Appendix A

Significant Drinking Water Threats – Activities

The application of agricultural source material to land.

Ref #	Circumstances	Chemical
5	1. The agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is less than 40% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen
11	1. The agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is at least 40%, but not more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen
13	1. The agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is than 0.5 nutrient units per acre.	Nitrogen
15	1. The agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is at least 0.5 nutrient units per acre but not more than 1.0 nutrient unit per acre.	Nitrogen
17	1. The agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen
The a	pplication of commercial fertilizer to land.	

Ref # Circumstanc	ces
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Ref #	Circumstances	Chemical
23	1. The commercial fertilizer is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is less than 40% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen
29	1. The commercial fertilizer is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is at least 40%, but not more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen
31	1. The commercial fertilizer is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is less than 0.5 nutrient units per acre.	Nitrogen
33	1. The commercial fertilizer is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is at least 0.5 nutrient units per acre but not more than 1.0 nutrient unit per acre.	Nitrogen
35	1. The commercial fertilizer is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen

The application of non-agricultural source material to land.

Ref #	Circumstances	Chemical
41	1. The non-agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is less than 40% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen
47	1. The non-agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is at least 40%, but not more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen
49	1. The non-agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is less than 0.5 nutrient units per acre.	Nitrogen
51	1. The non-agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is at least 0.5 nutrient units per acre but not more than 1.0 nutrient unit per acre.	Nitrogen
53	1. The non-agricultural source material is applied to land located in a vulnerable area, where the managed land map shows a managed land percentage for the applicable area that is more than 80% and the livestock density map shows a livestock density for the applicable area that is sufficient to annually apply agricultural source material at a rate that is more than 1.0 nutrient units per acre.	Nitrogen

The application of pesticide to land.

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71	1. The area of land to which the pesticide is applied is at least 1 hectare, but not more than 10 hectares.	MCPA (2-methyl-4- chlorophenoxyacetic acid)
73		Mecoprop
77	1. The area of land to which the pesticide is applied is more than 10 hectares.	Atrazine
78		Dicamba
79		Dichlorophenoxy Acetic Acid (D-2,4)
80		Dichloropropene-1,3
82		MCPA (2-methyl-4- chlorophenoxyacetic acid)
83		MCPB (4-(4-chloro-2- methylphenoxy)butanoic acid)
84		Месоргор
85		Metalaxyl
86		Metolachlor or s-Metolachlor

Chemical

The application of road salt.

Ref #	Circumstances	Chemical
94	1. The road salt is applied in an area where the percentage of total impervious surface area, as set out on a total impervious surface area map, is 80 percent or more.	Chloride
95		Sodium

<u>The establishment, operation or maintenance of a waste disposal site within</u> the meaning of Part V of the Environmental Protection Act. Threat Subcategory: Application Of Untreated Septage To Land

Ref #	Circumstances	Chemical
100	1. The application of hauled sewage to land. 2. The application area is more than 10 hectares.	Nitrogen
The h	andling and storage of fuel. Threat Subcategory: Handling Of Fuel	
Ref #	Circumstances	Chemical
177	1. The above grade handling of liquid fuel in relation to its storage at a facility as defined in section 1 of O. Reg. 213/01 (Fuel Oil) made under the Technical Standards and Safety Act, 2000 or a facility as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, but not including a bulk plant. 2. The quantity of liquid fuel stored is more than 2,500 litres.	BTEX
178		Petroleum Hydrocarbons F1 (nC6- nC10)
182	1. The below grade handling of liquid fuel in relation to its storage at a bulk plant as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, or a facilit that manufacturers or refines fuel. 2. The quantity of liquid fuel stored is more than 2,500 litres.	7 BTEX
183		Petroleum Hydrocarbons F1 (nC6- nC10)

The h	andling and storage of fuel.	Threat Subcategory: Handling Of Fuel	
Ref #	Circumstances		Chemical
187	1. The below grade handling of liquid fuel in relation to its storage at a facility as defined in section 1 defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety	of O. Reg. 213/01 (Fuel Oil) made under the Technical Standards and Safety Act, 2000 or a facility as Act, 2000, but not including a bulk plant. 2. The quantity of liquid fuel stored is more than 2,500 litres.	BTEX
188			Petroleum Hydrocarbons F1 (nC6- nC10)
The n	nanagement of runoff that contains chemicals used in the de-icing of		
<u>aircra</u>	<u>aft.</u>		
Ref #	Circumstances		Chemical
198	1.Runoff containing de-icing materials may discharge from to land or water. 2.The runoff originates a	at a national airport.	Dioxane-1,4
199			Ethylene Glycol
<u>The u</u> confi	se of land as livestock grazing or pasturing land, an outdoor nement area or a farm-animal yard. O. Reg. 385/08, s. 3.	Threat Subcategory: Management Or Handling Of Agricultural Source Mar Source Material (ASM) Generation (Grazing and pasturing)	terial - Agricultural
Ref #	Circumstances		Chemical
204	1. The use of land as livestock grazing or pasturing land. 2. The number of nutrient units generated in sufficient to generate nutrients at an annual rate that is more than 1 nutrient unit per acre.	the farm unit divided by the number of acres of land that is used for livestock grazing or pasturing land is	Nitrogen
<u>The u</u> confin	<u>se of land as livestock grazing or pasturing land, an outdoor</u> nement area or a farm-animal yard. O. Reg. 385/08, s. 3.	Threat Subcategory: Management Or Handling Of Agricultural Source Mar Source Material (ASM) Generation (Yards or confinement)	terial - Agricultural
Ref #	Circumstances		Chemical
210	1. The use of land as an outdoor confinement area or a farm-animal yard. 2. The number of animals conducted nutrient units per hectares of the area annually.	nfined in the area at any time is sufficient to generate agricultural source material at a rate of more than 300	Nitrogen
The e	stablishment, operation or maintenance of a system that collects, stores,	Threat Subcategory: Sewage System Or Sewage Works - Discharge Of Untr	eated Stormwater From
trans	mits, treats or disposes of sewage.	A Stormwater Retention Pond	
Ref #	Circumstances		Chemical
335	1. The system is a storm water management facility designed to discharge storm water to land or surface hectares and the predominant land uses in the area are rural, agricultural, or low density residential.	ace water. 2. The drainage area associated with the storm water management facility is more than 100	Arsenic or one or more of its compounds containing Arsenic
338			Chromium VI
342			Mecoprop
411	1. The system is a storm water management facility designed to discharge storm water to land or surface hectares and the predominant land use in the area is high density residential land use.	ace water. 2. The drainage area associated with the storm water management facility is more than 100	Arsenic or one or more of its compounds containing Arsenic
412			Cadmium or one or more of its compounds containing Cadmium
414			Chromium VI
417			Lead or one or more of its

The establishment, operation or maintenance of a system that collects, stores,
transmits, treats or disposes of sewage.Threat Subcategory: Sewage System Or Sewage Works - Discharge Of Untreated Stormwater From
A Stormwater Retention Pond

Ref #	Circumstances	Chemical
418		Mecoprop
419		Mercury or one or more of its compounds containing Mercury
421		Nitrogen
468	1. The system is a storm water management facility designed to discharge storm water to land or surface water. 2. The drainage area associated with the storm water management facility is more than 10 but not more than 100 hectares and the predominant land uses in the area are industrial or commercial.	Arsenic or one or more of its compounds containing Arsenic
471		Chromium VI
475		Mecoprop
486	1. The system is a storm water management facility designed to discharge storm water to land or surface water. 2. The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land uses in the area are industrial or commercial.	Aluminum or one or more of its compounds containing Aluminum
487		Arsenic or one or more of its compounds containing Arsenic
488		Cadmium or one or more of its compounds containing Cadmium
489		Chloride
490		Chromium VI
493		Lead or one or more of its compounds containing Lead
494		Mecoprop
495		Mercury or one or more of its compounds containing Mercury
496		Nickel or one or more of its compounds containing Nickel
497		Nitrogen
498		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
499		Petroleum Hydrocarbons F1 (nC6- nC10)

<u>The establishment, operation or maintenance of a system that collects, stores</u>, Threat Subcategory: Sewage System Or Sewage Works - Sanitary Sewers and related pipes <u>transmits, treats or disposes of sewage</u>.

Ref #	Circumstances	Chemical
669	1. The system is part of a wastewater collection facility that collects or transmits sewage containing human waste, but does not include a sewage storage tank or a designed bypass. 2. The system is designed to convey more than 10,000, but not more than 100,000 cubic metres of sewage per day.	BTEX
670		Cadmium or one or more of its compounds containing Cadmium

<u>The establishment, operation or maintenance of a system that collects, stores</u>, Threat Subcategory: Sewage System Or Sewage Works - Sanitary Sewers and related pipes transmits, treats or disposes of sewage.

Ref #	Circumstances	Chemical
673		Hexachlorobenzene
674		Lead or one or more of its compounds containing Lead
675		Mercury or one or more of its compounds containing Mercury
676		Nitrogen
677		one or more Polychlorinated Biphenyls (PCBs)
678		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
682	1. The system is part of a wastewater collection facility that collects or transmits sewage containing human waste, but does not include a sewage storage tank or a designed bypass. 2. The system is designed to convey more than 100,000 cubic metres of sewage per day.	BTEX
683		Cadmium or one or more of its compounds containing Cadmium
684		Copper or one or more of its compounds containing Copper
685		Dichlorobenzidine-3,3'
686		Hexachlorobenzene
687		Lead or one or more of its compounds containing Lead
688		Mercury or one or more of its compounds containing Mercury
689		Nitrogen
690		one or more Polychlorinated Biphenyls (PCBs)
691		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
692		Pentachlorophenol
694		Zinc or one or more of its compounds containing Zinc
The e	stablishment, operation or maintenance of a system that collects, stores, Threat Subcategory: Sewage System Or Sewage Works - Septic System	

transmits, treats or disposes of sewage.

Ref #	Circumstances	Chemical
701	1. The system is an earth pit privy, privy vault, greywater system, cesspool, or a leaching bed system and its associated treatment unit. 2. The system is a sewage works within the meaning of the Ontario Water Resources Act.	Acetone
702		Chloride

The establishment, operation or maintenance of a system that collects, stores, Threat Subcategory: Sewage System Or Sewage Works - Septic System transmits, treats or disposes of sewage.

Ref #	Circumstances	Chemical
703		Dichlorobenzene-1,4 (para)
704		Nitrogen
706		Sodium

The establishment, operation or maintenance of a system that collects, stores, Threat Subcategory: Sewage System Or Sewage Works - Septic System Holding Tank transmits, treats or disposes of sewage.

Rof # Circumstances

Ref #	Circumstances	Chemical
707	1. The system requires or uses a holding tank for the retention of hauled sewage at the site where it is produced before its collection by a hauled sewage system. 2. The system is subject to the Ontario Building Code Act, 1992.	Acetone
708		Chloride
709		Dichlorobenzene-1,4 (para)
710		Nitrogen
712		Sodium
713	1. The system requires or uses a holding tank for the retention of hauled sewage at the site where it is produced before its collection by a hauled sewage system. 2. The system is a sewage works within the meaning of the Ontario Water Resources Act.	Acetone
714		Chloride
715		Dichlorobenzene-1,4 (para)
716		Nitrogen
718		Sodium

The establishment, operation or maintenance of a system that collects, stores, Threat Subcategory: Sewage System Or Sewage Works - Sewage Treatment Plant Effluent Discharges transmits, treats or disposes of sewage. (Includes Lagoons)

Ref #	Circumstances	Chemical
856	1. The system is a wastewater treatment facility that discharges directly to land or surface water through a means other than a designed bypass. 2. The system is designed to discharge treated sanitary sewage at average daily rate that is more than 17,500 but not more than 50,000 cubic metres on an annual basis.	Antimony or one or more of its compounds containing Antimony
857		Arsenic or one or more of its compounds containing Arsenic
862		Chromium VI
871		MCPA (2-methyl-4- chlorophenoxyacetic acid)
880	1. The system is a wastewater treatment facility that discharges directly to land or surface water through a means other than a designed bypass. 2. The system is designed to discharge treated sanitary sewage at average daily rate that is more than 50,000 cubic metres on an annual basis.	Antimony or one or more of its compounds containing Antimony
881		Arsenic or one or more of its compounds containing Arsenic
882		Barium

Ref # Circumstances	Chemical
883	BTEX
884	Cadmium or one or more of its compounds containing Cadmium
885	Chlorophenol-2
886	Chromium VI
888	Cyanide (CN-)
890	Dichlorobenzene-1,2 (ortho)
891	Dichlorobenzene-1,4 (para)
892	Dichlorophenol-2,4
893	Ethylene Glycol
894	Lead or one or more of its compounds containing Lead
895	MCPA (2-methyl-4- chlorophenoxyacetic acid)
896	Mercury or one or more of its compounds containing Mercury
897	Nickel or one or more of its compounds containing Nickel
898	Nitrogen
899	Nitrosodimethylamine-N (NDMA)
900	Phenol (or its salts)
902	Silver or one or more of its compounds containing Silver
The establishment, operation or maintenance of a system that collects, stores,	Threat Subcategory: Sewage System Or Sewage Works - Storage Of Sewage (E.G. Treatment Plant
transmits, treats or disposes of sewage.	Tanks)

The establishment, operation or maintenance of a system that collects, stores,
transmits, treats or disposes of sewage.Threat Subcategory: Sewage System Or Sewage Works - Sewage Treatment Plant Effluent Discharges
(Includes Lagoons)

Ref #	Circumstances	Chemical
1005	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste and is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 2,500 but not more than 17,500 cubic metres on an annual basis.	Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1018	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste, and a part of the tank, but not all, is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 2,500 but not more than 17,500 cubic metres on an annual basis.	
1033	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste and is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 17,500 but not more than 50,000 cubic metres on an annual basis.	BTEX

trans	mits, treats or disposes of sewage. Tanks)	`
Ref #	Circumstances	Chemical
1034		Cadmium or one or more of its compounds containing Cadmium
1036		Hexachlorobenzene
1037		Lead or one or more of its compounds containing Lead
1038		Mercury or one or more of its compounds containing Mercury
1039		Nitrogen
1040		Nitrosodimethylamine-N (NDMA)
1041		one or more Polychlorinated Biphenyls (PCBs)
1043		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1044		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1046	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste, and a part of the tank, but not all, is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 17,500 but not more than 50,000 cubic metres on an annual basis.	BTEX
1047		Cadmium or one or more of its compounds containing Cadmium
1049		Hexachlorobenzene
1050		Lead or one or more of its compounds containing Lead
1051		Mercury or one or more of its compounds containing Mercury
1052		Nitrogen
1053		Nitrosodimethylamine-N (NDMA)
1054		one or more Polychlorinated Biphenyls (PCBs)
1056		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1057		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1070	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste and is at or above grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 50,000 cubic metres on an annual basis.	Vinyl chloride or another DNAPL that could degrade to vinyl chloride

The establishment, operation or maintenance of a system that collects, stores, Threat Subcategory: Sewage System Or Sewage Works - Storage Of Sewage (E.G. Treatment Plant

<u>The establishment, operation or maintenance of a system that collects, stores,</u> <u>transmits, treats or disposes of sewage.</u> Threat Subcategory: Sewage System Or Sewage Works - Storage Of Sewage (E.G. Treatment Plant Tanks)

Ref #	Circumstances	Chemical
1072	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste and is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 50,000 cubic metres on an annual basis.	BTEX
1073		Cadmium or one or more of its compounds containing Cadmium
1074		Copper or one or more of its compounds containing Copper
1075		Hexachlorobenzene
1076		Lead or one or more of its compounds containing Lead
1077		Mercury or one or more of its compounds containing Mercury
1078		Nitrogen
1079		Nitrosodimethylamine-N (NDMA)
1080		one or more Polychlorinated Biphenyls (PCBs)
1081		Pentachlorophenol
1082		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1083		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1084		Zinc or one or more of its compounds containing Zinc
1085	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste, and a part of the tank, but not all, is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 50,000 cubic metres on an annual basis.	BTEX
1086		Cadmium or one or more of its compounds containing Cadmium
1087		Copper or one or more of its compounds containing Copper
1088		Hexachlorobenzene
1089		Lead or one or more of its compounds containing Lead
1090		Mercury or one or more of its compounds containing Mercury
1091		Nitrogen
1092		Nitrosodimethylamine-N (NDMA)

The establishment, operation or maintenance of a system that collects, stores, transmits, treats or disposes of sewage. Threat Subcategory: Sewage System Or Sewage Works - Storage Of Sewage (E.G. Treatment Plant Tanks)

Ref #	Circumstances	Chemical
1093		one or more Polychlorinated Biphenyls (PCBs)
1094		Pentachlorophenol
1095		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1096		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1097		Zinc or one or more of its compounds containing Zinc
<u>The h</u>	andling and storage of pesticide. Threat Subcategory: Storage Of A Pesticide	
Ref #	Circumstances	Chemical
1173	1.A pesticide is stored for retail sale or for use in extermination within the meaning of the Pesticides Act. 2. The total mass of all materials stored that contain the pesticide, in any form including liquid or solid, is more than 250 but not more than 2,500 kilograms.	MCPA (2-methyl-4- chlorophenoxyacetic acid)
1175		Mecoprop
1184	1.A pesticide is stored at a facility where it is manufactured or processed, or from which it is wholesaled, excluding storage related solely to retail sale or for use in extermination within the meaning of the Pesticides Act. 2.The total mass of all materials stored that contain the pesticide, in any form including liquid or solid, is more than 2,500 kilograms.	MCPA (2-methyl-4- chlorophenoxyacetic acid)
1186		Mecoprop
1190	1.A pesticide is stored for retail sale or for use in extermination within the meaning of the Pesticides Act. 2. The total mass of all materials stored that contain the pesticide, in any form including liquid or solid, is more than 2,500 kilograms.	Atrazine
1191		Dicamba
1192		Dichlorophenoxy Acetic Acid (D-2,4)
1193		Dichloropropene-1,3
1195		MCPA (2-methyl-4- chlorophenoxyacetic acid)
1196		MCPB (4-(4-chloro-2- methylphenoxy)butanoic acid)
1197		Месоргор
1198		Metalaxyl
1199		Metolachlor or s-Metolachlor

The storage of agricultural source material.

Ref #	Circumstances	Chemical
1213	1. The agricultural source material is stored below grade in or on a permanent nutrient storage facility. 2. The weight or volume of manure stored annually on a farm unit is sufficient to annually land apply agricultural source material at a rate that is more than 0.5, but not more than 1.0 nutrient unit per acre of the farm units.	Nitrogen

The storage of agricultural source material.

Ref #	Circumstances	Chemical
1215	1.A portion, but not all, of the agricultural source material is stored above grade in or on a permanent nutrient storage facility. 2. The weight or volume of manure stored annually on a farm unit is sufficient to annually land apply agricultural source material at a rate that is more than 0.5, but not more than 1.0 nutrient unit per acre of the farm units.	
1217	1. The agricultural source material is stored at or above grade in or on a permanent nutrient storage facility. 2. The weight or volume of manure stored annually on a farm unit is sufficient to annually land apply agricultural source material at a rate that is more than 1.0 nutrient unit per acre of the farm units.	Nitrogen
1219	1. The agricultural source material is stored at or above grade on a temporary field nutrient storage site. 2. The weight or volume of manure stored annually on a farm unit is sufficient to annually land apply agricultural source material at a rate that is more than 1.0 nutrient unit per acre of the farm units.	
1221	1. The agricultural source material is stored below grade in or on a permanent nutrient storage facility. 2. The weight or volume of manure stored annually on a farm unit is sufficient to annually land apply agricultural source material at a rate that is more than 1.0 nutrient unit per acre of the farm units.	
1223	1.A portion, but not all, of the agricultural source material is stored above grade in or on a permanent nutrient storage facility. 2. The weight or volume of manure stored annually on a farm unit is sufficient to annually land apply agricultural source material at a rate that is more than 1.0 nutrient unit per acre of the farm units.	
The l	andling and storage of an organic solvent. Threat Subcategory: Storage Of An Organic Solvent	
Ref #	Circumstances	Chemical
1241	1. The organic solvent is stored in a container that is located below grade. 2. The quantity of organic solvent stored is more than 25, but not more than 250 litres.	Carbon Tetrachloride
1245	1. The organic solvent is stored in a container a part of which, but not all, is below grade. 2. The quantity of organic solvent stored is more than 25, but not more than 250 litres.	
1249	1. The organic solvent is stored in a container at or above grade. 2. The quantity of organic solvent stored is more than 250, but not more than 2,500 litres.	Carbon Tetrachloride
1253	1. The organic solvent is stored in a container that is located below grade. 2. The quantity of organic solvent stored is more than 250, but not more than 2,500 litres.	
1254		Chloroform
1255		Methylene Chloride (Dichloromethane)
1257	1. The organic solvent is stored in a container a part of which, but not all, is below grade. 2. The quantity of organic solvent stored is more than 250, but not more than 2,500 litres.	Carbon Tetrachloride
1258		Chloroform
1259		Methylene Chloride (Dichloromethane)
1261	1. The organic solvent is stored in a container at or above grade. 2. The quantity of organic solvent stored is more than 2,500 litres.	Carbon Tetrachloride
1262		Chloroform
1263		Methylene Chloride (Dichloromethane)
1265	1. The organic solvent is stored in a container that is located below grade. 2. The quantity of organic solvent stored is more than 2,500 litres.	Carbon Tetrachloride
1266		Chloroform
1267		Methylene Chloride (Dichloromethane)
1268		Pentachlorophenol
1269	1. The organic solvent is stored in a container a part of which, but not all, is below grade. 2. The quantity of organic solvent stored is more than 2,500 litres.	Carbon Tetrachloride
1270		Chloroform

The l	handling and storage of an organic solvent. Threat S	ıbcategory: Storage Of An Organic Solvent	
Ref #	# Circumstances		Chemical
1271			Methylene Chloride (Dichloromethane)
1272			Pentachlorophenol
The l	handling and storage of commercial fertilizer. Threat S	ubcategory: Storage Of Commercial Fertilizer	
Ref #	# Circumstances		Chemical
1287	1.The commercial fertilizer is stored for retail sale or in relation to its application. 2.The total mass of all materials 2,500 kilograms.	tored that contain the commercial fertilizer, in any form including liquid or solid, is more than	Nitrogen
The l	handling and storage of fuel. Threat S	ibcategory: Storage Of Fuel	
Ref #	# Circumstances		Chemical
1359	1.The storage of liquid fuel in a tank below grade and at a facility as defined in section 1 of O. Reg. 213/01 (Fuel O 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, but not including a b litres.	l) made under the Technical Standards and Safety Act, 2000 or a facility as defined in section ilk plant. 2. The fuel is stored in a quantity that is more than 250, but not more than 2,500	BTEX
1360			Petroleum Hydrocarbons F1 (nC6- nC10)
1364	1. The storage of liquid fuel in a tank below grade at a bulk plant as defined in section 1 of O. Reg. 217/01 (Liquid F manufacturers or refines fuel. 2. The fuel is stored in a quantity that is more than 250, but not more than 2,500 litres.	uels) made under the Technical Standards and Safety Act, 2000, or a facility that	BTEX
1365			Petroleum Hydrocarbons F1 (nC6- nC10)
1369	1. The storage of liquid fuel in a tank, a part of which, but not all, is below grade at a facility as defined in section 1 facility as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Ac but not more than 2,500 litres.	of O. Reg. 213/01 (Fuel Oil) made under the Technical Standards and Safety Act, 2000 or a , 2000, but not including a bulk plant. 2. The fuel is stored in a quantity that is more than 250,	BTEX
1370			Petroleum Hydrocarbons F1 (nC6- nC10)
1374	1. The storage of liquid fuel in a tank, a part of which, but not all, is below grade and at a bulk plant as defined in se 2000, or a facility that manufacturers or refines fuel. 2. The fuel is stored in a quantity that is more than 250, but not	tion 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, more than 2,500 litres.	BTEX
1375			Petroleum Hydrocarbons F1 (nC6- nC10)
1384	1.The storage of liquid fuel in a tank at or above grade at a facility as defined in section 1 of O. Reg. 213/01 (Fuel C section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, but not include	il) made under the Technical Standards and Safety Act, 2000 or a facility as defined in ling a bulk plant. 2. The fuel is stored in a quantity that is more than 2,500 litres.	BTEX
1385			Petroleum Hydrocarbons F1 (nC6- nC10)
1389	1.The storage of liquid fuel in a tank below grade and at a facility as defined in section 1 of O. Reg. 213/01 (Fuel O 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, but not including a b	l) made under the Technical Standards and Safety Act, 2000 or a facility as defined in section ilk plant. 2. The fuel is stored in a quantity that is more than 2,500 litres.	BTEX
1390			Petroleum Hydrocarbons F1 (nC6- nC10)
1391			Petroleum Hydrocarbons F4 (>nC34)
1392			Petroleum Hydrocarbons F2 (>nC10- nC16)

The h	andling and storage of fuel. Threat Subcategory: Storage Of Fuel	
Ref #	Circumstances	Chemical
1393		Petroleum Hydrocarbons F3 (>nC16- nC34)
1394	1. The storage of liquid fuel in a tank below grade at a bulk plant as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, or a facility that manufacturers or refines fuel. 2. The fuel is stored in a quantity that is more than 2,500 litres.	BTEX
1395		Petroleum Hydrocarbons F1 (nC6- nC10)
1396		Petroleum Hydrocarbons F4 (>nC34)
1397		Petroleum Hydrocarbons F2 (>nC10- nC16)
1398		Petroleum Hydrocarbons F3 (>nC16- nC34)
1399	1. The storage of liquid fuel in a tank, a part of which, but not all, is below grade at a facility as defined in section 1 of O. Reg. 213/01 (Fuel Oil) made under the Technical Standards and Safety Act, 2000 or a facility as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, but not including a bulk plant. 2. The fuel is stored in a quantity that is more than 2,500 litres.	BTEX
1400		Petroleum Hydrocarbons F1 (nC6- nC10)
1401		Petroleum Hydrocarbons F4 (>nC34)
1402		Petroleum Hydrocarbons F2 (>nC10- nC16)
1403		Petroleum Hydrocarbons F3 (>nC16- nC34)
1404	1. The storage of liquid fuel in a tank, a part of which, but not all, is below grade and at a bulk plant as defined in section 1 of O. Reg. 217/01 (Liquid Fuels) made under the Technical Standards and Safety Act, 2000, or a facility that manufacturers or refines fuel. 2. The fuel is stored in a quantity that is more than 2,500 litres.	BTEX
1405		Petroleum Hydrocarbons F1 (nC6- nC10)
1406		Petroleum Hydrocarbons F4 (>nC34)
1407		Petroleum Hydrocarbons F2 (>nC10- nC16)
1408		Petroleum Hydrocarbons F3 (>nC16- nC34)
The h	andling and storage of non-agricultural source material. Threat Subcategory: Storage of Non-Agricultural Source Material (NASM)	
Ref #	Circumstances	Chemical
1421	1. The non-agricultural source material is stored below grade in or on a permanent nutrient storage facility. 2. The mass of nitrogen in the non-agricultural source material stored is at least 0.5 tonnes but not more than 5 tonnes.	Nitrogen
1423	1.A portion, but not all, of the non-agricultural source material is stored above grade in or on a permanent nutrient storage facility. 2. The mass of nitrogen in the non-agricultural source material stored is at least 0.5 tonnes but not more than 5 tonnes.	
1425	1. The non-agricultural source material is stored at or above grade in or on a permanent nutrient storage facility. 2. The mass of nitrogen in the non-agricultural source material stored is more than 5 tonnes.	Nitrogen

1. The non-agricultural source material is stored at or above grade in or on a permanent nutrient storage facility. 2. The mass of nitrogen in the non-agricultural source material stored is more than 5 tonnes. 1425

1427 1. The non-agricultural source material is stored at or above grade on a temporary field nutrient storage site. 2. The mass of nitrogen in the non-agricultural source material stored is more than 5 tonnes.

The l	nandling and storage of non-agricultural source material. Threat Subcategory: Storage of Non-Agricultural Source Material (NASM)	
Ref #	Circumstances	Chemical
1429	1. The non-agricultural source material is stored below grade in or on a permanent nutrient storage facility. 2. The mass of nitrogen in the non-agricultural source material stored is more than 5 tonnes.	
1431	1.A portion, but not all, of the non-agricultural source material is stored above grade in or on a permanent nutrient storage facility. 2. The mass of nitrogen in the non-agricultural source material stored is more than 5 tonnes.	
The l	nandling and storage of road salt.	
Ref #	Circumstances	Chemical
1441	1. The storage of road salt in a manner that may result in its exposure to precipitation or runoff from precipitation or snow melt. 2. The quantity stored is more than 5,000 tonnes.	Chloride
1442		Sodium
The s	torage of snow.	
Ref #	Circumstances	Chemical
1459	1. The snow is stored below grade. 2. The area upon which snow is stored is at least 0.01, but not more than 0.5 hectares.	Lead or one or more of its compounds containing Lead
1460		Nitrogen
1478	1. The snow is stored below grade. 2. The area upon which snow is stored is more than 0.5, but not more than 1 hectares.	Chloride
1480		Cyanide (CN-)
1481		Lead or one or more of its compounds containing Lead
1482		Nitrogen
1483		Petroleum Hydrocarbons F1 (nC6- nC10)
1487		Sodium
1492	1. The snow is stored at or above grade. 2. The area upon which snow is stored is more than 1, but not more than 5 hectares.	Lead or one or more of its compounds containing Lead
1493		Nitrogen
1500	1. The snow is stored below grade. 2. The area upon which snow is stored is more than 1, but not more than 5 hectares.	Chloride
1501		Copper or one or more of its compounds containing Copper
1502		Cyanide (CN-)
1503		Lead or one or more of its compounds containing Lead
1504		Nitrogen
1505		Petroleum Hydrocarbons F1 (nC6-nC10)
1506		Petroleum Hydrocarbons F4 (>nC34)

The storage of snow.

Ref #	Circumstances	Chemical
1507		Petroleum Hydrocarbons F2 (>nC10- nC16)
1508		Petroleum Hydrocarbons F3 (>nC16- nC34)
1509		Sodium
1510		Zinc or one or more of its compounds containing Zinc
1511	1. The snow is stored at or above grade. 2. The area upon which snow is stored is more than 5 hectares.	Chloride
1513		Cyanide (CN-)
1514		Lead or one or more of its compounds containing Lead
1515		Nitrogen
1516		Petroleum Hydrocarbons F1 (nC6- nC10)
1520		Sodium
1522	1. The snow is stored below grade. 2. The area upon which snow is stored is more than 5 hectares.	Chloride
1523		Copper or one or more of its compounds containing Copper
1524		Cyanide (CN-)
1525		Lead or one or more of its compounds containing Lead
1526		Nitrogen
1527		Petroleum Hydrocarbons F1 (nC6- nC10)
1528		Petroleum Hydrocarbons F4 (>nC34)
1529		Petroleum Hydrocarbons F2 (>nC10- nC16)
1530		Petroleum Hydrocarbons F3 (>nC16- nC34)
1531		Sodium
1532		Zinc or one or more of its compounds containing Zinc
The e	stablishment, operation or maintenance of a waste disposal site within Threat Subcategory: Storage, Treatmer	nt And Discharge Of Tailings From Mines

the meaning of Part V of the Environmental Protection Act.

Ref # Circumstances

Chemical

Ref # Circumstances

Chemical

1533	1. Tailings from mining operations are stored in a pit. 2. The site is not part of a facility for which the NPRI Notice requires a person to report.	Arsenic or one or more of its compounds containing Arsenic
1534		Cadmium or one or more of its compounds containing Cadmium
1535		Chromium VI
1538		Lead or one or more of its compounds containing Lead
1539		Mercury or one or more of its compounds containing Mercury
1541		Nitrogen
1559	1. Tailings from mining operations are stored in a pit. 2. The site is part of a facility for which the NPRI Notice requires a person to report and the report must include information in relation to a substance listed in Group 1, 2, 3 or 4 of Part 1 of Schedule 1 or Part 2 of Schedule 1 of the notice.	Arsenic or one or more of its compounds containing Arsenic
1560		Cadmium or one or more of its compounds containing Cadmium
1561		Chromium VI
1562		Copper or one or more of its compounds containing Copper
1563		Cyanide (CN-)
1564		Lead or one or more of its compounds containing Lead
1565		Mercury or one or more of its compounds containing Mercury
1566		Nickel or one or more of its compounds containing Nickel
1567		Nitrogen
1569		Silver or one or more of its compounds containing Silver
1570		Sulphide (Hydrogen)
1571		Zinc or one or more of its compounds containing Zinc
1572	1. Tailings from mining operations are stored using an impoundment structure located on the surface. 2. The site is part of a facility for which the NPRI Notice requires a person to report and the report must include information in relation to a substance listed in Group 1, 2, 3 or 4 of Part 1 of Schedule 1 or Part 2 of Schedule 1 of the notice.	Arsenic or one or more of its compounds containing Arsenic
1574		Chromium VI
The e	stablishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - Landfarming Of Petroleum Refined	ning Waste

the meaning of Part V of the Environmental Protection Act.

Ref # Circumstances

Chemical

Ref #	Circumstances	Chemical
1597	1. The land disposal of petroleum refining waste within the meaning of clause (d) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) R.R.O. 1990 made under the Environmental Protection Act, is undertaken at the site. 2. The area where the land disposal is undertaken is more than 10 hectares.	BTEX
1598		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
1599		Petroleum Hydrocarbons F1 (nC6- nC10)
<u>The e</u> the m	stablishment, operation or maintenance of a waste disposal site within and the stable of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Landfilling (Hazardous Waste)	
Ref #	Circumstances	Chemical
1603	1. The land disposal of hazardous waste, liquid industrial waste, or processed liquid industrial waste, within the meaning of clauses (a) and (b) of the definition of "land disposal" in section 1 of Regulation 347, R.R.O. 1990 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is less than 1 hectare.	Arsenic or one or more of its compounds containing Arsenic
1606		Chromium VI
1614		Uranium
1615	1. The land disposal of hazardous waste, liquid industrial waste, or processed liquid industrial waste, within the meaning of clauses (a) and (b) of the definition of "land disposal" in section 1 of Regulation 347, R.R.O. 1990 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is at least 1 but not more than 10 hectares.	Arsenic or one or more of its compounds containing Arsenic
1616		Barium
1617		Cadmium or one or more of its compounds containing Cadmium
1618		Chromium VI
1619		Dichlorophenoxy Acetic Acid (D-2,4)
1620		Lead or one or more of its compounds containing Lead
1621		Mercury or one or more of its compounds containing Mercury
1622		one or more Polychlorinated Biphenyls (PCBs)
1623		Selenium or one or more of its compounds containing Selenium
1624		Silver or one or more of its compounds containing Silver
1625		Trichlorophenoxyacetic acid-2,4,5
1626		Uranium
1627	1. The land disposal of hazardous waste, liquid industrial waste, or processed liquid industrial waste, within the meaning of clauses (a) and (b) of the definition of "land disposal" in section 1 of Regulation 347, R.R.O. 1990 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is more than 10 hectares.	Arsenic or one or more of its compounds containing Arsenic
1628		Barium
1629		Cadmium or one or more of its compounds containing Cadmium

<u>The establishment, operation or maintenance of a waste disposal site within</u> the meaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Landfilling (Hazardous Waste)

Ref #	Circumstances	Chemical
1630		Chromium VI
1631		Dichlorophenoxy Acetic Acid (D-2,4)
1632		Lead or one or more of its compounds containing Lead
1633		Mercury or one or more of its compounds containing Mercury
1634		one or more Polychlorinated Biphenyls (PCBs)
1635		Selenium or one or more of its compounds containing Selenium
1636		Silver or one or more of its
		compounds containing Silver
1637		Trichlorophenoxyacetic acid-2,4,5
1638		Uranium
<u>The es</u> the m	stablishment, operation or maintenance of a waste disposal site within eaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Landfilling (Municipal Waste)	
Ref #	Circumstances	Chemical
1639	1. The land disposal of municipal waste, within the meaning of clauses (a) and (b) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is less than 1 hectare.	Arsenic or one or more of its compounds containing Arsenic
1649		Uranium
1650		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1651	1. The land disposal of municipal waste, within the meaning of clauses (a) and (b) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the	Arsenic or one or more of its
	Environmental Protection Act, is undertaken at the site. 2. The fill area is at least 1 but not more than 10 hectares.	compounds containing Arsenic
1652		Barium
1653		BTEX

1656			
1657			
1658		 	

1654

1655

Cadmium or one or more of its compounds containing Cadmium

Dichlorobenzene-1,4 (para) Lead or one or more of its compounds containing Lead Mercury or one or more of its compounds containing Mercury

Nitrogen

Ref #	Circumstances	Chemical
1659		Selenium or one or more of its compounds containing Selenium
1660		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1661		Uranium
1662		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1663	1. The land disposal of municipal waste, within the meaning of clauses (a) and (b) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is more than 10 hectares.	Arsenic or one or more of its compounds containing Arsenic
1664		Barium
1665		BTEX
1666		Cadmium or one or more of its compounds containing Cadmium
1667		Dichlorobenzene-1,4 (para)
1668		Lead or one or more of its compounds containing Lead
1669		Mercury or one or more of its compounds containing Mercury
1670		Nitrogen
1671		Selenium or one or more of its compounds containing Selenium
1672		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1673		Uranium
1674		Vinyl chloride or another DNAPL that could degrade to vinyl chloride

<u>The establishment, operation or maintenance of a waste disposal site within</u> the meaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Landfilling (Municipal Waste)

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Ref #

1675

1685

1686

Circumstances

the meaning of Part V of the Environmental Protection Act.

Environmental Protection Act, is undertaken at the site. 2. The fill area is less than 1 hectare.

Chemical

Uranium

Arsenic or one or more of its

compounds containing Arsenic

Vinyl chloride or another DNAPL

that could degrade to vinyl chloride

Commercial)

1. The land disposal of industrial waste or commercial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the

The establishment, operation or maintenance of a waste disposal site within
the meaning of Part V of the Environmental Protection Act.Threat Subcategory: Waste Disposal Site - Landfilling (Solid Non Hazardous Industrial or
Commercial)

Ref #	Circumstances	Chemical
1687	1. The land disposal of industrial waste or commercial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is at least 1 but not more than 10 hectares.	Arsenic or one or more of its compounds containing Arsenic
1688		Barium
1689		BTEX
1690		Cadmium or one or more of its compounds containing Cadmium
1691		Dichlorobenzene-1,4 (para)
1692		Lead or one or more of its compounds containing Lead
1693		Mercury or one or more of its compounds containing Mercury
1694		Nitrogen
1695		Selenium or one or more of its compounds containing Selenium
1696		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1697		Uranium
1698		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1699	1. The land disposal of industrial waste or commercial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is more than 10 hectares.	Arsenic or one or more of its compounds containing Arsenic
1700		Barium
1701		BTEX
1702		Cadmium or one or more of its compounds containing Cadmium
1703		Dichlorobenzene-1,4 (para)
1704		Lead or one or more of its compounds containing Lead
1705		Mercury or one or more of its compounds containing Mercury
1706		Nitrogen
1707		Selenium or one or more of its compounds containing Selenium
1708		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene

The e the m	<u>stablishment, operation or maintenance of a waste disposal site within</u> <u>eaning of Part V of the Environmental Protection Act.</u> Threat Subcategory: Waste Disposal Site - Landfilling (Solid Non Hazardou Commercial)	ıs Industrial or
Ref #	Circumstances	Chemical
1709		Uranium
1710		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
<u>The e</u> the m	stablishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - Liquid Industrial Waste Injectio eaning of Part V of the Environmental Protection Act.	n into a well
Ref #	Circumstances	Chemical
1757	1. The land disposal of liquid industrial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The combined rate of discharge of all wells located at the site is more than 380 but not more than 3,800 cubic metres per year.	Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1759	1. The land disposal of liquid industrial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The combined rate of discharge of all wells located at the site is more than 3,800 but not more than 38,000 cubic metres per year.	Arsenic or one or more of its compounds containing Arsenic
1781		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1783	1. The land disposal of liquid industrial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The combined rate of discharge of all wells located at the site is more than 38,000 but not more than 380,000 cubic metres per year.	Arsenic or one or more of its compounds containing Arsenic
1784		Atrazine
1788		BTEX
1789		Cadmium or one or more of its compounds containing Cadmium
1790		Carbofuran
1798		Lead or one or more of its compounds containing Lead
1799		Mercury or one or more of its compounds containing Mercury
1801		Oxamyl
1803		Trichloroethane-1,1,1
1804		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1805		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1807	1. The land disposal of liquid industrial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The combined rate of discharge of all wells located at the site is more than 380,000 but not more than 3,800,000 cubic metres per year.	Arsenic or one or more of its compounds containing Arsenic
1808		Atrazine
1809		Barium
1812		BTEX

Ref #	Circumstances	Chemical
1813		Cadmium or one or more of its compounds containing Cadmium
1814		Carbofuran
1815		Chlorobenzene
1817		Cyanide (CN-)
1818		Dichlorobenzene-1,2 (ortho)
1819		Dichlorobenzene-1,4 (para)
1820		Hexachlorobenzene
1822		Lead or one or more of its compounds containing Lead
1823		Mercury or one or more of its compounds containing Mercury
1824		one or more Polychlorinated Biphenyls (PCBs)
1825		Oxamyl
1826		Trichlorobenzene-1,2,4
1827		Trichloroethane-1,1,1
1828		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1829		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1831	1. The land disposal of liquid industrial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The combined rate of discharge of all wells located at the site is more than 3,800,000 but not more than 38,000,000 cubic metres per year.	Arsenic or one or more of its compounds containing Arsenic
1832		Atrazine
1833		Barium
1835		Bis(2-ethylhexyl) phthalate
1836		BTEX
1837		Cadmium or one or more of its compounds containing Cadmium
1838		Carbofuran
1839		Chlorobenzene
1840		Copper or one or more of its compounds containing Copper
1841		Cyanide (CN-)

<u>The establishment, operation or maintenance of a waste disposal site within</u> the meaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Liquid Industrial Waste Injection into a well

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the meaning of Part V of the Environmental Protection Act. Ref # Circumstances Chemical 1842 Dichlorobenzene-1,2 (ortho) 1843 Dichlorobenzene-1,4 (para) 1844 Hexachlorobenzene 1845 Hexachlorocyclopentadiene 1846 Lead or one or more of its compounds containing Lead 1847 Mercury or one or more of its compounds containing Mercury 1848 one or more Polychlorinated Biphenyls (PCBs) 1849 Oxamyl 1850 Trichlorobenzene-1,2,4 1851 Trichloroethane-1,1,1 Trichloroethylene or another DNAPL 1852 that could degrade to Trichloroethylene Vinyl chloride or another DNAPL 1853 that could degrade to vinyl chloride Zinc or one or more of its compounds 1854 containing Zinc 1. The land disposal of liquid industrial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental 1855 Arsenic or one or more of its Protection Act, is undertaken at the site. 2. The combined rate of discharge of all wells located at the site is more than 38,000,000 cubic metres per year. compounds containing Arsenic 1856 Atrazine 1857 Barium 1858 Bis(2-ethylhexyl) adipate 1859 Bis(2-ethylhexyl) phthalate BTEX 1860 1861 Cadmium or one or more of its compounds containing Cadmium Carbofuran 1862 1863 Chlorobenzene 1864 Copper or one or more of its compounds containing Copper 1865 Cyanide (CN-)

The establishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - Liquid Industrial Waste Injection into a well

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1866

Dichlorobenzene-1,2 (ortho)

Ref # Circumstances Chemical 1867 Dichlorobenzene-1,4 (para) 1868 Hexachlorobenzene 1869 Hexachlorocyclopentadiene 1870 Lead or one or more of its compounds containing Lead 1871 Mercury or one or more of its compounds containing Mercury 1872 one or more Polychlorinated Biphenyls (PCBs) 1873 Oxamyl 1874 Trichlorobenzene-1,2,4 1875 Trichloroethane-1,1,1 1876 Trichloroethylene or another DNAPL that could degrade to Trichloroethylene 1877 Vinyl chloride or another DNAPL that could degrade to vinyl chloride 1878 Zinc or one or more of its compounds containing Zinc

The establishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - Liquid Industrial Waste Injection into a well the meaning of Part V of the Environmental Protection Act.

The establishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - PCB Waste Storage the meaning of Part V of the Environmental Protection Act.

Ref #	Circumstances	Chemical	
1879	1.PCB waste is stored below grade in a facility or engineered cell. 2. The PCB waste is stored at a PCB waste disposal site as described in Section 3 of Regulation 362 (Waste Management – PCBs), R.R.O. 1990, made under the Environmental Protection Act or was delivered to a site under written instructions of a Director in accordance with clause 8(a) of that regulation.	one or more Polychlorinated Biphenyls (PCBs)	
1881	1.PCB waste stored in storage tanks below grade. 2.The PCB waste is stored at a PCB waste disposal site as described in Section 3 of Regulation 362 (Waste Management – PCBs), R.R.O. 1990, made under the Environmental Protection Act or was delivered to a site under written instructions of a Director in accordance with clause 8(a) of that regulation.		
1882	2 1.PCB waste stored a storage tank that is installed partially below grade. 2.The PCB waste is stored at a PCB waste disposal site as described in Section 3 of Regulation 362 (Waste Management – PCBs), R.R.O. 1990, made under the Environmental Protection Act or was delivered to a site under written instructions of a Director in accordance with clause 8(a) of that regulation.		
1883	1.PCB waste is stored in an outdoor area and not in a container. 2.The PCB waste is stored at a PCB waste disposal site as described in Section 3 of Regulation 362 (Waste Management – PCBs), R.R.O. 1990, made under the Environmental Protection Act or was delivered to a site under written instructions of a Director in accordance with clause 8(a) of that regulation.		
<u>The es</u> the me	stablishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - Storage Of Hazardous Waste At eaning of Part V of the Environmental Protection Act.	Disposal Sites	
Ref #	Circumstances	Chemical	

Circumstances

1. Hazardous waste or liquid industrial waste is stored at or above grade. 1884

A blank cell indiates the text is the same as previous cells

Arsenic or one or more of its compounds containing Arsenic

Ref # Circumstances Chemical 1885 Barium 1886 Cadmium or one or more of its compounds containing Cadmium Chromium VI 1887 1888 Dichlorophenoxy Acetic Acid (D-2,4) 1889 Lead or one or more of its compounds containing Lead 1890 Mercury or one or more of its compounds containing Mercury 1891 Selenium or one or more of its compounds containing Selenium 1892 Silver or one or more of its compounds containing Silver 1893 Trichlorophenoxyacetic acid-2,4,5 1894 1. Hazardous waste or liquid industrial waste is stored below grade. Arsenic or one or more of its compounds containing Arsenic 1895 Barium 1896 Cadmium or one or more of its compounds containing Cadmium 1897 Chromium VI 1898 Dichlorophenoxy Acetic Acid (D-2,4) 1899 Lead or one or more of its compounds containing Lead 1900 Mercury or one or more of its compounds containing Mercury 1901 Selenium or one or more of its compounds containing Selenium 1902 Silver or one or more of its compounds containing Silver 1903 Trichlorophenoxyacetic acid-2,4,5 1904 1. Hazardous waste or liquid industrial waste is stored, and a portion, but not all of the waste is stored below grade. Arsenic or one or more of its compounds containing Arsenic 1905 Barium 1906 Cadmium or one or more of its compounds containing Cadmium 1907 Chromium VI

<u>The establishment, operation or maintenance of a waste disposal site within</u> the meaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Storage Of Hazardous Waste At Disposal Sites

A blank cell indiates the text is the same as previous cells

<u>The establishment, operation or maintenance of a waste disposal site within</u> the meaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Storage Of Hazardous Waste At Disposal Sites

Ref #	Circumstances	Chemical
1908		Dichlorophenoxy Acetic Acid (D-2,4)
1909		Lead or one or more of its compounds containing Lead
1910		Mercury or one or more of its compounds containing Mercury
1911		Selenium or one or more of its compounds containing Selenium
1912		Silver or one or more of its compounds containing Silver
1913		Trichlorophenoxyacetic acid-2,4,5
<u>The o</u> the n	establishment, operation or maintenance of a waste disposal site within neaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Storage of wastes described in cl (u) of the definition of hazardous waste	auses (p), (q), (r), (s), (t) or
Ref #	Circumstances	Chemical
1914 1917	1. A site that is not approved to accept hazardous waste or liquid industrial waste but accepts a waste described in clause (p) , (q) , (r) , (s) , (t) or (u) of the definition of hazardous waste as defined in Regulation 347 (General – Waste Management) made under the Environmental Protection Act, or in clause (d) of the definition of liquid industrial waste in that regulation, and stores the waste at or above grade.	Arsenic or one or more of its compounds containing Arsenic Chromium VI
1924	1. A site that is not approved to accept hazardous waste or liquid industrial waste but accepts a waste described in clause (p), (q), (r), (s), (t) or (u) of the definition of hazardous waste as defined in Regulation 347 (General - Waste Management) made under the Environmental Protection Act, or in clause (d) of the definition of liquid industrial waste in that regulation, and stores the waste below grade.	Arsenic or one or more of its compounds containing Arsenic
1925		Barium
1926		Cadmium or one or more of its compounds containing Cadmium
1927		Chromium VI
1928		Dichlorophenoxy Acetic Acid (D-2,4)
1929		Lead or one or more of its compounds containing Lead
1930		Mercury or one or more of its compounds containing Mercury
1931		Selenium or one or more of its compounds containing Selenium
1932		Silver or one or more of its compounds containing Silver
1933		Trichlorophenoxyacetic acid-2,4,5
1934	1. A site that is not approved to accept hazardous waste or liquid industrial waste but accepts a waste described in clause (p) , (q) , (r) , (s) , (t) or (u) of the definition of hazardous waste as defined in Regulation 347 (General - Waste Management) made under the Environmental Protection Act, or in clause (d) of the definition of liquid industrial waste in that regulation, and stores a portion of the waste, but not all, below grade.	Arsenic or one or more of its compounds containing Arsenic
1935		Barium

the m	eaning of Part V of the Environmental Protection Act.	(u) of the definition of hazardous waste	
Ref #	Circumstances		Chemical
1936			Cadmium or one or more of its compounds containing Cadmium
1937			Chromium VI
1938			Dichlorophenoxy Acetic Acid (D-2,4)
1939			Lead or one or more of its compounds containing Lead
1940			Mercury or one or more of its compounds containing Mercury
1941			Selenium or one or more of its compounds containing Selenium
1942			Silver or one or more of its compounds containing Silver
1943			Trichlorophenoxyacetic acid-2,4,5

<u>The establishment, operation or maintenance of a waste disposal site within</u> the meaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Storage of wastes described in clauses (p), (q), (r), (s), (t) or (u) of the definition of hazardous waste

Protection Act, is undertaken at the site. 2. The combined rate of discharge of all wells located at the site is more than 38,000,000 cubic metres per year.

<u>The establishment, operation or maintenance of a system that collects, stores,</u> <u>transmits, treats or disposes of sewage.</u> Threat Subcategory: Sewage System Or Sewage Works - Storage Of Sewage (E.G. Treatment Plant Tanks)

Ref #	Circumstances	Chemical
1083	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste and is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 50,000 cubic metres on an annual basis.	Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1096	1. The system is a treatment tank or storage tank that is part of a sewage works within the meaning of the Ontario Water Resources Act, the tank treats or stores sanitary sewage containing human waste, and a part of the tank, but not all, is below grade. 2. The system is associated with a wastewater treatment facility that is designed to discharge treated sanitary sewage at an average daily rate that is more than 50,000 cubic metres on an annual basis.	
<u>The e</u> the m	stablishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - Landfilling (Municipal Waste) leaning of Part V of the Environmental Protection Act.	
Ref #	Circumstances	Chemical
1674	1. The land disposal of municipal waste, within the meaning of clauses (a) and (b) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is more than 10 hectares.	Vinyl chloride or another DNAPL that could degrade to vinyl chloride
<u>The e</u> the m	establishment, operation or maintenance of a waste disposal site within neaning of Part V of the Environmental Protection Act. Threat Subcategory: Waste Disposal Site - Landfilling (Solid Non Hazardou Commercial)	s Industrial or
Ref #	Circumstances	Chemical
1710	1. The land disposal of industrial waste or commercial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental Protection Act, is undertaken at the site. 2. The fill area is more than 10 hectares.	Vinyl chloride or another DNAPL that could degrade to vinyl chloride
<u>The e</u> the m	stablishment, operation or maintenance of a waste disposal site within Threat Subcategory: Waste Disposal Site - Liquid Industrial Waste Injection leaning of Part V of the Environmental Protection Act.	n into a well
Ref #	Circumstances	Chemical
1877	1. The land disposal of liquid industrial waste within the meaning of clause (c) of the definition of "land disposal" in section 1 of Regulation 347 (General - Waste Management) made under the Environmental	Vinyl chloride or another DNAPL

that could degrade to vinyl chloride

PROVINCIAL TABLE 9 (DWAS): DNAPLS in WHPA A, B, C, C1, with any vulnerability where threats are significant

<u>The h</u>	andling and storage of a dense non-aqueous phase liquid.	Threat Subcategory: Handling Of A Dense Non Aqueous Phase Liquid (DNAPL)
Ref #	Circumstances	Chemical
102	1. The below grade handling of a DNAPL in relation to its storage.	Dioxane-1,4
103		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
104		Tetrachloroethylene (PCE)
105		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
106		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
107	1. The above grade handling of a DNAPL in relation to its storage.	Dioxane-1,4
108		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
109		Tetrachloroethylene (PCE)
110		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
111		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
The h	andling and storage of a dense non-aqueous phase liquid.	Threat Subcategory: Storage Of A Dense Non Aqueous Phase Liquid (DNAPL)
Ref #	Circumstances	Chemical
1098	1. The storage of a DNAPL at or above grade.	Dioxane-1,4
1099		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
1100		Tetrachloroethylene (PCE)
1101		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1102		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1103	1. The storage of a DNAPL below grade.	Dioxane-1,4
1104		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
1105		Tetrachloroethylene (PCE)
1106		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1107		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1108	1. The storage of a DNAPL if a portion, but not all, of the storage is below grade.	Dioxane-1,4
1109		one or more Polycyclic Aromatic Hydrocarbons (PAHs)
1110		Tetrachloroethylene (PCE)
1111		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1112		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
-		

Appendix B Hazard Rating Assumptions

Table B-1: Assumptions Used For Hazard Ratings

Land Use Activity	Threat Sub-Category	Chemical RIM	Assumed Quantity	Table of Drinking Water Threats* Circumstance Ref. #	Rational
Gas Station Fuel Storage Fuel is stored below ground. >2500 L		>2500 L	303-306	-a typical gas station has underground storage tanks with >2500 L, verified with TSSA data when available	
Aggregate Extraction – in use	Fuel Storage	Fuel is stored above ground.	Circumstance Ref. # ored below >2500 L 303-306 ored above 250-2500 L 272-276 e system as n section 1 of O. /06 (Building 1955		-gravel pits use large machinery which may use fuel tanks on-site to refuel
Aggregate Extraction – not in use	None				-pits not in use may have some old machinery left on site but generally do not have any chemicals of concern
Residential – not serviced	Septic System	A sewage system as defined in section 1 of O. Reg. 350/06 (Building Code)		1955	-if residence is un-serviced then they must have a septic system to deal with their waste water.
Commercial Property with large machinery		Fuel is stored above ground.	250-2500 L	272-276	-a commercial property with large machinery may have a fuel storage tank to fuel up the machines.
Auto Repair Shops	Fuel Storage	Fuel is stored above ground.	250-2500 L	272-276	-auto repair shops usually have a waste oil tank to store used fuels and waste oils from the vehicles they service
and Dealers	Storage and Handling of DNAPL	Stored above ground.	Any quantity	107-116	-auto repair shops may have a container of DNAPL for degreasing
Metal Ore Mining	Storage, Treatment And Discharge Of Tailings From Mines	The mine tailings are stored in a pit.	Discharge is less than quantity required to report through NPRI parameter	1533-35, 1538-39, 1541	-most mines use pits to store tailings rather than surface impoundments
Metal Ore Mining -Abandoned	Storage, Treatment And Discharge Of Tailings From Mines	The mine tailings are stored in a pit.	Discharge is less than quantity required to report through NPRI parameter	1533-35, 1538-39, 1541	-assumed that any abandoned mines will have tailings stored in a pit

Table B-1: Assumptions Used For Hazard Ratings

Land Use Activity	Threat Sub-Category	Chemical RIM	Assumed Quantity	Table of Drinking Water Threats* Circumstance Ref. #	Rational
Agricultural Activities	Storage/Application of Agricultural Source Material	Source material is stored above grade in uncontained storage area.	< 0.5 Nutrient Units per Acre	1962	-the entire SSM area has <0.5 nutrient units per acre. To consider the worst case scenario we have assumed that any source material is stored in a permanent uncontained area
	Storage of Commercial Fertilizer	Stored for retail sale.	250-2500 kg	1403-1404	-home and garden centres often sell fertilizer in bags of 5 kg for residential use, most will have up to 200 bags at any one time (5 x 200 = 1000 kg)
Hardware / Home Improvement Stores and other related retail	Storage of Pesticide	Above ground storage	25 – 250 kg	1266-1276	- hardware stores often sell pesticides for use residential use, pesticides are in individual containers of less than 5 L, however combined can be a significant amount of pesticide $(5 L \times 200 = 1000 L)$
	Storage of DNAPL	Above ground storage	Any quantity	112-116	-sell containers of degreasers and solvents for cleaning
	Storage of Fuel	Above ground storage	25-250 L	242-246	-may sell camping fuel, specialized machine fuels etc.
	Storage of Fuel	Above ground storage	250-2500 L	272-276	-golf courses have fuel storage to fuel golf carts and lawn mowers
Golf Courses	Storage of Commercial Fertilizer	Stored in relation to its application.	250-2500 kg	1403-1404	-golf courses store fertilizer that is applied to grass
	Storage of Pesticide	Stored for use in extermination.	25-250 kg	1266-1276	-golf courses store pesticides that will be sprayed on grass and gardens

Appendix C Summary Worksheets

Appendix C Summary Work Sheets

Semi-Quantitative Water Quality Risk Assessment

Tier	1									
Lan	d Use Activity	Gas Station	tation NAIC				4471			
Thre	eat Activity	Storage of I	Fuel							
T1	Chemical of Cor	ncern	Toxicity	/ E F	Inv ate	Quan tity	Chem. RIM	Haz Rating*		
C1	BTEX		8		6	10	4	7.0		
C2	Petroleum Hydrocarbons I (nC6-nC10)		4		4	10	4	6.4		
C3	Petroleum Hydrocarbons F2 (>nC10-nC16)		4		2	10	4	6.2		
C4	Petroleum Hydro (>nC1 6-nC34)	Petroleum Hydrocarbons F3 (>nC1 6-nC34)			3	10	4	6.3		
C5	Petroleum Hydro (>nC34)	ocarbons F4	4		3	10	4	6.3		
Max	Chemical Hazard	d Rating						7.0		
Path	Pathogen RIM		n/a	Pathogen Hazard Rati			ting	0		
Che	mical Uncertainty		High	Pathog	Pathogen Uncertainty			n/a		
Corr	nments									

Example 1: Commercial Land Use (Gas Station)

*Chemical Hazard Rating = (0.25*Toxicity + 0.25 * Environmental Fate + Quantity + Chemical RIM (Release to the Environment)/ 2.5 (*Threats EBR Lookups, Drinking Water Quality Threats – Physical Look-up Tables Data Model, Data Dictionary, and Queries*)

Vulnerability Score		Chemical Hazard Rating		Risk Score
9	*	7.0	=	63.0
Chemical Unce	rtainty	,		
Vulnerability Low		Hazard Rating	High	
Vulnerability		Pathogen Hazard		
Score		Rating		
9	*	n/a	=	n/a
Pathogen Unce	ertainty	/		
Vulnerability	Low	Hazard Rating	n/a	

Example 2: Risk Analysis output for WHPA-B, VS=8 from UTRCA SWP Threat Analysis Tool

Prescribed Drinking Water Threat	The handling and storage of fuel.			
Threat Subcategory	Storage Of Fuel			
Chemical Of Concern	BTEX			
Chem Quantity Circumstance	where the quantity stored is >250-2500 L			
Chem RIM Circumstance	Where liquid fuel is stored completely below grade in tanks at permanent or mobile small facilities or a facility defined under O Reg 213.			
Release Mode	Direct			
Risk Score	68.8			
Vulnerability Score	8			
Ref #	1412			
Sort Order	15454			
Ref # - 6.1	1364			
Sort Order - 6.1	22056			
Ref - Dec08	282			

Example 3: Risk Analysis output for HVA, VS=6 from UTRCA SWP Threat Analysis Tool

	Waste Disposal Site - Landfilling (Municipal					
Threat Subcategory Waste)						
	The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of					
Prescribed Drinking Water Threat	the Environmental Protection Act.					
Chem Quantity Circumstance	Landfill area > 10 ha					
Quantity Score	10					
Circumstance Order	3					
Quantity Circumstance ID	132					
Chem RIM Circumstance	The land disposal of municipal waste					
RIM Circumstance ID	116					
Source Water	Groundwater					
Chem RIM Score	10					
Chem RIM Desc L	A discharge from the area where the waste is disposed may result is the presence of					
Chem RIM Desc R	in groundwater or surface water.					
Chomical Of Concorn	Vinyl chloride or another DNAPL that could					
Polosso Modo	Direct					
Environmental Esta Saora	10					
Vulnorability Soora	10					
Hazard Rating	10					
Risk Score	60					
Sort Order	19464					
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UTRCA Threats Analysis Tool

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	t ThreatSub	ChemRIMCircumstance	The land disposal of municipal waste	umstance	Mode RiskSco	Score	e #	Order	# -
	Courses Cu	RIMCircumstanceID	116						0.1
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or maintenance of a system		ChemRIMScore	10	ompletely	Direct 60	6	1083	12525	108
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The establishment operation	Sewage Sy	ChemRIMDescR	in groundwater or surface water.						
or maintenance of a system	Sewage Wo Storage Of	ChemicalOfConcern	Vinyl chloride or another DNAPL that could degrade to vinyl chloride	ank that artially	Direct 60	6	1096	12702	109
treats or disposes of sewage.	(E.G. Treat	ToxicityScore	10						
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or maintenance of a waste	Waste Disp	EnvironmentalFateScore	10						
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July 26, 2011

Paul Heeney, A/Director Source Protection Programs Branch 2 St. Clair Ave. West, 8th Floor Toronto ON M4V 1L5

Re: Formal Request of the Addition of a Local Threat, Sault Ste. Marie Region Source Protection Area

Dear Mr. Paul Heeney,

Major transportation corridors run through many of the municipal drinking water vulnerable areas within the Sault Ste. Marie Region Source Protection Area.

They include a railway corridor within the wellhead protection area (WHPA) B of the Shannon well, major roadways/highways cross through vulnerable areas in the WHPAs of the Shannon, Goulais and Steelton wells. The greatest concern however is the international shipping channel that falls within the Intake Protection Zone -2 of the Gros Cap intake.

Dangerous and/or hazardous goods are transported through the shipping channels and the potential exists for a spill. The Source Protection Authority has modeled a spills scenario as per Technical Rule 68 and the spill threats are determined to be potassic fertilizer and fuel oil. Using the Ontario Drinking Water Standards the concentrations of the chemical components were anticipated to be above the acceptable standards. Please see the table below for component concentrations that exceed the Ontario Drinking Water Standards.

Although the vulnerability scoring for the IPZ for the Gros Cap intake is low, the water treatment facility is not treating source water for the components of either fuel oil or potassic fertilizer. As a result, the necessity for the shut down of the facility would be the result of a spill. The entire study is included as an appendix in the Amended Assessment Report.

Baird & Associates

						Dilution	in Water			Concentrati	ion in Water	Concent	tration at
						Col	umn	Dilution	at Intake	Columr	n (mg/L)	Intake	(mg/L)
	Density		ODWS	06 D.V	Concontration								
WO Parameter	(ka/m ³)	Constituents	(mg/L)	Weight	(mo/L)	MIKE3	CORMIX	MIKE3	CORMIX	MIKES	CORMIX	MIKE3	CORMIX
WQFalameter	(kg/m)		(IIIg/L)	weight	(ITIG/L)	WIIKE3		MIRES		WIRES	CORMIA	MIKES	CORMIX
Potassic Fertilizer	1281	Potassium Chioride	250	99.8	1278438	100	24	100	24	12784	53268	12/84	53268
		Sodium Chloride	250	4	51240	100	24	100	24	512	2135	512	2135
		Benzene	0.00500	1.9	16150	128	26	5000	5000	126	621	3	3
		Toluene	0.02400	8.1	68850	128	26	5000	5000	538	2648	14	14
Gasoline	850	Ethylbenzene	0.00240	1.7	14450	128	26	5000	5000	113	556	3	3
Casoline	0.00	m-Xylene	0.30000	4.6	39100	128	26	5000	5000	305	1504	8	8
		o-Xylene	0.30000	2.5	21250	128	26	5000	5000	166	817	4	4
		p-Xylene	0.30000	1.9	16150	128	26	5000	5000	126	621	3	3
		Benzene	0.00500	0.029	247	128	26	5000	5000	2	9	0.05	0.05
		Toluene	0.02400	0.18	1530	128	26	5000	5000	12	59	0.31	0.31
		Ethylbenzene	0.00240	0.068	578	128	26	5000	5000	5	22	0.12	0.12
		m+p-Xylenes	0.30000	0.22	1870	128	26	5000	5000	15	72	0.37	0.37
		Xylene	0.30000	0.043	366	128	26	5000	5000	3	14	0.07	0.07
		Total Xylenes	0.30000	0.5	4250	128	26	5000	5000	33	163	1	1
Diesel	850	Arsenic	0.02500	7.1E-06	0.1	128	26	5000	5000	0.00047	0.00232	0.00001	0.00001
		Cadmium	0.00500	4.9E-05	0.4	128	26	5000	5000	0.0033	0.0160	0.0001	0.0001
		Chromium	0.05000	0.00017	1	128	26	5000	5000	0.0113	0.0556	0.0003	0.0003
		Iron	0.30000	0.0037	31	128	26	5000	5000	0.2457	1	0.0063	0.0063
		Manganese	0.05000	0.00032	3	128	26	5000	5000	0.0213	0.1046	0.0005	0.0005
		Zinc	5.00000	0.00031	3	128	26	5000	5000	0.0206	0.1013	0.0005	0.0005
		Benzo(a)pyrene	0.00001	0.00022	2	128	26	5000	5000	0.0146	0.0719	0.0004	0.0004
		Benzene	0.00500	0.16	1360	128	26	5000	5000	11	52	0.2720	0.2720
		Toluene	0.02400	0.67	5695	128	26	5000	5000	44	219	1	1
		Ethylbenzene	0.00240	0.17	1445	128	26	5000	5000	11	56	0.2890	0.2890
Omuria Oil	050	m+p-Xylenes	0.30000	0.5	4250	128	26	5000	5000	33	163	1	1
	850	m-Xylene	0.30000	0.66	5610	128	26	5000	5000	44	216	1	1
		o-Xylene	0.30000	0.26	2210	128	26	5000	5000	17	85	0.4420	0.4420
		p-Xylene	0.30000	0.26	2210	128	26	5000	5000	17	85	0.4420	0.4420
l l		Benzo(a)pyrene	0.00001	0.00024	2	128	26	5000	5000	0.0159	0.0785	0.0004	0.0004
No. 6 Fuel	850	Benzo(a)pyrene	0.00001	0.0044	37	128	26	5000	5000	0.2922	1	0.0075	0.0075

Table A1. Estimated Concentration Levels at the Intake Location

Exceeds ODWS

Due to the potential for a spill to occur, the Sault Ste. Marie Region Source Protection Committee is requesting the transportation of hazardous substances along transportation corridors within the IPZ-2 be included in the Sault Ste. Marie Region Source Protection Area Assessment Report as a local, non-prescribed threat. The Committee feels it is important that the transportation of hazardous substances in areas of close proximity to municipal drinking water sources be considered a significant threat to enable the inclusion of appropriate policies in the Source Protection Plan.

Thank you for your consideration of our request.

Sincerely,

Rhonda Bateman, DWSP Coordinator

Subhash Verma, Chair SPC C.C. Linda Whalen, General Manager SSMRCA Ministry of the

Environment

Source Protection Programs Branch

14th Floor 40 St. Clair Ave. West Toronto ON M4V 1M2 Ministère de l'Environnement

Direction des programmes de protection des sources

14^e étage 40, avenue St. Clair Ouest Toronto (Ontario) M4V 1M2



ENV1174IT-2011-85

September 2, 2011

Rhonda Bateman, Sault Ste. Marie Source Protection Area Project Manager Sault Ste. Marie Region Source Protection Area 1100 Fifth Line East Sault Ste. Marie ON P6A 5K7

Dear Mrs. Bateman:

We are in receipt of your letter dated July 26, 2011 requesting the Director's opinion regarding the addition of transportation of specified substances along transportation corridors as local drinking water threats under Technical Rule 119.

In accordance with my authority under Rules 119, 120, and 121, I am of the opinion that the hazard ratings for these transportation activities are greater than 4. The transportation activities as set out in Table 1 are approved as local threats in the Sault Ste. Marie Region Source Protection Area.

We understand you may be evaluating these activities using the event based modelling approach (EBA) allowed under Technical Rules 68 and 130. Under that approach the vulnerability scores in the tables below are not relevant. The tables have been provided in this format to be consistent with the Table of Drinking Water Threats in the Technical Rules. The tables are required to confirm that the activities are threats that can be considered using the event based approach.

Your rationale for the inclusion of these local threats along with a copy of this letter must be included in your amended assessment report.

Sincerely

lan Smith, Director Source Protection Programs Branch Ministry of the Environment

CC: Keith Willson, Manager, Source Protection Approvals
 Katie Fairman, Manager, Source Protection Planning (A)
 John Westlake, Supervisor (A), Source Protection Implementation
 Melanie Ward, Team Lead, Source Protection Approvals
 Clara Tucker, Research Scientist, Source Protection Planning

 Table 1:

 ACTIVITY, CIRCUMSTANCE, AND AREAS WHERE THE ACTIVITY IS SIGNIFICANT, MODERATE OR LOW THREAT

Sault Ste Marie Region Source Protection Area

1. TRANSPORTATION OF FUELS

/ Score to ow DWT	WHPA-A, B, C, C1, D	10 - 8	10 - 8	10 - 8	10 - 8	∞
Vulnerability produce a l	IPZ-1,2,3 WHPA-E	10-7.2	10-7.2	9 - 6.4	10 - 7	9 – 6.4
ty Score to oderate DW开	WHPA-A, B, C, C1, D]		10
 Vulnerabili produce a Mo 	IPZ-1,2.3, WHPA-E		1	10		10
lity Score to onificant DWT	WHPA-A B C, C1, D	1		1		1
Vulnerabil produce a Si	IPZ-1,2.3 WHPA-E					I
	Activity	 The transportation of Petroleum hydrocarbons (PH) F1 (C6-10). PH F1 (C6-10) is transported in a quantity of 25-250 L or 25-250 kg. A spill may result in the release of PH F1 (C6-10) to groundwater or surface water. 	 The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16). PH F2(>C10-16) are transported in a quantity of 25-250 L or 25-250 kg. A spill may result in the release of PH F2(>C10-16) to groundwater or surface water. 	 The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34). PH F3 (>C16-34) is transported in a quantity of 25-250 L or 25-250 kg. A spill may result in the release of PH F3 (>C16-34) to groundwater or surface water. 	 The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50). PH F4(>C34-50) is transported in a quantity of 25-250 L or 25-250 kg. A spill may result in the release of PH F4(>C34-50) to groundwater or surface water. 	 The transportation of BTEX compounds. BTEX compounds is transported in a quantity of 25-250 L or 25-250 kg. A spill may result in the release of BTEX compounds to groundwater or surface water.

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1. TRANSPORTATION OF FUELS

y Score to owbWT	WHPA'A B C. C1. D	×	×	8	~	8-6	9-9 8
Vulnerabilit produce al	™IPZ [±] 1/2/3 ™HPA-E	9 - 6.4	9 - 6.3	8.1 – 6	9 - 6.3	8.1 - 6	9 - 6.4
tyrScore to	WHPA-BT C.C1.D2	10	10	10	10	10	10
Vulnerabili Informeta Mo	MHPA:E	10	10	10 - 9	10	10 - 9	10
ity Score to	WHPA'A'B' C CI D				. .	1	
Vulnerabil InroducearSi	TIPZ=123			1		I	I
	Activity -	 The transportation of Petroleum hydrocarbons (PH) F1 (C6-10). PH F1 (C6-10) is transported in a quantity of >250-2500 L or >250-2500 kg. A spill may result in the release of PH F1 (C6-10) to groundwater or surface water. 	 The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16). PH F2 (>C10-16) are transported in a quantity of >250-2500 L or >250-2500 kg. A spill may result in the release of PH F2 (>C10-16) to groundwater or surface water. 	 The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34). PH F3 (>C16-34) is transported in a quantity of >250-2500 L or >250-2500 kg. A spill may result in the release of PH F3 (>C16-34) to groundwater or surface water. 	 The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50). PH F4 (>C34-50) is transported in a quantity of >250-2500 L or >250-2500 kg. A spill may result in the release of PH F4 (>C34-50) to groundwater or surface water. 	 The transportation of BTEX compounds. BTEX compounds is transported in a quantity of >250-2500 L or >250-2500 kg. A spill may result in the release of BTEX compounds to groundwater or surface water. 	 The transportation of Petroleum hydrocarbons (PH) F1 (C6-10). PH F1 (C6-10) is transported in a quantity of >2500 L or > 2500 kg. A spill may result in the release of PH F1 (C6-10) to groundwater or surface water.

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1. TRANSPORTATION OF FUELS

	Vulnerabili produce a Sig	ty Score to gnificant DWT	Vulnerabili produce a Me	iy Score to, oderate DWT	Vulnerability produce a L	Score to ow/DWit
The second s	~	WHPA-A, B, C, C1, D	``:\IPZ-1;2,3/⊊ WHPA-E	C, C1, D	IPZ-1,2.3, WHPA-E	WHEA-A, B, C, C1, D
 The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16). PH F2 (>C10-16) are transported in a quantity of >2500 L or > 2500 kg. A spill may result in the release of PH F2 (>C10-16) to eroundwater or surface water. 	1	1	10	10	9 - 6.3	8-6
 The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34). PH F3 (>C16-34) is transported in a quantity of >2500 L or > 2500 kg. A spill may result in the release of PH F3 (>C16-34) to groundwater or surface water. 	1.		10 - 9	10	8.1 - 6	9-9 8
 The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50). PH F4 (>C34-50) is transported in a quantity of >2500 L or > 2500 kg. A spill may result in the release of PH F4 (>C34-50) to groundwater or surface water. 	.	 	10	10	9 - 6.3	8-6
 The transportation of BTEX compounds. BTEX compounds is transported in a quantity of >2500 L or > 2500 kg. A spill may result in the release of BTEX compounds to groundwater or surface water. 	I	.	10 - 9	10-8	8.1 – 6	Q

2. TRANSPORTATION OF FERTILIZERS

Vulne produce	rerability Score to e a Significant DWT	Vulnerabilit produce a Mo	y Score to derate DWЛ	Vulnerability produce a L	Score to ow DWT
PZ-12 WHPA	2.3 WHPA-A.B. A-E. C. C1, D	IPZ-1,2,3 WIHPA-E	WHPA-A, B, C, C1, D	IPZ-1-2-3 WHPA-E	WHPA-A, B, C, C1, D
fertilizer. ntity of 25-250 L or	•	Ţ0	10	6 - 7	ø

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2. TRANSPORTATION OF FERTILIZERS

	Vulnerabili produce a Sic	ty Score to	 Vulnerabili produce a Mi 	ty Score to	Vulnerability produce a l	s Score to owi BWF
Activity Sector	IPZ-123 WHPA:E	WHPA-A B C C1 D	IPZ.123 WHPA-E	WHPA-A B C CI D	IPZ-123 WHRAE	WHPA-A, B. C. C1 D
 The transportation of Potassium Chloride fertilizer Chloride is transported in a quantity of 25-250 L or 25-250 kg A spill may result in the release of Chloride to groundwater or surface water. 		-	1	I I	10 - 7	10-8
 The transportation of Potassium Sulfate fertilizer Sulfate is transported in a quantity of 25-250 L or 25-250 kg A spill may result in the release of Sulfate to groundwater or surface water. 	1	1	1		10 - 7	10-8
 The transportation of Potassium Nitrate fertilizer Nitrogen (Nitrate) is transported in a quantity of >250-2500 L or >250-2500 kg. A spill may result in the release of Nitrogen (Nitrate) to groundwater or surface water. 	1		10 - 9	10	8.1 - 6	8-6
 The transportation of Potassium Chloride fertilizer. Chloride is transported in a quantity of >250-2500 L or >250-2500 kg. A spill may result in the release of Chloride to groundwater or surface water. 		ŗ	10 - 9	10	8.1 – 6.3	8
 The transportation of Potassium Sulfate fertilizer. Sulfate is transported in a quantity of >250-2500 L or >250- 2500 kg. A spill may result in the release of Sulfate to groundwater or surface water 	· .		10 - 9	10	8.1 – 6.3	8
 The transportation of Potassium Nitrate fertilizer Nitrogen (Nitrate) is transported in a quantity of >2500 L or >2500 kg. A spill may result in the release of Nitrogen (Nitrate) to groundwater or surface water. 	1	1	10 - 8	10-8	7.2 – 5.4	و.
 The transportation of Potassium Chloride fertilizer Chloride is transported in a quantity of >2500 L or > 2500 kg. A spill may result in the release of Chloride to groundwater or surface water. 			10 - 8	10-8	7.2 - 5.4	و

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