WAIMAKARIRI DISTRICT COUNCIL

MEMO

FILE NO AND TRIM NO:	DDS-06-10-02-05-24 / 230914143795
DATE:	20 September 2023
MEMO TO:	Proposed District Plan Hearings Panel
FROM:	Jessica Manhire, s42A reporting officer for Hazardous Substances
SUBJECT:	HS-R1 - underground storage of hazardous substances, and update to District Council reply on Matū mōrearea - Hazardous Substances

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Introduction

1. In my reply report for the Hazardous Substances Chapter, I set out my intention to liaise further with the Fuel Companies regarding HS-R1 and the underground storage of hazardous substances. As this has now been undertaken, this memo provides an update to the recommendations contained in my reply report dated 17 August 2023.
2. The Hearings Panel directed me to provide a final reply report by no later than 4pm Friday 22 September 2023.
3. The Fuel Companies have provided a response on my recommended new Rule HS-R1b for underground storage at hazardous facilities. I have attached this response as Appendix B to this memo. I have considered the response from the Fuel Companies in my assessment below and have provided updated recommended amendments which has been attached as Appendix A.
4. I would also like to note a matter that I have become aware of since the reply report. In the s42A report, I recommended deletion of the word 'property' in HS-O1 and HS-P1 as it is part of the definition of the 'environment' in the RMA. However, I note that retaining the word 'property' would more directly describe what the National Grid Yard is. I recommended in my s42A that the National Grid Yard be added into the Introduction and HS-P1. All my other recommendations remain unchanged.

Assessment

5. The Fuel Companies has requested my recommended new Rule HS-R1b is amended as shown in red:

> *1. The underground storage within any hazardous facility:*
>
> *a. is undertaken in general accordance with HSNOCOP 44 Below Ground Stationary Container Systems for Petroleum – Design and Installation and HSNOCOP 45 Below Ground Stationary Containers Systems for Petroleum – Operation, for matters that pertain to the potential stability and containment of hazardous substances in a flood event; ~~and~~*

~~*b. provides protection measures to contain a spill or release of hazardous substance within a bunded or other secure area.*~~

Condition a.

6. The Fuel Companies state that *"there can be site specific characteristics that mean that strict adherence to the codes of practice may not be practical in all circumstances. For this reason, condition a. should require that works are undertaken in 'general' accordance with the codes of practice".*
7. I consider the word "general" is not certain or enforceable. In circumstances where the codes of practice are not practical, then the specific mitigation of leakage in these areas can be considered through a resource consent process on a case-by-case basis taking into account the specific environment and aspects such as positioning of the tank in relation to the flood water.
8. I agree that the codes of practice cover matters that are not relevant to managing flood risks and condition a. should only relate to matters that pertain to the potential stability and containment of hazardous substances in a flood event.

Condition b.

9. Clause b. further ensures the risk is minimised by ensuring protection measures to prevent a release of hazardous substances. The containment aspects are covered by other legislation where the threshold quantities are exceeded but there is still a residual risk, particularly in flood prone areas as the location in relation to these areas is not specifically addressed by other legislation.
10. The Fuel Companies states that *"a bund serves no purpose for underground tanks which are surrounded by fill material and can sometimes be situated in groundwater."* My understanding was that condition b. could be met by a method of containment in a secure area such as secondary containment with double skinned tanks, to ensure where the main container breaks or leaks then the hazardous substance is contained. The Fuel Companies also state that the companies are required to use, and do use, a range of methods including secondary containment system. However, I consider including a condition requiring protection measures would ensure this is the case. Also, I note there are limits to the code of practice contained in section 3.3, page 11 of the HSNOCOP 44 including that it does not apply to class 2 hazard classification. Therefore, condition b. provides another means to ensure containment of hazardous substances, where the codes of practice may not.
11. I recommend condition b. be reworded to *"provides protection measures to prevent a release of hazardous substance"*, which I consider would address the Fuel Companies concerns.

Appendix A – Recommended amendments to PDP provisions

In order to distinguish between the recommendations made in the s42A report and the recommendations that arise from this report:

- s42A recommendations are shown in black text (with underline and ~~strike out~~ as appropriate); and
- Recommendations from this report in response to evidence are shown in blue text (with underline and ~~strike out~~ as appropriate).

HS - Matū mōrearea - Hazardous Substances

Introduction

Hazardous substance use, its storage and disposal can pose potential risks for human and ecological health and safety, and for property. These risks are primarily managed by HSNO, HSWA, Health and Safety at Work (Major Hazard Facilities) Regulations 2016, Health and Safety at Work (Hazardous Substances) Regulations 2017.

The District Plan should not duplicate specific legislation or the functions of Regional Council but can control effects that are not otherwise managed. This chapter addresses risk that is not controlled by zone provisions, Regional Council or other legislation. This includes the location of major hazard facilities using or storing hazardous substances, the location of sensitive activities and locations in areas that are prone to ~~flood hazard~~ natural hazards[1].

The provisions in this chapter are consistent with the matters in Part 2 - District Wide Matters - Strategic Directions and give effect to matters in Part 2 - District Wide Matters - Urban Form and Development.

Other potentially relevant District Plan provisions

As well as the provisions in this chapter, other District Plan chapters that contain provisions that may also be relevant to hazardous substances include:

- Energy and Infrastructure: this chapter contains rules for energy and infrastructure such as fuel and gas distribution, ~~and~~ storage and also addresses hazardous substances, amongst other activities, located in the National Grid Yard[2].
- Any other District wide matter that may affect or relate to the site.
- Zones: the zone chapters contain provisions about what activities are anticipated to occur in the zones.

[1] ECan [316.33]
[2] Transpower [195.54]

Objectives	
HS-O1	**Hazardous substance use, storage and disposal** Hazardous substance use, storage and disposal activities are enabled and located~~, and in the case of flood eventsmanaged,~~ [3]so that: 1. risk to people, property and the environment from any major hazard facility is minimised, including avoiding unacceptable risk to sensitive activities; 2. risk to any sensitive area is minimised; and 3. risk to land and water as a result of natural hazards, including flood events,[4] is minimised.
HS-O2	**Sensitive activities** The location of any new sensitive activity minimises reverse sensitivity effects on any existing major hazard facility, and avoids unacceptable risk to the sensitive activity.
Policies	
HS-P1	**New major hazard facility** Minimise risk to people, property and the environment from any new major hazard facility, or any addition to a major hazard facility by: 1. identifying risk to human and ecological health and safety, and to property, though a QRA of any proposed activity, including its site characteristics and any cumulative risk from the use, storage and disposal of hazardous substances on other sites; 2. ensuring the location provides sufficient separation from any sensitive activity to minimise any risk identified in a QRA for the activity and avoids unacceptable risk to existing sensitive activities; 3. locating outside of the National Grid Yard[5], any areas of significant indigenous vegetation, significant habitats for indigenous fauna and Sites and Areas of Significance to Māori, and zones and overlays where sensitive areas or activities predominate; and 4. locating outside any high hazard area unless risk associated with the hazard can be mitigated to protect human, and environmental, health and safety.
HS-P2	**Sensitive activity location** Ensure any new sensitive activity is sufficiently separated from any existing major hazard facility to minimise reverse sensitivity effects for the major hazard facility, and avoid unacceptable risk to the sensitive activity.

[3] Fuel Companies [276.2]
[4] ECan [316.34]
[5] Transpower [195.55]

HS-P3	**Hazardous substance storage and flood hazards** Within ~~the Non-Urban Flood Assessment Overlay, Urban Flood Assessment Overlay and the Kaiapoi Fixed Minimum Finished Floor Level Overlay~~[6]~~,~~ and ~~High Coastal Flood Hazard Area~~ any flood hazard overlays,[7] any hazardous substance shall be stored to minimise the risk of spillage or leakage and contamination of land and water in a flood event or from sea water inundation[8].

Activity Rules

HS-R1a	**Aboveground h~~H~~[9]azardous substance storage and use**	
	This rule does not apply to any major hazard facility provided for under HS-R2.	
Urban Flood Assessment Overlay **Non-Urban Flood Assessment Overlay** **~~Kaiapoi Fixed Minimum Finished Floor Level Overlay~~**[10] **Coastal Flood Assessment Overlay**[11]	**Activity status: PER** Where: 1. Above ground~~the~~[12] storage of hazardous substances within any hazardous facility is at, or above the finished floor level established ~~either by the Kaiapoi Fixed Minimum Finished Floor Level Overlay, or~~[13] by a Flood Assessment Certificate issued in accordance with NH-S1, or by a Coastal Flood Assessment[14] Certificate issued in accordance with NH-S2.[15]	**Activity status when compliance not achieved: RDIS** **Matters of discretion are restricted to:** HS-MD1 - Hazardous substances
HS-R1b	**Underground h~~H~~[16]azardous substance storage and use**	
	This rule does not apply to any major hazard facility provided for under HS-R2.	

[6] Natural Hazards s42A consequential amendment
[7] ECan [316.38]
[8] ECan [316.38]
[9] Fuel Companies [276.5]
[10] Natural Hazards s42A consequential amendment
[11] ECan [316.39]
[12] Fuel Companies [276.5]
[13] Natural Hazards s42A consequential amendment
[14] Natural Hazards s42A consequential amendment
[15] ECan [316.39]
[16] Fuel Companies [276.5]

Urban Flood Assessment Overlay **Non-Urban Flood Assessment Overlay** ~~**Kaiapoi Fixed Minimum Finished Floor Level Overlay**~~[17] **Coastal Flood Assessment Overlay**[18]	**Activity status: PER** Where: ~~the storage of hazardous substances within any hazardous facility is at, or above the finished floor level established either by the Kaiapoi Fixed Minimum Finished Floor Level Overlay or by a Flood Assessment Certificate issued in accordance with NH-S1, or by a Coastal Flood Assessment Certificate issued in accordance with NH-S2.~~ 1. The underground storage within any hazardous facility; a. is undertaken in accordance with HSNOCOP 44 Below Ground Stationary Container Systems for Petroleum – Design and Installation and HSNOCOP 45 Below Ground Stationary Container Systems for Petroleum – Operation, for matters that pertain to the potential stability and containment of hazardous substances in a flood event; and b. provides protection measures to prevent a release of hazardous substance.[19]	**Activity status when compliance not achieved: RDIS** **Matters of discretion are restricted to:** HS-MD1 - Hazardous substances

[17] Natural Hazards s42A consequential amendment
[18] ECan [316.39]
[19] Fuel Companies [276.5]

HS-R2	Any new major hazard facility or addition to a major hazard facility	
General Industrial Zone **Heavy Industrial Zone**	**Activity status: RDIS** Where: 1. the activity is not located within a SASM or Fault Awareness Overlay; and 2. the activity is not located within a High ~~Flood~~ Hazard Area, ~~High Coastal Flood Hazard Area,~~ [20] or the Ashley Fault Avoidance Overlay. **Matters of discretion are restricted to:** HS-MD1 - Hazardous substances	**Activity status when compliance not achieved with HS-R2 (1): DIS** **Activity status when compliance not achieved with HS-R2 (2): NC**
General Rural Zone	**Activity status: DIS** Where: 3. the activity is not located within any SNA or SASM; and 4. the activity is not located within a Fault Awareness Overlay, the Ashley Fault Avoidance Overlay, ~~a High Flood Hazard Area~~ or a High ~~Coastal Flood~~ [21] Hazard Area.	**Activity status when compliance not achieved: NC**
Rural Lifestyle Zone **Residential Zones** **Commercial and Mixed Use Zones** **Light Industrial Zone** **Open**	**Activity status: NC**	**Activity status when compliance not achieved: N/A**

[20] Natural Hazards s42A consequential amendment
[21] Natural Hazards s42A consequential amendment

Space and Recreation Zones **Special Purpose Zones**		
HS-R3	**Sensitive activity located within a Major Hazard Facility**	
All Zones	**Activity Status: NC**	**Activity status when compliance not achieved: N/A**
	Advisory Note • Sensitive activity within the site of any major hazard facility or within any Risk Management Contour shown on the planning map.	

Advice Note

HS-AN1	Activities and structures may also be subject to controls outside the District Plan. Reference should also be made to any other applicable rules or constraints within other legislation or ownership requirements including the following: 1. There are additional controls for hazardous substances under the HSNO, the HSWA, Health and Safety at Work (Major Hazard Facilities) Regulations 2016, and Health and Safety at Work (Hazardous Substances) Regulations 2017. These are administered by the Environmental Protection Authority and WorkSafe New Zealand; 2. The rules in this chapter are for any residual risk from hazardous substances on human health and the environment that is not controlled through other legislation, or by the Regional Council. Resource consent may also be required from the Regional Council in relation to hazardous substances, under the LWRP and the CARP. The LWRP contains rules for the discharge and storage of hazardous substances including storage near water bodies, bores, community drinking water and faults. The CARP manages the effects of discharges to air on health and sensitive activities; and 3. Resource consent may be required from the District Council under the NESCS, which prescribes the methods that may be used to assess and manage land that is contaminated, or potentially contaminated from an activity or industry on the HAIL. The Regional Council is to be advised when contaminated land is identified. Resource consent may also be required from Regional Council in relation to disturbance of contaminated land.

Matters of Discretion

HS-MD1	**Hazardous substances** 1. QRA of the activity, including use of either the individual fatality risk contour or the maximum credible fatality distance, taking into account features of the site and surrounding environment which may affect the site-specific contour. 2. Proposed mitigation in relation to risk identified by the QRA that are not controlled by other legislation or regional council functions. 3. Any effects relating to natural hazard areas identified in the District Plan, including the extent to which hazardous substances can be safely

	contained to avoid inundation by floodwater or contamination of land or water in the event of a 0.5% AEP flood event for low and medium hazard and a 0.2% AEP flood event for high hazard. 4. The level of risk relating to the nature and volume of the hazardous substance, except where this is controlled by other legislation, including the: a. probability and potential consequences of an accident leading to the loss of control of hazardous substances; b. potential effects on natural ecosystems and life-supporting capacity of land and water from escape or spillage; c. potential risk and effect on sites and areas of significance to Māori as set out in SASM-SCHED1; d. potential risk and effect on the human health and safety, and on neighbouring activities such as residential activities and areas where people congregate, and the amenity values of these areas and activities; e. potential effects on sensitive activities that would be permitted in the zone near a major hazard facility; and f. potential for cumulative adverse effects considering other activities in the surrounding area that store, use, or dispose of hazardous substances. 5. Reverse sensitivity effects from a sensitive activity on the functioning of a major hazard facility. 6. Effects on any sensitive activity from a major hazard facility establishing in that location. 7. The operational need or functional need for a major hazard facility, or sensitive activity to locate in that location. 8. Any positive effects of the major hazard facility.

Appendix B – Comments by the Fuel Companies on the Right of Reply for Hearing Stream 3 – Hazardous Substances

13 September 2023

Waimakariri District Plan – Hearings
Waimakariri District Council

Attention: Jessica Manhire

By e-mail: jessica.manhire@wmk.govt.nz; audrey.benbrook@wmk.govt.nz

Dear Jessica,

RE: COMMENTS BY THE FUEL COMPANIES ON THE RIGHT OF REPLY FOR HEARING STREAM 3 – HAZARDOUS SUBSTANCES

Introduction

1. Thank you for your right of reply on the hazardous substances hearing stream and the opportunity to provide comments on your recommended proposal. The matters relevant to the Fuel Companies submission and evidence is addressed at paragraphs 24 to 42 of your reply.
2. You propose that permitted activity Rule HS-R1 is amended to apply to aboveground hazardous substances storage and use. This is consistent with my evidence presented to the hearing and is supported.
3. Additionally, you propose a new permitted activity Rule HS-R1b for underground hazardous substances storage and use (within the Urban Flood Assessment Overlay, Non- Urban Flood Assessment Overlay and Coastal Flood). Your proposed conditions on this Rule are as follows:

    1. *The underground storage within any hazardous facility:*

        a. *is undertaken in accordance with HSNOCOP 44 Below Ground Stationary Container Systems for Petroleum – Design and Installation and HSNOCOP 45 Below Ground Stationary Containers Systems for Petroleum – Operation; and*

        b. *provides protection measures to contain a spill or release of hazardous substance within a bunded or other secure area.*

Expert planning response on behalf of the Fuel Companies

4. The primary purpose of the above new rule should be to enable the underground storage of hazardous substances while seeking to minimise any risk or effects directly associated with flooding. Therefore, any permitted activity conditions should also directly relate to minimising these flooding effects.

Proposed condition a.

5. Proposed condition a. requires compliance with two industry codes of practice – HSNOCOP 44 and HSNOCOP 45 (herein referred to as the 'codes of practice'). The comment in your s42A report (paragraph 70) is technically correct that the codes of practice are not mandatory. However, the Fuel Companies are required to operate in accordance with HSNO (and other legislation) which informed the development of the codes of practice. As such, the Fuel Companies generally operate in accordance with the codes of practice. On this basis, the principal of condition a. is acceptable, provided it does not duplicate the requirements of other regulators.
6. However, the codes of practice are long and complex, and cover a wide range of matters, much of which is not relevant to managing flood risks. In circumstances where a party is required to demonstrate compliance with the rule conditions, it is not appropriate that this relates to matters

that are beyond the intended scope of the rule. Therefore, compliance with the codes of practice under condition a. should only relate to matters that pertain to the potential stability and containment of hazardous substances in a flood event.

7. In addition, there can be site specific characteristics that mean that strict adherence to the codes of practice may not be practical in all circumstances. For this reason, condition a. should require that works are undertaken in 'general' accordance with the code of practice.

Proposed condition b.

8. The Fuel Companies generally favour underground fuel storage over aboveground storage at its retail sites for operational benefits and to minimise risk. As noted in you right of reply (at paragraph 32), my response to a question from the Hearing Panel was that new underground fuel tank installs are resilient to the effects of flooding.

9. The Fuel Companies are required to, and use, a range of operational measures to prevent the release of hazardous substances. This includes:

   - Secondary containment system (typically double-skinned tanks) with interstitial monitoring of inner and outer tank walls.
   - A leak detection system.
   - Remote fill points with spill containment.
   - Overfill protection sensors.
   - Routine equipment checks and testing, including leak testing.
   - Monitoring and observation wells.
   - A response plan for substance release.
   - A forecourt interceptor and drainage system.

10. The above matters are covered in detail in the codes of practice and are undertaken by the Fuel Companies whether or not the area is subject to flooding. In addition, service stations forecourts are covered by a thick reinforced concrete pad that essentially eliminates any interaction of flood waters with the underground tanks.

11. Proposed condition b. requires bunding (or other similar containment) which typically involves constructing a spill containment 'wall' around a tank to capture any product during a spill. While this may be appropriate for aboveground storage, a bund serves no purpose for underground tanks which are surrounded by fill material and can sometimes be situated in groundwater. As above, the secondary containment system provided by a double skinned tank and other measures listed in paragraph 8 will provide sufficient protection in the event of a spill. For this reason, condition b. of the proposed rule is not necessary as it is impractical as currently worded, and it duplicates matters that would be covered by condition a. At the minimum, the reference in condition b. to "within a bunded or other secure area" should be removed, but my preference is that condition b. is deleted.

Summary and Recommendation

12. For the reasons set out above, it is requested that the proposed new Rule HS-R1b is amended as follows (as shown in red):

    1. *The underground storage within any hazardous facility:*

       a. *is undertaken in general accordance with HSNOCOP 44 Below Ground Stationary Container Systems for Petroleum – Design and Installation and HSNOCOP 45 Below Ground Stationary Containers Systems for Petroleum – Operation, for matters that pertain to the potential stability and containment of hazardous substances in a flood event; and*

       ~~*b. provides protection measures to contain a spill or release of hazardous substance within a bunded or other secure area.*~~

Please get in touch with me if you would like anything in this response clarified, otherwise we would appreciate you passing it onto the Hearing Panel for their consideration. Once again, thank you the opportunity to respond to the matters discussed in your right of reply.

Kind Regards,

Miles Rowe
Principal Planning Consultant
4Sight Consulting Ltd