	**Medium**
		6.2	Not applicable.		
Ecotoxicity			Ecotoxic substances: any substance exhibiting a toxic effect on ecosystems. This division is divided into three categories.		
	9.1A 9.2A 9.3A 9.4A	(OECD1)	a) Very toxic to the aquatic environment; very toxic to the terrestrial environment; very toxic to terrestrial vertebrates; very toxic to beneficial invertebrates.	Environment	**High**
	9.1B 9.2B 9.3B 9.4B	(OECD2)	b) Toxic to the aquatic environment; toxic to the terrestrial environment; toxic to terrestrial vertebrates; toxic to beneficial invertebrates.	Environment	**Medium**
	9.1C 9.2C 9.3C 9.4C	(OECD3)	c) Harmful to the aquatic environment; harmful to the terrestrial environment; harmful to terrestrial vertebrates; harmful to beneficial invertebrates.	Environment	**Low**

16.13 DEFINITIONS

The terms defined below apply in relation to hazardous substances, hazardous facilities, contaminated land and to this part of the Plan. In addition, meanings for other terms can be found in Part 1 Definitions. Where there is any difference in meaning between the two sets of definitions, those below are to be used in relation to hazardous substance facilities unless the context requires another meaning:

16.13.1

Accident	A sudden event causing harm to people, property or the natural environment
Acute toxicity	Adverse effects caused by a substance with toxic properties occurring within a short time following exposure to that substance.
Adjusted Quantity	The amount (mass in tonnes or m^3, at 101.3kPa and 200°C for compressed gases) of a substance that has been assessed as generating no significant off-site effects in a heavy industrial area after site-and-substance specific considerations have been taken into account.
Adjustment Factor	The product of the individual factors for each Effect Type (*Fire/Explosion*, *Human Health* and *Environment*) that increase or decrease the likelihood and consequences of the release of a hazardous substance.
Base Quantity	The amount (mass in tonnes or m^3, at 101.3kPa and 200°C for compressed gases) of a substance that has been assessed as generating no significant off-site effects in a heavy industrial area before site-and-substance specific considerations have been taken into account.
Bioaccumulation	Accumulation of a substance within the tissues of living organisms.
BOD5	The biochemical oxygen demand (measured over a five day period) which is the amount of dissolved oxygen in a body of water required for the breakdown of organic material in the water.
Carcinogen	Causing a statistically significant increase in the incident of tumors - See HSNO Regulations.
Chronic toxicity	Adverse effects caused by a substance with toxic properties which occur either after prolonged exposure or an extended period after initial exposure.
Cleaner Production	The use of techniques to reduce the need for raw materials and/or energy and the amount of wastes generated. These techniques may include the use of recyclable materials, the use of less hazardous substances or the reduction in their quantity and the use of renewable resources.
Code of Practice	Means any document for the purpose of specifying procedures and practices, or equipment and facilities for the management of hazardous substances, including documents issued and approved in accordance with HSNO.
Consent Status Index	Numerical values in the District Plan that are used to determine the consent status of a facility.
Consequence:	The outcome of an event or situation expressed qualitatively or quantitatively, being a loss, injury, disadvantage or gain (AS/NZS 4360:2004).
Contaminant	has the same meaning as in Section 2 of the Act.
Corrosive	Capability of breaking down metal or human tissue on contact -See HSNO Regulations.
Cumulative Risk	The risk posed by a hazardous facility added to or multiplied by risks from other facilities.

Disposal	**in relation to a hazardous substances** has the same meaning as in Section 2 of the HSNO Act**.**
Ecosystem	A biotic community and its abiotic environment, considered together as a unit. Ecosystems are characterised by a flow of energy that leads to trophic status and material recycling
Ecotoxic:	Capability of causing ill health, injury, or death to any living organism. Amended to be same as HSNO defn – checked no defn in HSNO regs
Effect	Has the same meaning as section 2 of the Act with the addition of including any acute or chronic effect.
Effect Types	The effects generated when a hazardous substances is released or reacts: • *Fire /Explosion effect types* - concerned with damage to property, the built environment and people by substances with explosive, flammable or oxidising properties; • *Human Health effect types* - concerned with adverse effects to the well-being and health of people by substances with toxic or corrosive properties; • *Environmental effect types* - concerned with damage to ecosystems or natural resources by substances with eco-toxic or corrosive properties.
Emergency Plans:	A regularly updated document serving as an emergency response guide by identifying and cataloguing the elements required to respond to an emergency, and defining responsibilities and specific tasks in an emergency.
Environment	Has the same meaning as section 2 of the Act and section 2 HSNO Act
Environmental Management System	Part of the overall management system that includes organisational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy (ISO/IDS 14050).
Environmentally Damaging Substances	Risks to human health and welfare including ecosystem health, that arise in, or are transmitted by the natural environment.
Environmentally Sensitive Areas	Areas that, in the judgment of the local community and/or regulatory authority, should not be subject to more than a specified low risk, or where additional safeguards are required when undertaking activities exceeding the specified low risk. Environmentally sensitive areas may include aquifers, waterways, wetlands, coastal environments, special ecosystems or species habitats.
Explosiveness	Capability of sudden expansion owing to release of internal energy.
Flammable	means a substance that meets 1 or more of the minimum degrees of hazard for a flammable gas, a flammable liquid, or a flammable solid, or any combination of them (adapted from HSNO regulation).
Flammability	Capability to be ignited in the presence of oxygen and to sustain combustion.
Frequency	Measure of likelihood expressed as the number of occurrences of an event in a given time. See also Likelihood and Probability.
Harm	Injury or damage to health, property or the environment,
Hazard	Actual or potential source of harm or a situation with a potential to cause adverse effect (modified from AS/NZS 4360:2004).
Hazard Rating	The level of hazard (high, medium or low) applied to a hazardous substance

	for the purpose of an HFSP calculation, based on its HSNO classification.
Hazardous Activity	An activity which does not include the use, storage or otherwise handling or a hazardous substances but which may pose a risk to the environment or a community (for example, earthworks).
Hazardous Facility	Activities involving hazardous substances and sites, including vehicles for their transport, at which these substances are used, stored, handled or disposed of Hazardous facilities in the context of this chapter do not include: • the incidental use and storage of hazardous substances in minimal domestic-scale quantities • hazardous activities which do not involve hazardous substances but which may pose a risk to people or the natural environment due to a physical or biological hazard (for example, earthworks, electromagnetic radiation or genetically modified organisms) • pipelines used for the transfer of hazardous substances such as gas, oil and sewage active substances, which are covered by other legislation.
Hazardous Sub-Facility	A hazardous facility that is separated by more than 30 metres from any other hazardous facility on the same site.
Hazardous substance	Means, unless expressly provided otherwise by regulations, any substance— a. With one or more of the following intrinsic properties: - Explosiveness: - Flammability: - A capacity to oxidise: - Corrosiveness: - Toxicity (including chronic toxicity): - Ecotoxicity, with or without bioaccumulation; or b. Which on contact with air or water (other than air or water where the temperature or pressure has been artificially increased or decreased) generates a substance with any one or more of the properties specified in paragraph (a) of this definition.
Hazardous Waste	Is any waste that is listed in the *New Zealand Hazardous Waste List* in Attachment B in "Towards a New Zealand Definition of Hazardous Waste" (October 1999) Mfe Technical Working Paper.
HFSP	Hazardous Facility Screening Procedure.
HSNO	Includes reference to both the Hazardous Substances and New Organisms Act 1996 and HSNO Regulations in relation to hazard classification and life cycle requirements for hazardous substances.
Likelihood	Qualitative description of probability or frequency (AS/NZS 4360:2004).
Off-site Effects	Effects on people, property and/or the natural environment outside the boundary of the site of a hazardous facility.
Oxidising Capacity	Capacity to contribute to fire or explosion due to the release of Oxygen - See HSNO Regulations.
Performance Requirements	Controls which say what is to be achieved (including in measurable terms), without being prescriptive (based on MfE, 1994).
Precautionary Approach	The need for caution in managing adverse effects of hazardous substances where there is scientific and technical uncertainty about those effects (based on HSNO).

Probability	Likelihood of a specific outcome, measured by the ratio of specific outcomes to the total number of possible outcomes. Probability is expressed as a percentage or number between 0 and 1, with 0 indicating an impossible outcome and 1 indicating an outcome is certain (based on AS/NZS 4360:2004).
Property Performance Requirements	Standards relating to the nature of the hazardous properties (e.g. explosive, toxic, corrosive etc) of a given hazardous substance (based on MfE, 1994).
Proposed Quantity	The quantity of a hazardous substance proposed to be used or stored on a site.
Quantity Ratio	The ratio of the proposed quantity of a substance over the applicable Base Quantity.
Radioactivity	means the ability of a substance to spontaneously disintegrate atomic nuclei, usually with the emission of penetrating radiation or particles.
Receptor	Ecological entity exposed to the stressor (USEPA Federal Register: Proposed Guidelines for Ecological Risk Assessment 1996).
Residual Risk	The risk remaining after risk treatment measures have been taken (modified AS/NZS 4360:2004).
Risk	The chance of something happening that will have an impact upon objectives. It may be an event, action, or lack of action. It is measured in terms of consequences and likelihood (AS/NZS 4360:2004). In the context of Part Fourteen of this Plan, risk is the chance of something happening that will have an impact on the environment.
Risk Analysis	The systematic use of available information to determine how often specified events may occur and the magnitude of their likely consequences (AS/NZS 4360:2004).
Risk Assessment	Overall process of risk identification, risk analysis and risk evaluation. (AS/NZS 4360:2004 & AS/NZS 3931:1998).
Risk Management	The systematic application of management policies, procedures and practices to the tasks of identifying, analysing, assessing, treating and monitoring risk (AS/NZS 4360:2004).
Risk Mitigation	Steps taken to reduce the probability of occurrence or the magnitude of the consequences (AS/NZS 4360:2004).
Separation Distance	The distance from the edge of the area where hazardous substances are used, stored or otherwise handled to the edge of the area exposed to defined adverse effects.
Site Management System	The means of ensuring the ongoing safety of a hazardous facility through sound management. A site management system should include safety policy, provides a description of organisational structure and responsibilities, including operating, emergency and monitoring procedures; and carry out regular performance auditing.
Spill Containment System	A structure which will contain liquid or solid hazardous substances in the event of a spill, and prevent them from entering the stormwater system or a natural water body.
Storage	The containment of a substance, either above ground or underground,

	which is not being used for the manufacturing or altered to another substance, but does not include use of a substance as a cooling or heating medium. Storage does include the filling and emptying of a container.
Substance	Any element, defined mixture of elements, compounds or defined mixtures of compounds, either naturally occurring or produced synthetically, or any mixtures thereof: a. Any isotope, allotrope, isomer, congener, radical, or ion of an element or compound which has been officially declared by the Environmental Risk Management Authority to be a different substance from that element or compound. b. Any mixtures or combinations of any of the above. c. Any manufactured article containing, incorporating or including any hazardous substances with explosive properties (Section 2 HSNO Act).
The Act	means the Resource Management Act 1991.
Trade Waste	Is defined as any wastewater or liquid, with or without matter in suspension or solution, that is or may be discharged from a trade premises in the course of any trade or industrial process operation, or in the course of any activity or operation of a like nature, but does not include stormwater or domestic sewage.
Unintentional release	Unplanned or unwanted release of a hazardous substance or substances that may or may not be detected immediately.
Use	The manufacturing, processing or handling of a substance for a particular activity without necessarily changing the physical state or chemical structure of the substance involved. This includes mixing, blending, and packaging operations, but does not include the filling or drawing of substances from bulk storage tanks unless the processing is permanently connected to the bulk storage and does not include loading out and dispensing of petroleum products.