

Technical Memorandum – Silverdale West Dairy Flat Structure Plan Change

To:	Dave Paul Principal Planner, North, West and Islands Planning Plans and Places
CC:	
Prepared By:	Barton Bauzon (lead) and James Corbett Engineering & Technical Services
Reviewed By:	Simon Court, Manager Closed Landfills & Contaminated Land Response Engineering & Technical Services
Project	Silverdale West Dairy Flat Business Area Structure Plan Change
Date:	12 September 2018

1.0 Executive Summary

This Technical Memorandum has been prepared by Closed Landfills & Contaminated Land Response (CLCLR), at the request of the Plans and Places team, to identify contaminated land issues for consideration in the proposed Silverdale West Dairy Flat Business Area Structure Plan change.

The review of contaminated land information was undertaken primarily utilising information held by Auckland Council, which identified suspected, and confirmed contaminated sites, within the structure plan change area. This means that contamination will need to be considered when site-specific development is undertaken. The potential for remediation and other forms of mitigation will depend on the risks associated with the specific development, which will require site specific contaminated site investigation.

Resource consents may be required to manage contamination risks during development activities, and for ongoing presence of contaminants if these are not remediated to an acceptable regulatory standard.

The review did not identify significant constraints on land development as a result of the potential and confirmed risks associated with contaminated land. However, Plans and Places should consider reverse sensitivity issues arising from potential landfill gas and odour discharges from the Redvale Landfill, both in the short term and long term.

2.0 Scope

The assistance sought by Plans and Places relates to the identification of general contamination issues which may result in human health and environmental effects within the area covered by the structure plan change. This is a roughly 670ha area (Site) identified in the Draft Silverdale West Dairy Flat Business Area Structure Plan Background Report, December 2017 (Figure 1).

The data reviewed is based on information shared by Plans and Places, easily accessible Council records and other public information sources. No site walkovers or environmental testing were undertaken, apart from those completed by others documented in reviewed investigation reports and other similar documents.

This report is prepared expressly for assisting Plans and Places with respect to structure planning process. It is not intended to be used or copied in whole or part for other audiences or purposes without the prior approval of the Manager, Closed Landfills and Contaminated Land Response.

3.0 Related Information

- Email dated 18 April 2018 from Dave Paul to Simon Court.
- Draft Silverdale West Dairy Flat Business Area Structure Plan Background Report, December 2017.
- Silverdale West Ground Contamination Assessment, Tonkin+Taylor for Fulton Hogan Ltd, 11 November 2015.
- Auckland Council selected GeoMaps layers, historical aerial photographs and property records
- Selected Retrolens historical aerial photographs.

4.0 Assessment Methodology

To identify contamination issues, historical information was collected from a variety of sources as listed in 3.0. The review focused on the following key areas:

Based on property records:

- Properties with resource consents that may indicate contamination
- Properties with reported pollution incidents
- Properties with contamination tags

Aerial Photographs:

- Structures or ground features suggesting a HAIL¹ site was/is present

Other data sources

- Specific findings as reported in the 2015 Silverdale West Ground

¹ As per the Ministry for the Environment website, "The Hazardous Activities and Industries List (HAIL) is a compilation of activities and industries that are considered likely to cause land contamination resulting from hazardous substance use, storage or disposal. The HAIL is intended to identify most situations in New Zealand where hazardous substances could cause, and in many cases have caused, land contamination." (<http://www.mfe.govt.nz/land/hazardous-activities-and-industries-list-hail>)

Contamination Assessment report by Tonkin+Taylor

- Typical contamination issues generally associated with particular land uses within the structure plan area.

Each site was allocated a HAIL classification with a brief commentary of issues.

This exercise is a high-level assessment, and further detailed and site-specific investigations are necessary to facilitate land development.

5.0 Findings

The following properties within the Site were identified to have contamination tags in the Council property records:

Address	Property Description	Comments	HAIL Category (refer to Appendix A)
1602A Dairy Flat Highway Dairy Flat 0792	Lot 1 DP 318185	Likely methamphetamine contamination; other potentially hazardous activities or industries may have also occurred	I
123 Wilks Road Dairy Flat 0794	Lot 2 DP 433431	Bus depot, underground storage tanks with anecdotal reports of buried bus bodies and other materials	F8, G3
193 Wilks Road Dairy Flat 0794	Lot 1 DP 433431		

The following resource consent were identified within the Site:

Consent Number	Activity	Consent Holder	Address	Purpose	HAIL Category
42780	Industrial or Trade Process (issued)	Bayes Coachlines Limited	123 Wilks Road Dairy Flat 0794 193 Wilks Road Dairy Flat 0794	To authorise the discharge of contaminants from an industrial or trade activity onto or into land or water from a bus depot.	F7
24010	Dairy Discharge (surrendered)	John James Woolley & Lyn Woolley	Surrendered	To authorise the discharge of farm dairy washwater in accordance with Section 15(1)(a) of the Resource Management Act 1991.	I
30632	Wastewater Discharge (issued)	David Leslie Bayes	Issued	To authorise the discharge of treated domestic wastewater from a commercial facility and residential dwelling to ground soakage in accordance with Section 15 (1)(b) of the Resource Management Act 1991.	I
35292	Discharge Other (issued)	Bayes Coachlines Limited	123 Wilks Road Dairy Flat 0794 193 Wilks Road Dairy Flat 0794	To authorise the discharge of treated wash water from a bus wash facility to a swale drain in accordance with Section 15 (1)(b) of the Resource Management Act 1991.	F7

In 2015, Tonkin+Taylor completed a ground contamination assessment on behalf of Fulton Hogan Ltd covering an areas of the Site own by Fulton Hogan. Specific potentially contaminated areas identified are as follows:

Location	Potential Contamination Issues	Other Comments	HAIL Category
Effluent ponds	Ground contamination from nutrients and pathogens and cleaning chemicals to a lesser degree		I
Offal pits	Ground contamination from pathogens	Offal pits may have been used for dumping other materials	I
Sheds	Ground contamination from storage and handling of chemicals	Less than commercial use of pesticides was reported by Tonkin+Taylor	A11

A review of aerial photographs suggests potential HAIL sites at the following locations other than those identified above:

Address	Property Description	Comments	HAIL Category
1744 and 1748 Dairy Flat Highway Silverdale 0931	Sec 9 SO 308591, Sec 10 SO 308591 Pt Allot 210 Psh Of Okura SO 18072, Sec 19 SO 308591	Industrial area (contaminants dependent on activities), waste stockpiles	A (2, 17, or other) G3
1326 Dairy Flat Highway Dairy Flat 0792	Lot 5 DP 66181	Stockpiles of tyres and other wastes	G3
1412 Dairy Flat Highway Dairy Flat 0792	Lot 2 DP 173067	Horticulture	A10
240 Postman Road Dairy Flat 0794	Lot 1 DP 143891	Horticulture	A10
325 Postman Road Dairy Flat 0794	Lot 2 DP 207711	Horticulture	A10
82 Wilks Road Dairy Flat 0794	Lot 2 DP 141181	Horticulture	A10
1732 Dairy Flat Highway Dairy Flat 0792	Pt Lot 2 DP 68886	Potential fill area	G3
169 Top Road Dairy Flat 0792	Lot 1 DP 138147	Potential fill area	G3
311 Postman Road Dairy Flat 0794	Lot 1 DP 210974	Wastewater treatment products supplier	A (2, 17, or other)

No significant pollution incidents were recorded to have occurred in the area.

Identified potential contaminated sites were also adjacent to the Site are as follows:

Location	Potential Contamination Issues	Other Comments	HAIL Category
Redvale Landfill <i>300m west of the Site</i>	Ground contamination from leachate; air discharges including landfill gas and odour; vermin	Odour complaints have been reported from properties between the landfill and the Site	G3
North Shore Airport <i>Adjacent to the Site</i>	Ground contamination from fuels	Airports may have been subject to use of firefighting chemicals including PFAS, an emerging contaminant that is believed to have human health effects even at low concentrations. Groundwater (ingestion) is generally considered as the primary pathway.	F1
BP Petrol Station <i>Adjacent to the southern tip of the Site</i>	Ground contamination from fuels and other services provided at the site		F7
Kahikatea Flat Industrial Area <i>Adjacent to the west of the Site</i>	Dependent on activities in the area; ground contamination from fuels	Includes a petrol station	A (2, 17, or other) F7 G3
Underground Storage tanks	Ground contamination of substances stored	Contamination tag found in the property record	A (2, or other)

While contamination may have not occurred at the Site, there is potential for migration of contaminants onto the Site from an adjacent source site such as those above.

Apart from specific areas identified above, a number of other activities or industries that could potentially lead to contamination may be expected in the area. However, more comprehensive investigations need to be undertaken to confirm their presence and assess the significance of contamination risks. These activities or industries include but not limited to:

- Farm operations including refueling tanks effluent ponds, offal pits, livestock dips, spray race operations and sheds where chemicals may have been handled or stored
- Informal dumps and waste storage areas
- Stormwater Sediment ponds (e.g. elevated levels of heavy metals)

6.0 Conclusions

Apart from the land in proximity to Redvale Landfill, no significant development constraints have been identified.

A number of suspected and confirmed contaminated sites were identified at the Site and its periphery (Figure 1).

Site specific investigations are required to assess risks at the time of development, and to identify requirements for mitigation measures to reduce risks, appropriate to the proposed development.

Site investigation should also consider potential issues associated with contamination occurring on adjacent or nearby properties which may affect the development site.

The extent of remedial works required to address site specific human health and environmental risks will be dependent on the type and nature of the contamination and the proposed land use.

From a human health perspective, commercial and industrial land can generally be remediated to a lesser standard than land intended to be utilised for parks and reserves, and other more sensitive land uses such as for residential dwellings, school playing fields, playgrounds, or areas for food cultivation.

There are potential risks associated with landfill gas and odour discharges from the Redvale Landfill, so it is appropriate to consider planning controls² such as requirements for project or site-specific gas risk and human health risk assessments for developments in proximity to the landfill.

Landfill gas comprises flammable and toxic gases such as methane and hydrogen sulphide, which at certain concentrations and conditions, could result in explosive atmospheres, asphyxiation or poisoning.

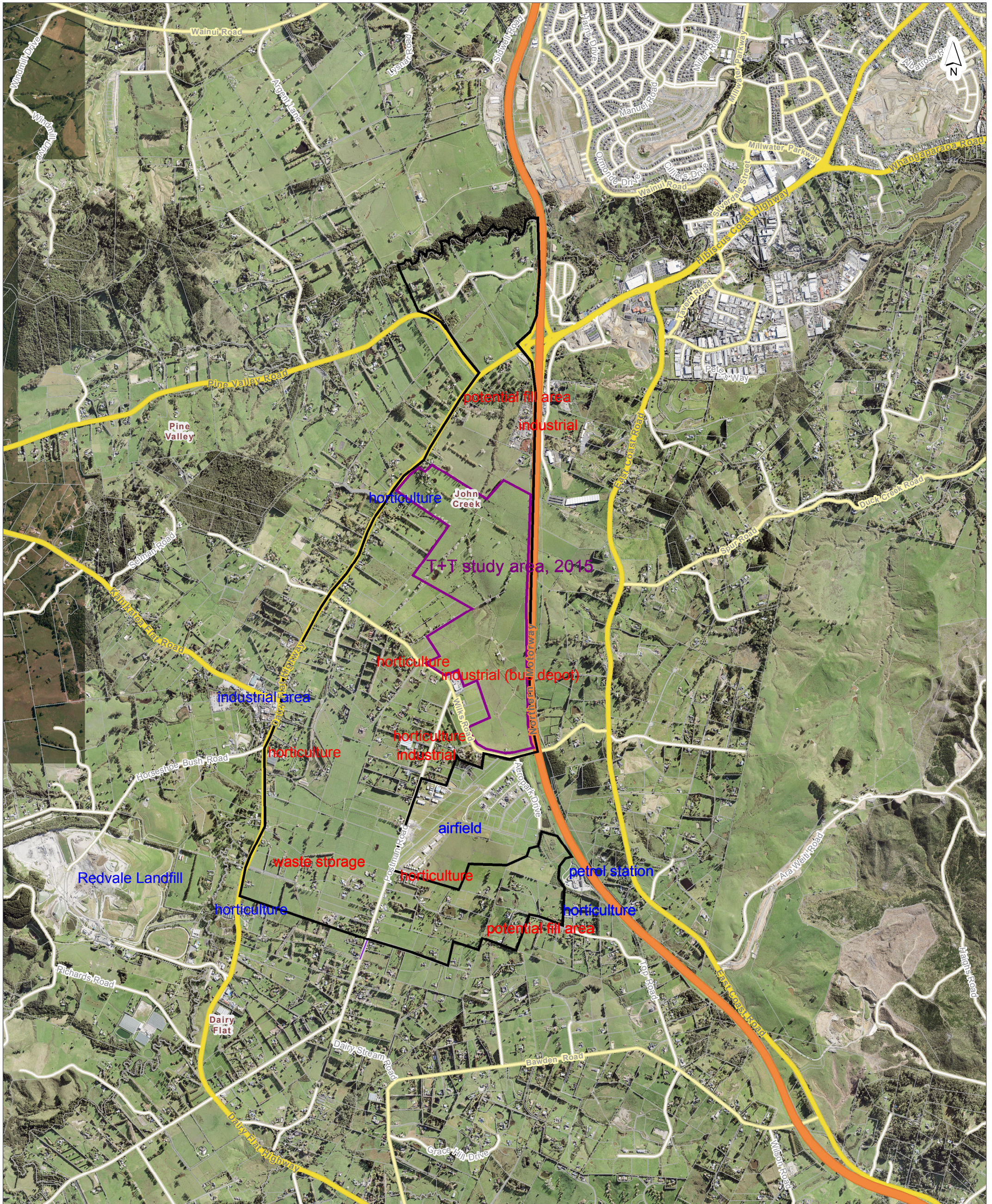
Controls may include restrictions on developments, such as some forms of residential development, and commercial activities such as childcare facilities, where people and buildings may otherwise be exposed to an unacceptable level of risk if no controls or mitigations are provided for.

Further assessment of potential effects of PFAS and potential contaminants on underlying aquifers (if present) may be appropriate if groundwater is considered for potable water supply.

Resource consents may be required to manage contamination risks, including but not limited to:

- Disturbance of contaminated land during development;
- Long term discharge of contaminants into the environment; and,
- The management of (residual) contaminants that may cause human health effects.

² In the absence of applicable New Zealand standards or guidelines the EPA Victoria Best Practice Environmental Management (2015) document is adopted. Landfill gas risk should be considered up to 500m from the landfill footprint. There are no requirements to use this particular document and other international publications may also be applied.



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Silverdale West Dairy Flat Business

A



Scale @ A3
 = 1:25,000

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Appendix A Hazardous Activities and Industries List (HAIL)



Hazardous Activities and Industries List (HAIL)

October 2011

A Chemical manufacture, application and bulk storage

1. Agrichemicals including commercial premises used by spray contractors for filling, storing or washing out tanks for agrichemical application
2. Chemical manufacture, formulation or bulk storage
3. Commercial analytical laboratory sites
4. Corrosives including formulation or bulk storage
5. Dry-cleaning plants including dry-cleaning premises or the bulk storage of dry-cleaning solvents
6. Fertiliser manufacture or bulk storage
7. Gasworks including the manufacture of gas from coal or oil feedstocks
8. Livestock dip or spray race operations
9. Paint manufacture or formulation (excluding retail paint stores)
10. Persistent pesticide bulk storage or use including sport turfs, market gardens, orchards, glass houses or spray sheds
11. Pest control including the premises of commercial pest control operators or any authorities that carry out pest control where bulk storage or preparation of pesticide occurs, including preparation of poisoned baits or filling or washing of tanks for pesticide application
12. Pesticide manufacture (including animal poisons, insecticides, fungicides or herbicides) including the commercial manufacturing, blending, mixing or formulating of pesticides
13. Petroleum or petrochemical industries including a petroleum depot, terminal, blending plant or refinery, or facilities for recovery, reprocessing or recycling petroleum-based materials, or bulk storage of petroleum or petrochemicals above or below ground
14. Pharmaceutical manufacture including the commercial manufacture, blending, mixing or formulation of pharmaceuticals, including animal remedies or the manufacturing of illicit drugs with the potential for environmental discharges
15. Printing including commercial printing using metal type, inks, dyes, or solvents (excluding photocopy shops)
16. Skin or wool processing including a tannery or fellmongery, or any other commercial facility for hide curing, drying, scouring or finishing or storing wool or leather products
17. Storage tanks or drums for fuel, chemicals or liquid waste
18. Wood treatment or preservation including the commercial use of anti-sapstain chemicals during milling, or bulk storage of treated timber outside

B Electrical and electronic works, power generation and transmission

1. Batteries including the commercial assembling, disassembling, manufacturing or recycling of batteries (but excluding retail battery stores)

2. Electrical transformers including the manufacturing, repairing or disposing of electrical transformers or other heavy electrical equipment
3. Electronics including the commercial manufacturing, reconditioning or recycling of computers, televisions and other electronic devices
4. Power stations, substations or switchyards

C Explosives and ordinances production, storage and use

1. Explosive or ordinance production, maintenance, dismantling, disposal, bulk storage or re-packaging
2. Gun clubs or rifle ranges, including clay targets clubs that use lead munitions outdoors
3. Training areas set aside exclusively or primarily for the detonation of explosive ammunition

D Metal extraction, refining and reprocessing, storage and use

1. Abrasive blasting including abrasive blast cleaning (excluding cleaning carried out in fully enclosed booths) or the disposal of abrasive blasting material
2. Foundry operations including the commercial production of metal products by injecting or pouring molten metal into moulds
3. Metal treatment or coating including polishing, anodising, galvanising, pickling, electroplating, or heat treatment or finishing using cyanide compounds
4. Metalliferous ore processing including the chemical or physical extraction of metals, including smelting, refining, fusing or refining metals
5. Engineering workshops with metal fabrication

E Mineral extraction, refining and reprocessing, storage and use

1. Asbestos products manufacture or disposal including sites with buildings containing asbestos products known to be in a deteriorated condition
2. Asphalt or bitumen manufacture or bulk storage (excluding single-use sites used by a mobile asphalt plant)
3. Cement or lime manufacture using a kiln including the storage of wastes from the manufacturing process
4. Commercial concrete manufacture or commercial cement storage
5. Coal or coke yards
6. Hydrocarbon exploration or production including well sites or flare pits
7. Mining industries (excluding gravel extraction) including exposure of faces or release of groundwater containing hazardous contaminants, or the storage of hazardous wastes including waste dumps or dam tailings

F Vehicle refuelling, service and repair

1. Airports including fuel storage, workshops, washdown areas, or fire practice areas
2. Brake lining manufacturers, repairers or recyclers
3. Engine reconditioning workshops
4. Motor vehicle workshops
5. Port activities including dry docks or marine vessel maintenance facilities

6. Railway yards including goods-handling yards, workshops, refuelling facilities or maintenance areas
7. Service stations including retail or commercial refuelling facilities
8. Transport depots or yards including areas used for refuelling or the bulk storage of hazardous substances

G Cemeteries and waste recycling, treatment and disposal

1. Cemeteries
2. Drum or tank reconditioning or recycling
3. Landfill sites
4. Scrap yards including automotive dismantling, wrecking or scrap metal yards
5. Waste disposal to land (excluding where biosolids have been used as soil conditioners)
6. Waste recycling or waste or wastewater treatment

H Any land that has been subject to the migration of hazardous substances from adjacent land in sufficient quantity that it could be a risk to human health or the environment

I Any other land that has been subject to the intentional or accidental release of a hazardous substance in sufficient quantity that it could be a risk to human health or the environment