Appendix A

Significant Drinking Water Threats – Activities

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 application of commercial fertilizer to land.

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

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

The application of pesticide to land.

Ref #	Circumstances	Chemical
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		Mecoprop
85		Metalaxyl
86		Metolachlor or s-Metolachlor

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

The establishment, operation or maintenance of a waste disposal site within 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 handling 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 facility that manufacturers or refines fuel. 2.The quantity of liquid fuel stored is more than 2,500 litres.	BTEX
183		Petroleum Hydrocarbons F1 (nC6-nC10)

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

The handling 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 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
188		Petroleum Hydrocarbons F1 (nC6-nC10)

The management of runoff that contains chemicals used in the de-icing of aircraft.

Ref #	Circumstances	Chemical
198	1.Runoff containing de-icing materials may discharge from to land or water. 2.The runoff originates at a national airport.	Dioxane-1,4
199		Ethylene Glycol

The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard. O. Reg. 385/08, s. 3.

Threat Subcategory: Management Or Handling Of Agricultural Source Material - Agricultural Source Material (ASM) Generation (Grazing and pasturing)

Ref #	Circumstances	Chemical
204	1.The use of land as livestock grazing or pasturing land. 2.The number of nutrient units generated in the farm unit divided by the number of acres of land that is used for livestock grazing or pasturing land is sufficient to generate nutrients at an annual rate that is more than 1 nutrient unit per acre.	Nitrogen

The use of land as livestock grazing or pasturing land, an outdoor confinement area or a farm-animal yard. O. Reg. 385/08, s. 3.

Threat Subcategory: Management Or Handling Of Agricultural Source Material - Agricultural Source Material (ASM) Generation (Yards or confinement)

Ref #	Circumstances	Chemical
210	1.The use of land as an outdoor confinement area or a farm-animal yard. 2.The number of animals confined in the area at any time is sufficient to generate agricultural source material at a rate of more than 300 nutrient units per hectares of the area annually.	Nitrogen

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
335	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 rural, agricultural, or low density residential.	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 water. 2.The drainage area associated with the storm water management facility is more than 100 hectares and the predominant land use in the area is high density residential land use.	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 compounds containing Lead

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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)

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

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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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

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

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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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

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

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

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, transmits, treats or disposes of sewage. — Threat Subcategory: Sewage System Or Sewage Works - Sewage Treatment Plant Effluent Discharges (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

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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
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, transmits, treats or disposes of sewage.

Threat Subcategory: Sewage System Or Sewage Works - Storage Of Sewage (E.G. Treatment Plant Tanks)

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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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
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

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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
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)

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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

The handling 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		Mecoprop
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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 handling 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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

The handling and storage of an organic solvent. — Threat Subcategory: Storage Of An Organic Solvent

Ref #	Circumstances	Chemical
1271		Methylene Chloride (Dichloromethane)
1272		Pentachlorophenol

The handling and storage of commercial fertilizer. — Threat Subcategory: 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 stored that contain the commercial fertilizer, in any form including liquid or solid, is more than 2,500 kilograms.	Nitrogen

The handling and storage of fuel. — Threat Subcategory: 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 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 250, but not more than 2,500 litres.	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 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 250, but not more than 2,500 litres.	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 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 250, but not more than 2,500 litres.	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 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 250, but not 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 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
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 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
1390		Petroleum Hydrocarbons F1 (nC6-nC10)
1391		Petroleum Hydrocarbons F4 (>nC34)
1392		Petroleum Hydrocarbons F2 (>nC10-nC16)

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

The handling 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 handling 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
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.	

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

The handling 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 handling 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 storage 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)

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.

Threat Subcategory: Storage, Treatment And Discharge Of Tailings From Mines

Ref #	Circumstances	Chemical

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 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 - Landfarming Of Petroleum Refining Waste

Ref #	Circumstances	Chemical

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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)

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 (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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 (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

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 (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 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
1652		Barium
1653		BTEX
1654		Cadmium or one or more of its compounds containing Cadmium
1655		Dichlorobenzene-1,4 (para)
1656		Lead or one or more of its compounds containing Lead
1657		Mercury or one or more of its compounds containing Mercury
1658		Nitrogen

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 (Municipal Waste)

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

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
1675	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 less than 1 hectare.	Arsenic or one or more of its compounds containing Arsenic
1685		Uranium
1686		Vinyl chloride or another DNAPL that could degrade to vinyl chloride

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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
1709		Uranium
1710		Vinyl chloride or another DNAPL that could degrade to vinyl chloride

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 - Liquid Industrial Waste Injection 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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 - Liquid Industrial Waste Injection into a well

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-)

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PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 - Liquid Industrial Waste Injection into a well

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
1852		Trichloroethylene or another DNAPL that could degrade to Trichloroethylene
1853		Vinyl chloride or another DNAPL that could degrade to vinyl chloride
1854		Zinc or one or more of its compounds containing Zinc
1855	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 38,000,000 cubic metres per year.	Arsenic or one or more of its compounds containing Arsenic
1856		Atrazine
1857		Barium
1858		Bis(2-ethylhexyl) adipate
1859		Bis(2-ethylhexyl) phthalate
1860		BTEX
1861		Cadmium or one or more of its compounds containing Cadmium
1862		Carbofuran
1863		Chlorobenzene
1864		Copper or one or more of its compounds containing Copper
1865		Cyanide (CN-)
1866		Dichlorobenzene-1,2 (ortho)

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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 - Liquid Industrial Waste Injection into a well

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 the meaning of Part V of the Environmental Protection Act. — Threat Subcategory: Waste Disposal Site - PCB Waste Storage

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	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.	

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 - Storage Of Hazardous Waste At Disposal Sites

Ref #	Circumstances	Chemical
1884	1. Hazardous waste or liquid industrial waste is stored at or above grade.	Arsenic or one or more of its compounds containing Arsenic

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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 - Storage Of Hazardous Waste At Disposal Sites

Ref #	Circumstances	Chemical
1885		Barium
1886		Cadmium or one or more of its compounds containing Cadmium
1887		Chromium VI
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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 - 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

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 - Storage of wastes described in clauses (p), (q), (r), (s), (t) or (u) of the definition of hazardous waste**

Ref #	Circumstances	Chemical
1914	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
1917		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

PROVINCIAL TABLE 1 (CW10S): Chemicals in a WHPA with a vulnerability score of 10 where threats are significant

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 - Storage of wastes described in clauses (p), (q), (r), (s), (t) or (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

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

PROVINCIAL TABLE 2 (CW8S): Chemicals in a WHPA with a vulnerability score of 8 where threats are significant

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
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.	

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 (Municipal Waste)

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

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
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

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 - Liquid Industrial Waste Injection 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 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.	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

The handling 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 handling 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	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.	250-2500 L	272-276	-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 Storage	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 and Dealers	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
	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
Hardware / Home Improvement Stores and other related retail	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)
	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 x 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.
Golf Courses	Storage of Fuel	Above ground storage	250-2500 L	272-276	-golf courses have fuel storage to fuel golf carts and lawn mowers
	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

Example 1: Commercial Land Use (Gas Station)

Tier 1						
Land Use Activity	Gas Station	**NAIC**	4471			
Threat Activity	Storage of Fuel					
T1	Chemical of Concern	Toxicity	Env Fate	Quantity	Chem. RIM	Haz Rating*
C1	BTEX	8	6	10	4	7.0
C2	Petroleum Hydrocarbons F1 (nC6-nC10)	4	4	10	4	6.4
C3	Petroleum Hydrocarbons F2 (>nC10-nC16)	4	2	10	4	6.2
C4	Petroleum Hydrocarbons F3 (>nC1 6-nC34)	4	3	10	4	6.3
C5	Petroleum Hydrocarbons F4 (>nC34)	4	3	10	4	6.3
Max Chemical Hazard Rating						7.0
Pathogen RIM		n/a	Pathogen Hazard Rating			0
Chemical Uncertainty		High	Pathogen Uncertainty			n/a
Comments						

*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 Uncertainty				
Vulnerability	Low	**Hazard Rating**	High	
Vulnerability Score		**Pathogen Hazard Rating**		
9	*	n/a	=	n/a
Pathogen Uncertainty				
Vulnerability	Low	**Hazard Rating**	n/a	

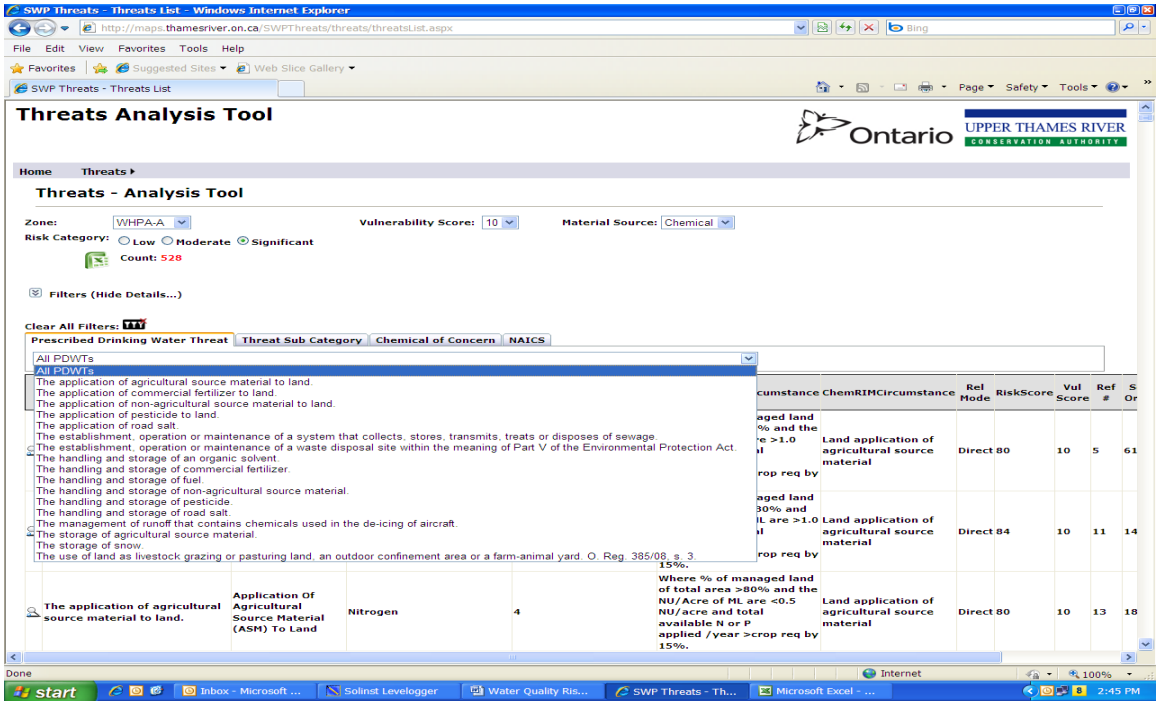
Example 2: Risk Analysis output for WHPA-B, VS=8 from UTRCA SWP Threat Analysis Tool

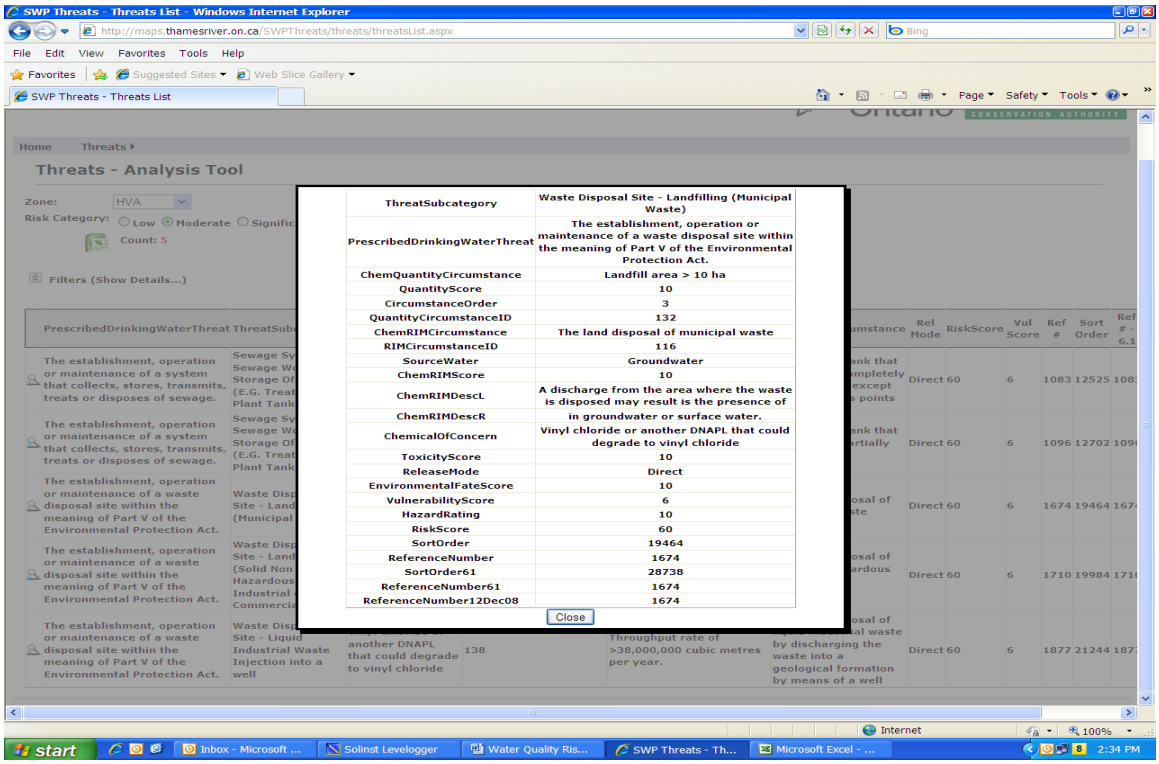
Prescribed Drinking Water Threat	The handling and storage of fuel.
Threat Subcategory	Storage Of Fuel
Chemical Of Concern	BTEX
Chem Quantity Circumstance	where the quantity stored is >250-2500 L
Chem RIM Circumstance	Where liquid fuel is stored completely below grade in tanks at permanent or mobile small 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

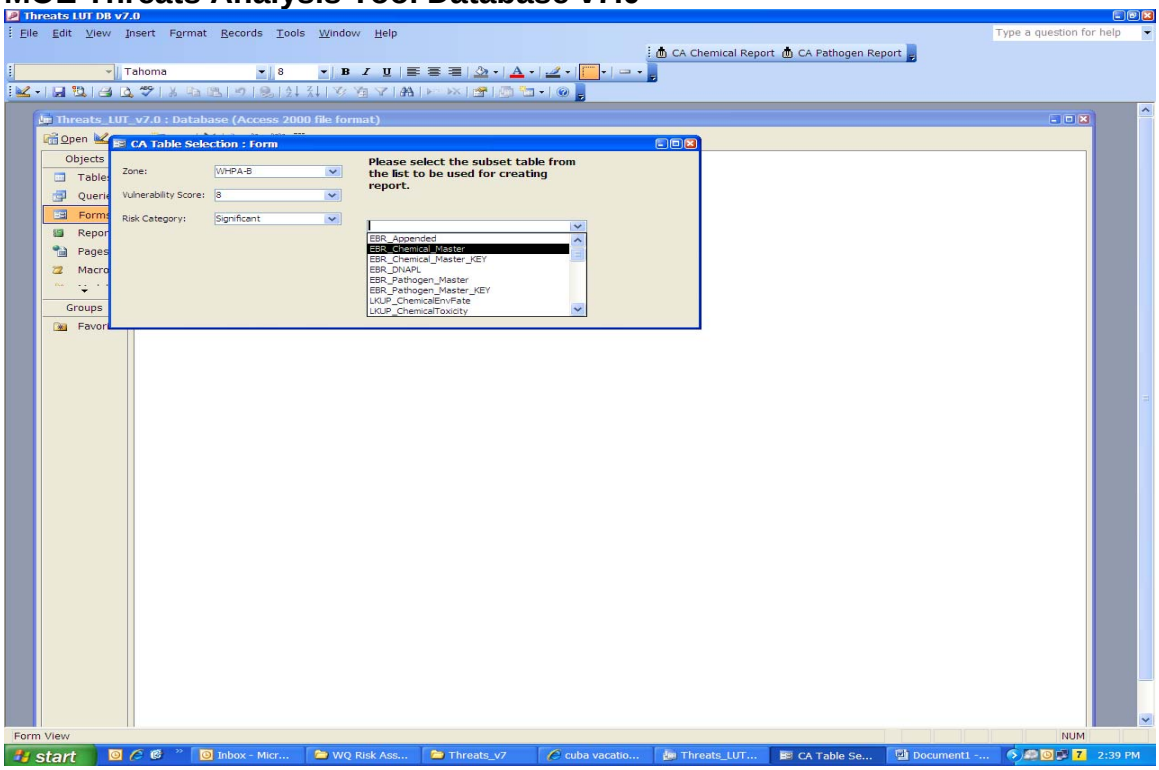
Threat Subcategory	Waste Disposal Site - Landfilling (Municipal Waste)
Prescribed Drinking Water Threat	The establishment, operation or maintenance of a waste disposal site within the meaning of Part V of the Environmental Protection Act.
Chem Quantity Circumstance	Landfill area > 10 ha
Quantity Score	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.
Chemical Of Concern	Vinyl chloride or another DNAPL that could degrade to vinyl chloride
Toxicity Score	10
Release Mode	Direct
Environmental Fate Score	10
Vulnerability Score	6
Hazard Rating	10
Risk Score	60
Sort Order	19464
Reference Number	1674
Sort Order 61	28738
Reference Number 61	1674
Reference Number 12Dec08	1674

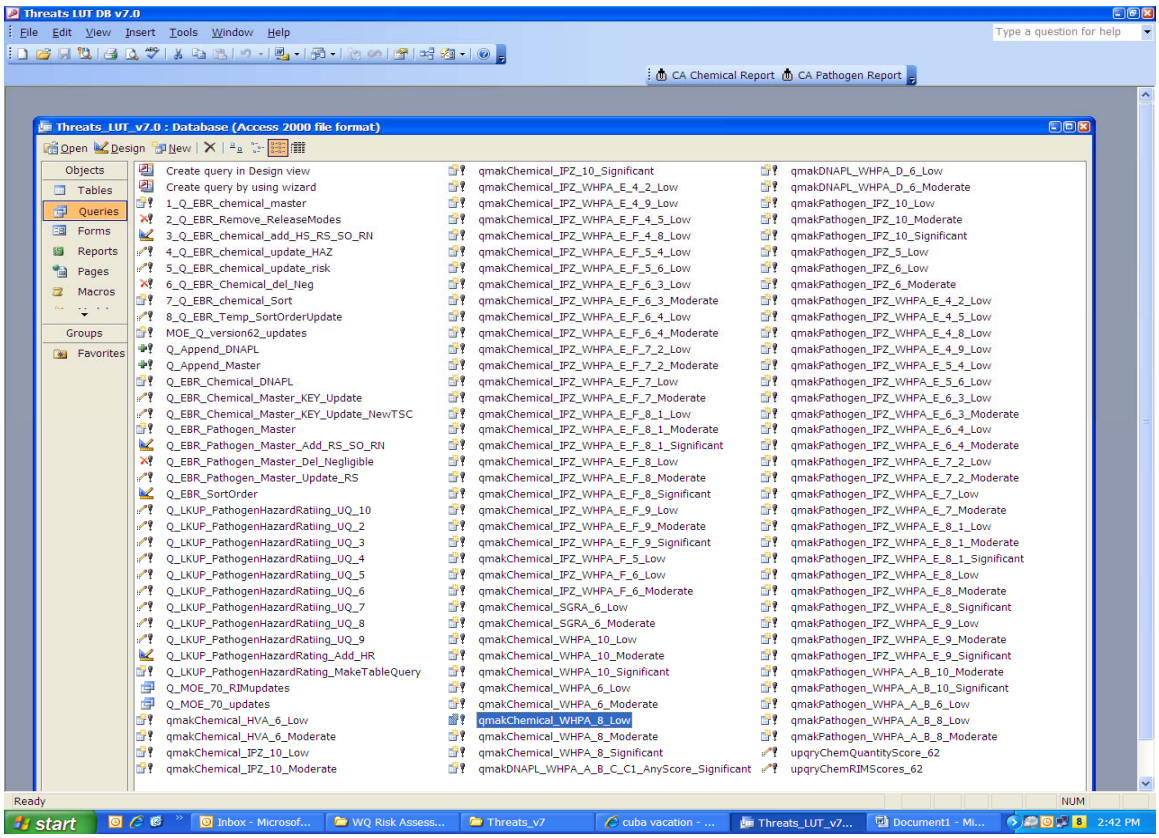
UTRCA Threats Analysis Tool





MOE Threats Analysis Tool Database v7.0





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.

Table A1. Estimated Concentration Levels at the Intake Location

WQ Parameter	Density (kg/m^3)	Constituents	ODWS (mg/L)	% By Weight	Concentration (mg/L)	Dilution in Water Column		Dilution at Intake		Concentration in Water Column (mg/L)		Concentration at Intake (mg/L)	
						MIKE3	CORMIX	MIKE3	CORMIX	MIKE3	CORMIX	MIKE3	CORMIX
Potassic Fertilizer	1281	Potassium Chloride	250	99.8	1278438	100	24	100	24	12784	53268	12784	53268
		Sodium Chloride	250	4	51240	100	24	100	24	512	2135	512	2135
Gasoline	850	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
		Ethylbenzene	0.00240	1.7	14450	128	26	5000	5000	113	556	3	3
		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
Diesel	850	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
		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
Crude Oil	850	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
		m+p-Xylenes	0.30000	0.5	4250	128	26	5000	5000	33	163	1	1
		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
		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

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

c.c. Subhash Verma, Chair SPC
Linda Whalen, General Manager SSMRCA

Ministry of the Environment
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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,

Ian 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

Activity	Vulnerability Score to produce a Significant DWT		Vulnerability Score to produce a Moderate DWT		Vulnerability Score to produce a Low DWT	
	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D
1. The transportation of Petroleum hydrocarbons (PH) F1 (C6-10). 2. PH F1 (C6-10) is transported in a quantity of 25-250 L or 25-250 kg. 3. A spill may result in the release of PH F1 (C6-10) to groundwater or surface water.	---	---	---	---	10 – 7.2	10 - 8
1. The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16). 2. PH F2(>C10-16) are transported in a quantity of 25-250 L or 25-250 kg. 3. A spill may result in the release of PH F2(>C10-16) to groundwater or surface water.	---	---	---	---	10 – 7.2	10 - 8
1. The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34). 2. PH F3 (>C16-34) is transported in a quantity of 25-250 L or 25-250 kg. 3. A spill may result in the release of PH F3 (>C16-34) to groundwater or surface water.	---	---	10	---	9 – 6.4	10 - 8
1. The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50). 2. PH F4(>C34-50) is transported in a quantity of 25-250 L or 25-250 kg. 3. A spill may result in the release of PH F4(>C34-50) to groundwater or surface water.	---	---	---	---	10 - 7	10 - 8
1. The transportation of BTEX compounds. 2. BTEX compounds is transported in a quantity of 25-250 L or 25-250 kg. 3. A spill may result in the release of BTEX compounds to groundwater or surface water.	---	---	10	10	9 – 6.4	8

1. TRANSPORTATION OF FUELS

Activity	Vulnerability Score to produce a Significant DWT		Vulnerability Score to produce a Moderate DWT		Vulnerability Score to produce a Low DWT	
	IPZ-1,2,3 WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3 WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3 WHPA-E	WHPA-A, B, C, C1, D
1. The transportation of Petroleum hydrocarbons (PH) F1 (C6-10). 2. PH F1 (C6-10) is transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of PH F1 (C6-10) to groundwater or surface water.	---	---	10	10	9 – 6.4	8
1. The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16). 2. PH F2 (>C10-16) are transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of PH F2 (>C10-16) to groundwater or surface water.	---	---	10	10	9 – 6.3	8
1. The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34). 2. PH F3 (>C16-34) is transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of PH F3 (>C16-34) to groundwater or surface water.	---	---	10 - 9	10	8.1 – 6	8
1. The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50). 2. PH F4 (>C34-50) is transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of PH F4 (>C34-50) to groundwater or surface water.	---	---	10	10	9 – 6.3	8
1. The transportation of BTEX compounds. 2. BTEX compounds is transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of BTEX compounds to groundwater or surface water.	---	---	10 - 9	10	8.1 - 6	8-6
1. The transportation of Petroleum hydrocarbons (PH) F1 (C6-10). 2. PH F1 (C6-10) is transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of PH F1 (C6-10) to groundwater or surface water.	---	---	10	10	9 – 6.4	8-6

1. TRANSPORTATION OF FUELS

Activity	Vulnerability Score to produce a Significant DWT		Vulnerability Score to produce a Moderate DWT		Vulnerability Score to produce a Low DWT	
	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D
1. The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16). 2. PH F2 (>C10-16) are transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of PH F2 (>C10-16) to groundwater or surface water.	---	---	10	10	9 – 6.3	8-6
1. The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34). 2. PH F3 (>C16-34) is transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of PH F3 (>C16-34) to groundwater or surface water.	---	---	10 - 9	10	8.1 – 6	8-6
1. The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50). 2. PH F4 (>C34-50) is transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of PH F4 (>C34-50) to groundwater or surface water.	---	---	10	10	9 – 6.3	8-6
1. The transportation of BTEX compounds. 2. BTEX compounds is transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of BTEX compounds to groundwater or surface water.	---	---	10 - 9	10-8	8.1 – 6	6

2. TRANSPORTATION OF FERTILIZERS

Activity	Vulnerability Score to produce a Significant DWT		Vulnerability Score to produce a Moderate DWT		Vulnerability Score to produce a Low DWT	
	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D
1. The transportation of Potassium Nitrate fertilizer. 2. Nitrogen Nitrate) is transported in a quantity of 25-250 L or 25-250 kg 3. A spill may result in the release of Nitrogen (Nitrate) to groundwater or surface water.	---	-	10	10	9 - 7	8

2. TRANSPORTATION OF FERTILIZERS

Activity	Vulnerability Score to produce a Significant DWT		Vulnerability Score to produce a Moderate DWT		Vulnerability Score to produce a Low DWT	
	IPZ 1 2 3 WHPA-E	WHPA-A B C C1 D	IPZ 1 2 3 WHPA-E	WHPA-A B C C1 D	IPZ 1 2 3 WHPA-E	WHPA-A B C C1 D
1. The transportation of Potassium Chloride fertilizer 2. Chloride is transported in a quantity of 25-250 L or 25-250 kg 3. A spill may result in the release of Chloride to groundwater or surface water.	---	-	---	-	10 - 7	10-8
1. The transportation of Potassium Sulfate fertilizer 2. Sulfate is transported in a quantity of 25-250 L or 25-250 kg 3. A spill may result in the release of Sulfate to groundwater or surface water.	---	-	---	-	10 - 7	10-8
1. The transportation of Potassium Nitrate fertilizer 2. Nitrogen (Nitrate) is transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of Nitrogen (Nitrate) to groundwater or surface water.	---	-	10 - 9	10	8.1 - 6	8-6
1. The transportation of Potassium Chloride fertilizer. 2. Chloride is transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of Chloride to groundwater or surface water.	---	-	10 - 9	10	8.1 – 6.3	8
1. The transportation of Potassium Sulfate fertilizer. 2. Sulfate is transported in a quantity of >250-2500 L or >250-2500 kg. 3. A spill may result in the release of Sulfate to groundwater or surface water	---	-	10 - 9	10	8.1 – 6.3	8
1. The transportation of Potassium Nitrate fertilizer 2. Nitrogen (Nitrate) is transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of Nitrogen (Nitrate) to groundwater or surface water.	---	-	10 - 8	10-8	7.2 – 5.4	6
1. The transportation of Potassium Chloride fertilizer 2. Chloride is transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of Chloride to groundwater or surface water.	---	-	10 - 8	10-8	7.2 – 5.4	6

2. TRANSPORTATION OF FERTILIZERS

Activity	Vulnerability Score to produce a Significant DWT		Vulnerability Score to produce a Moderate DWT		Vulnerability Score to produce a Low DWT	
	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D	IPZ-1,2,3, WHPA-E	WHPA-A, B, C, C1, D
1. The transportation of Potassium Sulfate fertilizer 2. Sulfate is transported in a quantity of >2500 L or > 2500 kg. 3. A spill may result in the release of Sulfate to groundwater or surface water.	---	-	10 - 8	10-8	7.2 – 5.4	6