# Appendix E

# Ministry of Environment Letters Approving Variances to Technical Rules

File, WMWP 2,4.15

Ministry of the Environment

Source Protection Programs Branch 8<sup>th</sup> Floor

2 St. Clair Ave. West Toronto ON M4V 1L5 Ministère de l'Environnement

Direction des programmes de protection des sources

8<sup>e</sup> étage 2, avenue St. Clair Ouest Toronto (Ontario) M4V 1L5



FEB 4'10 AM11:41

#### Log: ENV1174IT-2010-29

🗌 Water Mgmt.

🗍 Communications 📕 Land Mgmt.

C Foundation

GM GM

La cana ingmi.

Mr. Mark Neufeld Chair, Niagara Peninsula Source Protection Committee 740 Ridge Road North Ridgeway ON LOS 1N0

Dear Mr. Neufeld:

January 27, 1010

I am responding to the December 4, 2009 e-mail sent by Jayme Campbell requesting to use an alternate method under Rule 15.1 of the Director's Technical Rules (Rules) for the completion of the assessment report under the *Clean Water Act* (CWA) for the Niagara Peninsula source protection area.

As set out in your correspondence, your proposal is to use an alternative grid centroid within which you calculated the impervious surface area per 1 km<sup>2</sup> using a node centred on the centroid of the individual IPZs, instead of "with a node of the grid centred on the centroid of the source protection area" as required by Rule 17. In our opinion, the use of this proposed alternative grid centroid will not impact the implementation of the Rule, other than to centre the calculations on the areas of particular interest. Therefore, this approach is equivalent to the method currently required through sub-Rule 16(11) and Rule 17.

In accordance with my authority under Rule 15.1, I hereby provide Director's approval for the use of this alternate method for the Niagara Peninsula source protection area.

Your rationale for the use of an alternative grid and how it is being applied must be included in your assessment report.

.../2

Mr. Mark Neufeld Page 2.

We thank you for your efforts in completing the technical studies in support of the assessment report under the CWA. If you have any questions or require additional information, please contact our office.

Sincerely,

W total

han/Smith, Director Source Protection Programs Branch Ministry of the Environment

cc: Brian Wright, Project Manager, Niagara Peninsula Conservation Authority Jayme D. Campbell, Source Protection Hydrogeologist Heather Malcolmson, Manager, Source Protection Planning Keith Willson, Manager, Source Protection Approvals Maeve McHugh, Liaison Officer, Source Protection Implementation Ministry of the Environment

Source Protection Programs Branch 8<sup>th</sup> Floor 2 St. Clair Ave. West Toronto ON M4V 1L5 Ministère de l'Environnement

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#### Log: ENV1174IT-2010-110 APR29 '10 pm12:55

April 26, 2010

GM	Water	Mgmt.

🗋 Communications 📋 Land Mgmt.

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Mr. Mark Neufeld Chair, Niagara Peninsula Source Protection Committee 740 Ridge Road North Ridgeway ON LOS 1N0

Dear Mr. Neufeld:

I am responding to the April 15, 2010 memo sent by Jayme Campbell requesting approval to use an alternate method under Rule 15.1 of the Director's Technical Rules (Rules) for the completion of the assessment report under the *Clean Water Act* (CWA) for the Niagara Peninsula source protection area.

As set out in the memo, the proposal is to use an alternate method for the identification of drinking water threat conditions (Rule 126). The proposed alternative method would compare the results of sediment analyses to soil criteria, rather than to sediment criteria, which was the method recently used for the Human Health and Ecological Risk Assessment (Goss Gilroy Inc. and intrinsic, 2009) for the Lake Gibson reservoir. This reservoir is part of the DeCew water treatment plant intake protection zone.

As set out in the Lake Gibson risk assessment, soil standards were used to determine if the contamination could pose a risk to human health. Given the results of that report, we agree that determining whether this is a condition under the CWA should also be based on the soil standards.

In accordance with my authority under Rule 15.1, I hereby provide Director's approval for the use of this alternate method for the assessment of whether the sediment in Lake Gibson is a condition at the Decew intake in the Niagara Peninsula source protection area.

Your rationale for the use of this alternative method and how it is being applied must be included in your assessment report. .../2

Mr. Mark Neufeld Page 2.

We thank you for your efforts in completing the technical studies in support of the assessment report under the CWA. If you have any questions or require additional information, please contact our office.

Sincerely,

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

cc: Brian Wright, Project Manager, Niagara Peninsula Conservation Authority Jayme D. Campbell, Source Protection Hydrogeologist Heather Malcolmson, Manager, Source Protection Planning Keith Willson, Manager, Source Protection Approvals Maeve McHugh, Liaison Officer, Source Protection Implementation Ministry of the Environment

Source Protection Programs Branch

8<sup>th</sup> Floor 2 St. Clair Ave. West Toronto ON M4V 1L5 Ministère de l'Environnement

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			Log:	ENV1174IT-2010-	-124	
	GM	🔲 Water Mgmt.				
Mov 6 2010	Communications	🔲 Land Mgmt.				
May 6, 2010	Foundation	<b>—</b>			MAY13 '10 M	3:53
Mr. Mark Neufeld Chair, Niagara Peni	nsula Source Pr	otection Comn	nittee			
Mr. Mark Neufeld Chair, Niagara Peni 740 Ridge Road No	nsula Source Pro	otection Comn	nittee		IIIIIO 7999	

Ridgeway ON LOS 1N0

Dear Mr. Neufeld:

I am writing to you regarding the classification for the Niagara Falls and DeCew intakes under Rule 55.1 of the Director's Technical Rules (the Rules) for the completion of the assessment report under the Clean Water Act (CWA) for the Niagara Peninsula source protection area.

#### Variation from Rule 55.1 – Classification of Intakes

The Director has the authority under Rule 55.1 to notify a Source Protection Committee of the classification of an intake. Based on Rule 55, the Niagara Falls and DeCew intakes are classified as Type C and Type D intakes respectively. Though this letter, I am providing notice that both intakes are to be classified as Type B (connecting channels) intakes.

The Niagara Falls intake is located in the channel of the Welland River which makes it a Type C intake according to Rule 55.0. The intake is located at the mouth of Welland River where it receives 100% of the Niagara River flow, under normal conditions. The flow conditions at the intake are very similar to the Niagara River flow conditions and therefore the intake is best classified as a Type B intake.

With respect to the DeCew intake, there is a lack of certainty as to whether or not this system is in a connecting channel, and therefore, the system could be classified as a Type B or a Type D system depending on local interpretation. The Conservation Authority staff have been working with the understanding that it is a Type B intake. It is apparent that given the lack of certainty, that there is a need to confirm the classification of this intake. Based on various conversations between staff from the Source Protection Programs Branch (SPPB) and

Mr. Mark Neufeld Page 2.

Conservation Authority staff, as well as a meeting held on January 29<sup>th</sup> 2010 with SPPB staff it was determined that there would be little difference in the practical outcome regarding whether the DeCew intake was classified as a Type B or a Type D intake with respect to the delineation and scoring of the IPZ-1 and IPZ-2. There is considerable difference in the delineation of the IPZ-3 and the Type B IPZ-3 delineation is more appropriate for this intake. As such I am formalizing it as a Type B intake.

In accordance with my authority under Rule 55.1, I hereby classify both the Niagara Falls and the DeCew intakes as Type B intakes.

This letter notifying you of the classification of the intakes must be included in your assessment report.

We thank you for your efforts in completing the technical studies in support of the assessment report under the CWA. If you have any questions or require additional information, please contact our office.

Sincerely,

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

Brian Wright, Project Manager, Niagara Peninsula Conservation Authority Jayme D. Campbell, Source Protection Hydrogeologist Heather Malcolmson, Manager, Source Protection Planning Keith Willson, Manager, Source Protection Approvals Maeve McHugh, Liaison Officer, Source Protection Implementation Ministry of the Environment

Source Protection Programs Branch 8<sup>th</sup> Floor 2 St. Clair Ave. West Toronto ON M4V 1L5 Ministère de l'Environnement

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Direction des programmes de protection des sources 8<sup>e</sup> étage 2, avenue St. Clair Ouest



#### Log: ENV1174IT-2010-162

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June 21, 2010

Mr. Mark Neufeld Chair, Niagara Peninsula Source Protection Committee 740 Ridge Road North Ridgeway ON LOS 1N0

Dear Mr. Neufeld:

I am responding to the June 3, 2010 memo sent by Jayme Campbell requesting approval to use an alternate method under Rule 15.1 of the Director's Technical Rules (Rules) for the completion of the assessment report under the *Clean Water Act* (CWA) for the Niagara Peninsula source protection area.

As set out in the memo, the proposal is to use an alternate method for the identification of drinking water threat conditions (Rule 126). This proposed alternative method is to compare the results of the sediment analyses with soil criteria, rather than with sediment criteria as stipulated in Rule 126. The memo requests approval to use this alternative method for the Niagara Falls, Fort Erie/Rosehill, Grimsby, Welland and Port Colborne water treatment plant intakes. This alternative method has already been approved for the DeCew water treatment plant intake protection zones.

The rationale for this alternative method is to be consistent with the approach at the DeCew water treatment plant. The original need for this alternative method was first indicated by staff from the MOE Niagara District office. They supported the conclusions of a Human Health and Ecological Risk Assessment (Goss Gilroy Inc. and Intrinsic, 2009) recently completed for the Lake Gibson reservoir (part of the DeCew water treatment plant system) which compared sediment data to soil criteria for its analysis.

As set out in the Lake Gibson risk assessment, soil standards were used to determine if the contamination could pose a risk to human health. Given the results of that report, we agree that determining whether this is a condition under the CWA should also be based on the soil standards.

In accordance with my authority under Rule 15.1, I hereby provide Director's approval for the use of this alternate method for the assessment of the Niagara Falls, Fort Erie/Rosehill, Grimsby, Welland and Port Colborne water treatment plant intakes in the Niagara Peninsula source protection area.

Your rationale for the use of this alternative method and how it is being applied must be included in your assessment report. .../2

We thank you for your efforts in completing the technical studies in support of the assessment report under the CWA. If you have any questions or require additional information, please contact our office.

Sincerely,

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

cc: Brian Wright, Project Manager, Niagara Peninsula Conservation Authority Jayme D. Campbell, Source Protection Hydrogeologist Heather Malcolmson, Manager, Source Protection Planning Keith Willson, Manager, Source Protection Approvals Maeve McHugh, Liaison Officer, Source Protection Implementation **Ministry of** the Environment Source Protection Programs

Branch

14<sup>th</sup> Floor 40 St. Clair Ave. West Toronto ON M4V 1M2

#### Ministère de l'Environnement

Direction des programmes de protection des sources

14<sup>e</sup> étage40, avenue St. Clair OuestToronto (Ontario) M4V 1M2



ENV1174IT-2011-38

May 16, 2011

Mr. Brian Wright Source Protection Coordinator Niagara Peninsula Source Protection Area 250 Thorold Road West, 3rd Floor Welland, Ontario, L3C 3W2

#### Dear Mr. Wright:

We are in receipt of your letter requesting the Director's opinion regarding a hazard rating for the transportation of specified substances under the technical rules.

In accordance with my authority under Rules 119, 120, or 121, I am of the opinion that the hazard rating is greater than 4. Based on this, Table 1 provides information on the activity, circumstance and areas where the activity is a significant, moderate or low drinking water threat related to your proposed request as per the attached table. The transportation of materials as set out in Table 1 has been approved as local threats in the Niagara Peninsula Source Protection Area.

I recognise that the approval of this local threat does not align with timelines set for the submission of your amended/updated assessment report. Therefore, the local threat is approved for consideration in future updated assessment reports only. Your rationale for the inclusion of this local threat along with a copy of this letter must be included in the updated assessment report when submitted.

Sincerely

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

 Keith Willson, Manager, Source Protection Approvals Heather Malcolmson, Manager, Source Protection Planning Melanie Ward, Team Lead, Source Protection Approvals Wesley Wright, Provincial Liaison Officer.

# Table 1: ACTIVITY, CIRCUMSTANCE, AND AREAS WHERE THE ACTIVITY IS SIGNIFICANT, MODERATE OR LOW DWT

# 1) Transportation Of Organic Solvents

Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a Low DWT
	IPZ-1,2,3	IPZ-1,2,3	IPZ-1,2,3
1. The transportation of Carbon Tetrachloride.		······································	
2. Carbon Tetrachloride is transported in a quantity of 25-250 L or 25-250 kg		10	9-6.4
3. A spill may result in the release of Carbon Tetrachloride to surface water.			
1. The transportation of Chloroform.			
2. Chloroform is transported in a quantity of 25-250 L or 25-250 kg	·	10	9 - 7
3. A spill may result in the release of Chloroform to surface water.			
1. The transportation of Methylene Chloride (dichloromethane).		· ·	
2. Methylene Chloride (dichloromethane) is transported in a quantity of 25-250 L or			
25-250 kg	1		10 - 7
3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface			
water.			
1. The transportation of Pentachlorophenol.			
2. Pentachlorophenol is transported in a quantity of 25-250 L or 25-250 kg		10	9 - 7
3. A spill may result in the release of Pentachlorophenol to surface water.			
1. The transportation of Carbon Tetrachloride.			•
2. Carbon Tetrachloride is transported in a quantity of greater than 250 but not more		10 - 9	81-6
than 2500 L or greater than 250 but not more than 2500 kg.		10 /	0.1 0
3. A spill may result in the release of Carbon Tetrachloride to surface water.			
1. The transportation of Chloroform.			
2. Chloroform is transported in a quantity of greater than 250 but not more than 2500 L		10 - 9	81-6
or greater than 250 but not more than 2500 kg.		10 2	0.1 0
3. A spill may result in the release of Chloroform to surface water.			
1. The transportation of Methylene Chloride (dichloromethane).			
2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than 250			
but not more than 2500 L or greater than 250 but not more than 2500 kg.		10	9 – 6.3
3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface			
water.			

PPZ-1,2,3PPZ-1,2,3PPZ-1,2,31. The transportation of Pentachlorophenol. 2. Pentachlorophenol is transported in a quantity of greater than 250 but not more than 2500 L or greater than 250 but not more than 2500 kg. 3. A spill may result in the release of Pentachlorophenol to surface water10 - 98.1 - 62. Carbon Tetrachloride. 2. Carbon Tetrachloride. 2. Carbon Tetrachloride is transported in a quantity of greater than 2500 L or greater than 2500 kg. 3. A spill may result in the release of Carbon Tetrachloride to surface water.109 - 87.2 - 5.41. The transportation of Chloroform. 2. Chloroform is transported in a quantity of greater than 2500 L or greater than 2500 kg. 3. A spill may result in the release of Chloroform to surface water.10 - 87.2 - 5.41. The transportation of Methylene Chloride (dichloromethane). 2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than 2500 L or gr	Activity	Vulnerability Score to produce a Significant DWT	Vulnerability Score to produce a Moderate DWT	Vulnerability Score to produce a Low DWT
1. The transportation of Pentachlorophenol.       2. Pentachlorophenol is transported in a quantity of greater than 250 but not more than 250 but not may result in the release of Methylene Chloride (dichloromethane) to surfa		IPZ-1,2,3	IPZ-1,2,3	IPZ-1,2,3
2. Pentachlorophenol is transported in a quantity of greater than 250 but not more than        10 - 9       8.1 - 6         2. A spill may result in the release of Pentachlorophenol to surface water.        10 - 9       8.1 - 6         3. A spill may result in the release of Pentachlorophenol to surface water.       10       9 - 8       7.2 - 5.4         3. A spill may result in the release of Carbon Tetrachloride to surface water.       10       9 - 8       7.2 - 5.4         1. The transportation of Chloroform.       2. Carbon Tetrachloride is a quantity of greater than 2500 L or greater than 2500 kg.        10 - 8       7.2 - 5.4         3. A spill may result in the release of Chloroform to surface water.       10       9 - 8       7.2 - 5.4         1. The transportation of Chloroform.       2. Chloroform is transported in a quantity of greater than 2500 L or greater than 2500 kg.        10 - 8       7.2 - 5.4         3. A spill may result in the release of Chloroform to surface water.        10 - 8       7.2 - 5.4         1. The transportation of Methylene Chloride (dichloromethane).        10 - 8.1       8 - 5.6         2. Methylene Chloride (dichloromethane) to surface water.        10 - 8.1       8 - 5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.        10 - 8       7.2 - 5.4	1. The transportation of Pentachlorophenol.		······································	
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2. Chloroform is transported in a quantity of greater than 2500 L or greater than 2500 $$ $10-8$ $7.2-5.4$ 3. A spill may result in the release of Chloroform to surface water. $$ $10-8$ $7.2-5.4$ 1. The transportation of Methylene Chloride (dichloromethane). $$ $10-8.1$ $8-5.6$ 2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than 2500 L or greater than 2500 kg. $$ $10-8.1$ $8-5.6$ 3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water. $$ $10-8.1$ $8-5.6$ 1. The transportation of Pentachlorophenol. $$ $10-8$ $7.2-5.4$ 2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than 2500 kg. $$ $10-8$ $7.2-5.4$ 3. A spill may result in the release of Pentachlorophenol. $$ $10-8$ $7.2-5.4$	1. The transportation of Chloroform.			
kg.       10-8       7.2-5.4         3. A spill may result in the release of Chloroform to surface water.       10-8       7.2-5.4         1. The transportation of Methylene Chloride (dichloromethane).       10-8.1       8-5.6         2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than       10-8.1       8-5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.       10-8.1       8-5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface       10-8       7.2-5.4         3. A spill may result in the release of Pentachlorophenol.       10-8       7.2-5.4	2. Chloroform is transported in a quantity of greater than 2500 L or greater than 2500		10 0	
3. A spill may result in the release of Chloroform to surface water.       1. The transportation of Methylene Chloride (dichloromethane).         2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than        10-8.1       8-5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.        10-8.1       8-5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.        10-8.1       8-5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface        10-8.1       8-5.6         3. A spill may result in the release of Pentachlorophenol.        10-8       7.2-5.4	kg.	,	10 - 8	7.2-5.4
1. The transportation of Methylene Chloride (dichloromethane).         2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than         2500 L or greater than 2500 kg.         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.         1. The transportation of Pentachlorophenol.         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         3. A spill may result in the release of Pentachlorophenol to surface water.	3. A spill may result in the release of Chloroform to surface water.			
2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than        10 - 8.1       8 - 5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.        10 - 8.1       8 - 5.6         1. The transportation of Pentachlorophenol.       2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than        10 - 8       7.2 - 5.4         3. A spill may result in the release of Pentachlorophenol to surface water.        10 - 8       7.2 - 5.4	1. The transportation of Methylene Chloride (dichloromethane).			
2500 L or greater than 2500 kg.        10-8.1       8-5.6         3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.        10-8.1       8-5.6         1. The transportation of Pentachlorophenol.       2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than 2500 kg.        10-8       7.2-5.4         3. A spill may result in the release of Pentachlorophenol to surface water.        10-8       7.2-5.4	2. Methylene Chloride (dichloromethane) is transported in a quantity of greater than			
3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface water.        10 - 8       7.2 - 5.4         1. The transportation of Pentachlorophenol.        10 - 8       7.2 - 5.4         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than 2500 kg.        10 - 8       7.2 - 5.4         3. A spill may result in the release of Pentachlorophenol to surface water.        10 - 8       7.2 - 5.4	2500 L or greater than 2500 kg.		10 - 8.1	8 - 5.6
water.       1. The transportation of Pentachlorophenol.         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2500 kg.         3. A spill may result in the release of Pentachlorophenol to surface water.	3. A spill may result in the release of Methylene Chloride (dichloromethane) to surface			
1. The transportation of Pentachlorophenol.         2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2500 kg.         3. A spill may result in the release of Pentachlorophenol to surface water.	water.			
2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than         2500 kg.         3. A spill may result in the release of Pentachlorophenol to surface water.	1. The transportation of Pentachlorophenol.		· · · · · ·	
2500 kg.      10 - 8     7.2 - 5.4       3. A spill may result in the release of Pentachlorophenol to surface water.      10 - 8	2. Pentachlorophenol is transported in a quantity of greater than 2500 L or greater than		10 0	
3. A spill may result in the release of Pentachlorophenol to surface water.	2500 kg.		10 - 8	7.2-5.4
	3. A spill may result in the release of Pentachlorophenol to surface water.			

### 2) TRANSPORTATION OF DNAPLs

Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a
	DWT	DWT	
	<b>IPZ-1,2,3</b>	IPZ-1,2,3	<b>IPZ-1,2,3</b>
1. The transportation of Dioxane-1,4.			
2. Dioxane-1,4 is transported in a quantity of 25-250 L or 25-250 kg.			10 - 7
3. A spill may result in the release of Dioxane-1,4 to surface water.			
1. The transportation of Polycyclic Aromatic Hydrocarbons (PAHs).			
2. PAHs are transported in a quantity of 25-250 L or 25-250 kg.	·	10	9-6.3
3. A spill may result in the release of PAHs to surface water.			
1. The transportation of Tetrachloroethylene (PCE).			
2. PCE is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of PCE to surface water.			
1. The transportation of Trichloroethylene (TCE).			
2. TCE is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of TCE to surface water.			
1. The transportation of Vinyl chloride.	•		
2. Vinyl chloride is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of Vinyl chloride to surface water.			
1. The transportation of Dioxane-1,4.			
2. Dioxane-1,4 is transported in a quantity of greater than 250 but not more than 2500		10	9 – 6 3
L or greater than 250 but not more than 2500 kg.		10	y 0.5
3. A spill may result in the release of Dioxane-1,4 to surface water.			
1. The transportation of Polycyclic Aromatic Hydrocarbons (PAHs).	· ·		
2. PAHs are transported in a quantity of greater than 250 but not more than 2500 L or		10-81	8-56
greater than 250 but not more than 2500 kg.		10 0.1	0 5.0
3. A spill may result in the release of PAHs to surface water.			
1. The transportation of Tetrachloroethylene (PCE).			
2. PCE is transported in a quantity of greater than 250 but not more than 2500 L or		10-9	81-6
greater than 250 but not more than 2500 kg.		10-9	0.1 0
3. A spill may result in the release of PCE to surface water.			
1. The transportation of Trichloroethylene (TCE).			
2. TCE is transported in a quantity of greater than 250 but not more than 2500 L or		10 - 9	81-6
greater than 250 but not more than 2500 kg.		10-7	0.1 - 0
3. A spill may result in the release of TCE to surface water.			

Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a
	DWT	DWT	Eow DWT
	<b>IPZ-1,2,3</b>	IPZ-1,2,3	IPZ-1,2,3
1. The transportation of Vinyl chloride.			
2. Vinyl chloride is transported in a quantity of greater than 250 but not more than		10 0	816
2500 L or greater than 250 but not more than 2500 kg.		10 - 9	0.1-0
3. A spill may result in the release of Vinyl chloride to surface water.			
1. The transportation of Dioxane-1,4.			
2. Dioxane-1,4 is transported in a quantity of greater than 2500 L or greater than 2500		10 8 1	8 56
kg.		$10 \div 0.1$	8-5.0
3. A spill may result in the release of Dioxane-1,4 to surface water.			
1. The transportation of Polycyclic Aromatic Hydrocarbons (PAHs).			
2. PAHs are transported in a quantity of greater than 2500 L or greater than 2500 kg.	10	9 - 8	7.2 - 5
3. A spill may result in the release of PAHs to surface water.			
1. The transportation of Tetrachloroethylene (PCE).		,	
2. PCE is transported in a quantity of greater than 2500 L or greater than 2500 kg.		10 - 8	7.2 - 5.4
3. A spill may result in the release of PCE to surface water.			
1. The transportation of Trichloroethylene (TCE).			
2. TCE is transported in a quantity of greater than 2500 L or greater than 2500 kg.		10 - 8	7.2 – 5.4
3. A spill may result in the release of TCE to surface water.			
1. The transportation of Vinyl chloride.			
2. Vinyl chloride is transported in a quantity of greater than 2500 L or greater than		10 - 8	72 54
2500 kg.		10 - 0	
3. A spill may result in the release of Vinyl chloride to surface water.	· · · · ·		

## 3) TRANSPORTATION OF FUELS

Activity	Vulnerability Score to	Vulnerability Score to	Vulnerability Score to
	produce a Significant	produce a Woderate	FORUCE a
	IPZ-1.2.3	IPZ-1.2.3	IPZ-1,2,3
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.			10 - 8
3. A spill may result in the release of PH F1 (C6-10) to surface water.			•
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.			10 - 7
3. A spill may result in the release of PH F2(>C10-16) to surface water.			
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.	-	. 10	9 - 7
3. A spill may result in the release of PH F3 (>C16-34) to surface water.		-	
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.			10 - 7
3. A spill may result in the release of PH F4(>C34-50) to surface water.			
1. The transportation of BTEX compounds.			
2. BTEX compounds is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of BTEX compounds to surface water.			·
1. The transportation of Petroleum hydrocarbons (PH) F1 (C6-10).			
2. PH F1 (C6-10) is transported in a quantity of greater than 250 but not more than		10	9 - 64
2500 L or greater than 250 but not more than 2500 kg.			9 0.4
3. A spill may result in the release of PH F1 (C6-10) to surface water.			
1. The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16).			
2. PH F2 (>C10-16) are transported in a quantity of greater than 250 but not more		<sup>`</sup> 10	9-63
than 2500 L or greater than 250 but not more than 2500 kg.			0.5
3. A spill may result in the release of PH F2 (>C10-16) to surface water.			
1. The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34).			
2. PH F3 (>C16-34) is transported in a quantity of greater than 250 but not more than		10 - 9	81-6
2500 L or greater than 250 but not more than 2500 kg.			
3. A spill may result in the release of PH F3 (>C16-34) to surface water.	-		
1. The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50).			
2. PH F4 (>C34-50) is transported in a quantity of greater than 250 but not more than		10	9-63
2500 L or greater than 250 but not more than 2500 kg.		10	
3. A spill may result in the release of PH F4 (>C34-50) to surface water.			

Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a
	DWT	DWT	
1 The transportation of RTFX compounds	د <i>ک</i> ر۲-۲٫۲	IPZ-1,2,3	IPZ-1,2,3
2. BTEX compounds is transported in a quantity of greater than 250 but not more than			
2500  L or greater than 250 but not more than 2500 kg	·	10 - 9	8.1 - 6
3. A spill may result in the release of BTEX compounds to surface water.			
1. The transportation of Petroleum hydrocarbons (PH) F1 (C6-10).			
2. PH F1 (C6-10) is transported in a quantity of greater than 2500 L or greater than			
2500 kg.		10 - 9	8.1 - 6
3. A spill may result in the release of PH F1 (C6-10) to surface water.			
1. The transportation of Petroleum hydrocarbons (PH) F2 (>C10-16).			
2. PH F2 (>C10-16) are transported in a quantity of greater than 2500 L or greater		10 0 1	0.54
than 2500 kg.		10-8.1	8-5.6
3. A spill may result in the release of PH F2 (>C10-16) to surface water.			
1. The transportation of Petroleum hydrocarbons (PH) F3 (>C16-34).			
2. PH F3 (>C16-34) is transported in a quantity of greater than 2500 L or greater than		10.8	72 54
2500 kg.		10 - 8	1.2 - 3.4
3. A spill may result in the release of PH F3 (>C16-34) to surface water.			
1. The transportation of Petroleum hydrocarbons (PH) F4 (>C34-50).			
2. PH F4 (>C34-50) is transported in a quantity of greater than 2500 L or greater than		10-81	8 56
2500 kg.		10 - 0.1	8-5:6
3. A spill may result in the release of PH F4 (>C34-50) to surface water.		-	
1. The transportation of BTEX compounds.	-		
2. BTEX compounds is transported in a quantity of greater than 2500 L or greater		10 - 8	72-54
than 2500 kg.		10 0	
3. A spill may result in the release of BTEX compounds to surface water.			· · · · · · · · · · · · · · · · · · ·

### 4) TRANSPORTATION OF PESTICIDES / HERBICIDES

Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to
	DWŤ	DWT	Low DWT
	PZ-1,2,3	IPZ-1,2,3	IPZ-1,2,3
1. The transportation of Atrazine.			
2. Atrazine is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of Atrazine to surface water.			,
1. The transportation of Diacamba.			
2. Diacamba are transported in a quantity of 25-250 L or 25-250 kg.		10 .	9 - 7
3. A spill may result in the release of Diacamba to surface water.	,		
1. The transportation of D-2,4 (Dichlorophenoxyacetic Acid).			
2. D-2,4 is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of D-2,4 to surface water.			
1. The transportation of Dichloropropene-1,3.			
2. Dichloropropene-1,3 is transported in a quantity of 25-250 L or 25-250 kg.			10 - 7
3. A spill may result in the release of Dichloropropene-1,3 to surface water.			· · ·
1. The transportation of Glyphosphate.			
2. Glyphosphate is transported in a quantity of 25-250 L or 25-250 kg.			10 - 8
3. A spill may result in the release of Glyphosphate to surface water.			
1. The transportation of MCPA.			
2. MCPA is transported in a quantity of 25-250 L or 25-250 kg.		10 - 9	8.1 - 6
3. A spill may result in the release of MCPA to surface water.			
1. The transportation of MCPB.			
2. MCPB is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of MCPB to surface water.			
1. The transportation of Mecoprop.			
2. Mecoprop is transported in a quantity of 25-250 L or 25-250 kg.		10	9-6.3
3. A spill may result in the release of Mecoprop to surface water.			
1. The transportation of Metalaxyl.	· · ·		
2. Metalaxyl is transported in a quantity of 25-250 L or 25-250 kg.			10 - 7
3. A spill may result in the release of Metalaxyl to surface water.			
1. The transportation of Metolachlor or s-Metolachlor.			1
2. Metolachlor or s-Metolachlor is transported in a quantity of 25-250 L or 25-250 kg.			10 - 8
3. A spill may result in the release of Metolachlor or s-Metolachlor to surface water.			
1. The transportation of Pendimethalin.			
2. Pendimethalin is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of Pendimethalin to surface water.			

14-075

Activity	Vulnerability Score to	Vulnerability Score to	Vulnerability Score to
	DWT	DWT	Low DWT
	IPZ-1.2.3	PZ-1.2.3	IPZ-1.2.3
1. The transportation of 2,4,5-Trichlorophenoxyacetic acid.			
2. 2,4,5-Trichlorophenoxyacetic acid compounds is transported in a quantity of 25-		· · ·	
250 L or 25-250 kg.		10	9-7
3. A spill may result in the release of 2,4,5-Trichlorophenoxyacetic acid compounds			
to surface water.			
1. The transportation of Atrazine.			
2. Atrazine is transported in a quantity of greater than 250 but not more than 2500 L	. ·	10 0	01 (
or greater than 250 but not more than 2500 kg.		10 - 9	8.1 - 6
3. A spill may result in the release of Atrazine to surface water.			
1. The transportation of Diacamba.			
2. Diacamba are transported in a quantity of greater than 250 but not more than 2500		. 10 0	81 (
L or greater than 250 but not more than 2500 kg.		10 - 9	8.1 - 0
3. A spill may result in the release of Diacamba to surface water.			
1. The transportation of D-2,4 (Dichlorophenoxyacetic Acid).			
2. D-2,4 is transported in a quantity of greater than 250 but not more than 2500 L or		10 0	<b>91</b>
greater than 250 but not more than 2500 kg.		10 - 9	8.1 - 0
3. A spill may result in the release of D-2,4 to surface water.			
1. The transportation of Dichloropropene-1,3.			
2. Dichloropropene-1,3 is transported in a quantity of greater than 250 but not more		10	0 6 2
than 2500 L or greater than 250 but not more than 2500 kg.		10	9-0.3
3. A spill may result in the release of Dichloropropene-1,3 to surface water.			
1. The transportation of Glyphosphate compounds.			
2. Glyphosphate compounds is transported in a quantity of greater than 250 but not		10	9 61
more than 2500 L or greater than 250 but not more than 2500 kg.		10	9-0.4
3. A spill may result in the release of Glyphosphate compounds to surface water.	· · · · · · · · · · · · · · · · · · ·		
1. The transportation of MCPA.			
2. MCPA is transported in a quantity of greater than 250 but not more than 2500 L or		10 - 8	72 51
greater than 250 but not more than 2500 kg.		10 - 0	7.2 - J. <del>4</del>
3. A spill may result in the release of MCPA to surface water.			
1. The transportation of MCPB.	. ·		
2. MCPB is transported in a quantity of greater than 250 but not more than 2500 L or		10_0	81-6
greater than 250 but not more than 2500 kg.		10 - 2	0.1 - 0
3. A spill may result in the release of MCPB to surface water.	· · · ·		

Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a
	DWT	DWT S	Low DWT
1 The transportation of Meconrop	11.2-1,2,0	IF Z-1,2,3	<b>HZ:1;2;</b> 3
2. Mecoprop is transported in a quantity of greater than 250 but not more than $2500 \text{ L}$ .			
or greater than 250 but not more than 2500 kg.		10-8.1	8 – 5.6
3. A spill may result in the release of Mecoprop to surface water.			
1. The transportation of Metalaxyl.			
2. Metalaxyl is transported in a quantity of greater than 250 but not more than 2500 L		10	0 (2
or greater than 250 but not more than 2500 kg.		10	9 - 6.3
3. A spill may result in the release of Metalaxyl to surface water.			
1. The transportation of Metolachlor or s-Metolachlor.			
2. Metolachlor or s-Metolachlor is transported in a quantity of greater than 250 but		10	0 7
not more than 2500 L or greater than 250 but not more than 2500 kg.		10 .	9-7
3. A spill may result in the release of Metolachlor or s-Metolachlor to surface water.			
1. The transportation of Pendimethalin.		•	
2. Pendimethalin is transported in a quantity of greater than 250 but not more than		10 - 9	81-6
2500 L or greater than 250 but not more than 2500 kg.		10-9	8.1 - 0
3. A spill may result in the release of Pendimethalin to surface water.			
1. The transportation of 2,4,5-Trichlorophenoxyacetic acid.			
2. 2,4,5-Trichlorophenoxyacetic acid is transported in a quantity of greater than 250			
but not more than 2500 L or greater than 250 but not more than 2500 kg.	·	10 - 9	8.1 - 6
3. A spill may result in the release of 2,4,5-Trichlorophenoxyacetic acid to surface			
water.		· · · · ·	
1. The transportation of Atrazine.		10.0	
2. Atrazme is transported in a quantity of greater than 2500 L or greater than 2500 kg.		10-8	7.2 - 5.4
3. A spill may result in the release of Atrazine to surface water.	·		
1. The transportation of Diacamba.			
2. Diacamoa are transported in a quantity of greater than 2500 L or greater than 2500		10 - 8	7.2 – 5.4
kg.			
5. A spin may result in the release of Diacamba to surface water.	1		
1. The transportation of D-2,4 (Dictionorphenoxyacetic Acid).		10.8	70 54
2. D-2,4 is italisponed in a quality of greater than 2500 E of greater than 2500 kg.		10-8	7.2-5.4
1. The transportation of Dichloropropage 1.3			· · · · · · · · · · · · · · · · · · ·
2 Dichloronronene-13 is transported in a quantity of greater than 2500 L or greater			
than 2500 kg		10-8.1	8-5.6
3. A spill may result in the release of Dichloropropene-1,3 to surface water.			

Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a
	DWT	DWT	Low DWT
1 The transmission of Ob-1 and the set	IPZ-1,2,5	IPZ-1,2,3	IPZ-1,2,3
1. The transportation of Gryphosphate compounds.			
2. Oryphosphale compounds is transported in a quantity of greater than 2500 L or		10-9	8.1 - 6
greater than 2500 kg.			· · ·
3. A spin may result in the release of Gryphosphate compounds to surface water.			
1. The transportation of MCPA.			
2. MCPA is transported in a quantity of greater than 2500 L or greater than 2500 kg.	10	9-7.2	7-4.9
3. A spill may result in the release of MCPA to surface water.	· · · · · · · · · · · · · · · · · · ·		
1. The transportation of MCPB.			
2. MCPB is transported in a quantity of greater than 2500 L or greater than 2500 kg.	· ·	10 - 8	7.2 – 5.4
3. A spill may result in the release of MCPB to surface water.			
1. The transportation of Mecoprop.			
2. Mecoprop is transported in a quantity of greater than 2500 L or greater than 2500	10	9 - 8	72-5
kg.	10	y = 0	1.2 - 5
3. A spill may result in the release of Mecoprop to surface water.			
1. The transportation of Metalaxyl.			
2. Metalaxyl is transported in a quantity of greater than 2500 L or greater than 2500		10 - 8 1	8-56
kg.		10 - 0.1	8-5.0
3. A spill may result in the release of Metalaxyl to surface water.		· · · ·	
1. The transportation of Metolachlor or s-Metolachlor.			
2. Metolachlor or s-Metolachlor is transported in a quantity of greater than 2500 L or	<b></b>	10-9	81-6
greater than 2500 kg.		10-9	0.1 - 0
3. A spill may result in the release of Metolachlor or s-Metolachlor to surface water.			
1. The transportation of Pendimethalin.	-		
2. Pendimethalin is transported in a quantity of greater than 2500 L or greater than		10 - 8	72-54
2500 kg.		10-0	7.2-5:4
3. A spill may result in the release of Pendimethalin to surface water.			
1. The transportation of 2,4,5-Trichlorophenoxyacetic acid.			
2. 2,4,5-Trichlorophenoxyacetic acid is transported in a quantity of greater than 2500			
L or greater than 2500 kg.		· 10 - 8	7.2 - 5.4
3. A spill may result in the release of 2,4,5-Trichlorophenoxyacetic acid to surface			
water.			

# 5) TRANSPORTATION OF OTHER CHEMICALS

Activity	Vulnerability Score to	Vulnerability Score to	Vulnerability Score to
	produce a Significant	produce a Moderate	Low DWT
	<b>IPZ-1;2,3</b>	PZ-1,2,3	<b>IPZ-1,2,3</b>
1. The transportation of Arsenic.			
2. Arsenic is transported in a quantity of 25-250 L or 25-250 kg.		10 - 9	8.1 - 6
3. A spill may result in the release of Arsenic to surface water.			· · · · · · · · · · · · · · · · · · ·
1. The transportation of Barium.			
2. Barium are transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of Barium to surface water.		· .	
1. The transportation of Cadmium.			
2. Cadmium is transported in a quantity of 25-250 L or 25-250 kg.		10	9-6.3
3. A spill may result in the release of Cadmium to surface water.			
1. The transportation of Chloride.			
2. Chloride is transported in a quantity of 25-250 L or 25-250 kg.			10 - 7
3. A spill may result in the release of Chloride to surface water.			-
1. The transportation of Chromium VI.			
2. Chromium VI is transported in a quantity of 25-250 L or 25-250 kg.		10	9 – 6.3
3. A spill may result in the release of Chromium VI to surface water.			
1. The transportation of Copper.			
2. Copper is transported in a quantity of 25-250 L or 25-250 kg.			10 - 7
3. A spill may result in the release of Copper to surface water.			-
1. The transportation of Cyanide.			
2. Cyanide is transported in a quantity of 25-250 L or 25-250 kg.		10	9-6.4
3. A spill may result in the release of Cyanide to surface water.			
1. The transportation of Lead.			
2. Lead is transported in a quantity of 25-250 L or 25-250 kg.		10	9-6.3
3. A spill may result in the release of Lead to surface water.			
1. The transportation of Mercury.			
2. Mercury is transported in a quantity of 25-250 L or 25-250 kg.	`	10 - 9	8.1 - 6
3. A spill may result in the release of Mercury to surface water.			
1. The transportation of Nitrogen (Nitrate).	1		
2. Nitrogen (Nitrate) is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Selenium.			
2. Selenium is transported in a quantity of 25-250 L or 25-250 kg.		10	9 - 7
3. A spill may result in the release of Selenium to surface water.	· ·		

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Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a
	DWT	DWT	Low DWT
1. The transportation of Cilvar	<b>IPZ-1,2,3</b>	<b>IPZ-1,2,3</b>	IPZ-1,2,3
2. Silver is transported in a quantity of 25.250 L or 25.250 km			· ·
2. Silver is transported in a quantity of 25-250 L of 25-250 kg.		10	9-7
5. A spin may result in the release of Silver to surface water.			
1. The transportation of Southern.			
2. Solution is transported in a quantity of 25-250 L of 25-250 kg.			10 - 7
J. A spin may result in the release of Sodium to surface water.			
2. Argonia is transported in a quantity of encoder then 250 but the day of a 2500 L			
2. Also in a sported in a quantity of greater than 250 but not more than 2500 L or		10 - 8	7.2 - 5.4
2 A apill move receive in the release of Areasis to surface surface			
J. The transmostation of Deviver	· · · · ·		· · · · · · · · · · · · · · · · · · ·
1. The transportation of Barlum.			
2. Bartoni are transported in a quantity of greater than 250 but not more than 2500 L		10 - 9	8.1 - 6
of greater than 250 but not more than 2500 kg.			
5. A spin may result in the release of Bartum to surface water.	<u>_</u>		
1. The transportation of Cadmium.			
2. Cadminum is transported in a quantity of greater than 250 but not more than 2500 L		10 - 8.1	8 - 5.6
of greater than 250 but not more than 2500 kg.			
J. The transportation of Chloride			
2. Chloride is transported in a quantity of granter than 250 but not more than 2500 I			
2. Children is transported in a quantity of greater than 250 but not more than 2500 L		10 - 9	8.1 - 6.3
of greater than 250 but not more than 2500 kg.			· · · · ·
J. The transportation of Chromium VI common de			
2. Chromium VI compounds is transported in a quantity of granter than 250 but not			
2. Chronnum vi compounds is transported in a quantity of greater than 250 but not		10 - 8.1	8-5.6
A spill may result in the release of Chromium VI compounds to surface water			
J. The transportation of Connor		······	
2. Conner is transported in a quantity of greater than 250 but not more than 2500 L and			
2. Coppet is transported in a quantity of greater than 250 but not more than 2500 L or		10 - 9	8.1-6.3
3. A spill may result in the release of Copper to surface water			
1. The transportation of Cyanida			
2. Chandle is transported in a quantity of greater than 250 but not more than 2500 I			
or greater than 250 but not more than 2500 kg		10 - 9	8.1 - 6
3. A spill may result in the release of Cyanide to surface water			

Activity	Vulnerability Score to produce a Significant DWT	Vulnerability Score to produce a Moderate DWT	Vulnerability Score to produce a
	IPZ-1,2,3	PZ-1,2,3	<b>PZ-1,2,3</b>
1. The transportation of Lead.	and a second	Charles and a second	ar Manine / An , i waar aan in aan amaan ahaan ahaa
2. Lead is transported in a quantity of greater than 250 but not more than 2500 L or		10-81	8-56
greater than 250 but not more than 2500 kg.		10 - 0.1	0 - 5.0
3. A spill may result in the release of Lead to surface water.			-
1. The transportation of Mercury.			
2. Mercury is transported in a quantity of greater than 250 but not more than 2500 L		10 - 8	72 - 54
or greater than 250 but not more than 2500 kg.		10 0	1.2 5.1
3. A spill may result in the release of Mercury to surface water.			
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 250 but not more than		10 - 9	81-6
2500 L or greater than 250 but not more than 2500 kg.			0 0
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Selenium.			
2. Selenium is transported in a quantity of greater than 250 but not more than 2500 L		10 - 9	81-6
or greater than 250 but not more than 2500 kg.			
3. A spill may result in the release of Selenium to surface water.	~~~~~		
1. The transportation of Silver.			
2. Silver is transported in a quantity of greater than 250 but not more than 2500 L or		10 - 9	8.1-6
greater than 250 but not more than 2500 kg.			
3. A spill may result in the release of Silver to surface water.			
1. The transportation of Sodium.			
2. Sodium is transported in a quantity of greater than 250 but not more than 2500 L or	·	10 - 9	8.1-6.3
greater than 250 but not more than 2500 kg.			
3. A spill may result in the release of Sodium to surface water.			·
1. The transportation of Arsenic.			
2. Arsenic is transported in a quantity of greater than 2500 L or greater than 2500 kg.	10	9 – 7.2	7-4.9
3. A spill may result in the release of Arsenic to surface water.			
1. The transportation of Barium.			
2. Barium are transported in a quantity of greater than 2500 L or greater than 2500 kg.		10 - 8	7.2-5.4
3. A spill may result in the release of Barium to surface water.	· · ·		
1. The transportation of Cadmium.			
2. Cadmium is transported in a quantity of greater than 2500 L or greater than 2500	10	9 - 8	7.2 - 5.
kg.			
3. A spill may result in the release of Cadmium to surface water.			

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Activity	Vulnerability Score to produce a Significant	Vulnerability Score to produce a Moderate	Vulnerability Score to produce a
	DWT	DWT	Low DW1
1 The transportation of Chlorida	IPZ-1,2,3	IPZ-1,2,3	IPZ-1,2,3
2. Chloride is transported in a quantity of croater than 2500 L or greater than 2500 key		10.0	50.54
2. Chloride is transported in a quantity of greater than 2500 L of greater than 2500 kg.	,	10 - 8	7.2-5.4
1. The transportation of Chromium VI compounds		· · · · · · · · · · · · · · · · · · ·	· · ·
2 Chromium VI compounds is transported in a quantity of groater than 2500 L or	-		
oreater than 2500 kg	10	9-8	7.2 - 5
3 A spill may result in the release of Chromium VI compounds to surface water			
1 The transportation of Conner			
2 Conner is transported in a quantity of greater than 2500 L or greater than 2500 kg		10. 9	72 54
3. A spill may result in the release of Copper to surface water		10-8	1.2 - 3.4
1. The transportation of Cvanide			
2. Cvanide is transported in a quantity of greater than 2500 L or greater than 2500 kg		10 - 8	72-54
3. A spill may result in the release of Cvanide to surface water.		10 - 0	1.2 - 5.4
1. The transportation of Lead.		·	
2. Lead is transported in a quantity of greater than 2500 L or greater than 2500 kg.	10	9 - 8	7.2 - 5
3. A spill may result in the release of Lead to surface water.			
1. The transportation of Mercury.			
2. Mercury is transported in a quantity of greater than 2500 L or greater than 2500 kg.	10	9-7.2	7 – 4.9
3. A spill may result in the release of Mercury to surface water.			
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 2500 L or greater than		10.8	72 54
2500 kg.		10 - 8	1.2 - 3.4
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Selenium.			
2. Selenium is transported in a quantity of greater than 2500 L or greater than 2500		10 - 8	72-54
kg.		10 - 8	7.2-3.4
3. A spill may result in the release of Selenium to surface water.			
1. The transportation of Silver.			
2. Silver is transported in a quantity of greater than 2500 L or greater than 2500 kg.		10 - 8	7.2 – 5.4
3. A spill may result in the release of Silver to surface water.			-
1. The transportation of Sodium.			
2. Sodium is transported in a quantity of greater than 2500 L or greater than 2500 kg.	<b></b> ···	10 - 8	7.2 – 5.4
3. A spill may result in the release of Sodium to surface water.			

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#### 6) TRANSPORTATION OF AGRICULTURAL SOURCE MATERIAL

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	IPZ-1,2,3	IPZ-1,2,3
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of 25-250 L or 25-250 kg		10	9 - 7
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			·
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of 25-250 L or 25-250 kg			10 - 7
3. A spill may result in the release of Phosphorus to surface water.	•		
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 250 but not more than		. 10-9	81-6
2500 L or greater than 250 but not more than 2500 kg.			0.1 0
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of greater than 250 but not more than 2500		10 - 9	8.1 - 6.3
L or greater than 250 but not more than 2500 kg.			
3. A spill may result in the release of Phosphorus to surface water.			
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 2500 L or greater than		10 - 8	. 7.2 - 5.4
2500 kg.			
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of greater than 2500 L or greater than 2500		10 - 8	7.2 - 5.4
kg.			-
3. A spill may result in the release of Phosphorus to surface water.			

### 7) TRANSPORTATION OF NON-AGRICULTURAL SOURCE MATERIAL – SEWAGE BIOSOLIDS

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	IPZ-1,2,3	IPZ-1,2,3
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of 25-250 L or 25-250 kg		10	9 - 7
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.		· ·	
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of 25-250 L or 25-250 kg			10 - 7
3. A spill may result in the release of Phosphorus to surface water.			
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 250 but not more than		10 0	<b>Q</b> 1 <i>L</i>
2500 L or greater than 250 but not more than 2500 kg.		10 - 9	0.1 - 0
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			<u>-</u>
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of greater than 250 but not more than 2500		10 0	
L or greater than 250 but not more than 2500 kg.	,	10 - 9	8.1-0.5
3. A spill may result in the release of Phosphorus to surface water.		-	
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 2500 L or greater than		10 - 8	72 54
2500 kg.		10-8	7.2 - 3.4
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of greater than 2500 L or greater than 2500		10.8	72 54
kg.		10 - 0	1.2 - 3.4
3. A spill may result in the release of Phosphorus to surface water.			·

# 8) TRANSPORTATION OF NON-AGRICULTURAL SOURCE MATERIAL – PULP AND PAPER WASTE

Activity	Vulnerability Score to produce a Significant DWT	Vulnerability Score to produce a Moderate DWT	Vulnerability Score to produce a Low DWT
	<b>IPZ-1,2,3</b>	<b>IPZ-1,2,3</b>	IPZ-1,2,3
1. The transportation of Nitrogen (Nitrate).	· .		
2. Nitrogen (Nitrate) is transported in a quantity of 25-250 L or 25-250 kg		10	9 - 7
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of 25-250 L or 25-250 kg		·	10 - 7
3. A spill may result in the release of Phosphorus to surface water.			
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 250 but not more than		10 - 9	81-6
2500 L or greater than 250 but not more than 2500 kg.		10-9	8.1 - 0
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of greater than 250 but not more than 2500		10 - 9	81-63
L or greater than 250 but not more than 2500 kg.		10 9	0.1 0.5
3. A spill may result in the release of Phosphorus to surface water.			
1. The transportation of Nitrogen (Nitrate).			
2. Nitrogen (Nitrate) is transported in a quantity of greater than 2500 L or greater than		10 - 8	72-54
2500 kg.			
3. A spill may result in the release of Nitrogen (Nitrate) to surface water.			
1. The transportation of Phosphorus.			
2. Phosphorus is transported in a quantity of greater than 2500 L or greater than 2500	·	10 - 8	72-54
kg.			
3. A spill may result in the release of Phosphorus to surface water.			1

#### **PATHOGENS**

# 9) TRANSPORTATION OF AGRICULTURAL SOURCE MATERIAL (ASM)

Activity	Vulnerability Score to produce a Significant DWT IPZ-1.2.3	Vulnerability Score to produce a Moderate DWT IPZ-1.2.3	Vulnerability Score to produce a Low DWT IPZ-1-2-3
1. The transportation of ASM.			
2. ASM is transported in any quantity.	10-9	8.1-7	6.4-4.5
3. A spill of the ASM may result in the presence of pathogens in surface water.			

## 10) TRANSPORTATION OF NON-AGRICULTURAL SOURCE MATERIAL – SEWAGE BIOSOLIDS

Activity	Vulnerability Score to	Vulnerability Score to	Vulnerability Score to
	produce a Significant DWT	produce a Moderate DWT	produce a Low DWT
	IPZ-1,2,3	PZ-1,2,3	IPZ-1,2,3
1. The transportation of NASM – sewage biosolids.			
2. NASM – sewage biosolids is transported in any quantity.	10.0		
3. A spill of the NASM – sewage biosolids may result in the presence of pathogens in	10-9	8.1-7	6.4-4.5
surface water.			

#### 11) TRANSPORTATION OF NON-AGRICULTURAL SOURCE MATERIAL – PULP AND PAPER WASTE

Activity	Vulnerability Score to produce a Significant DWT IPZ-1,2,3	Vulnerability Score to produce a Moderate DWT IPZ-1,2,3	Vulnerability Score to produce a Low DWT IPZ-1.2.3
1. The transportation of NASM – pulp and paper waste.			
2. NASM – pulp and paper waste is transported in any quantity.		10	0.7
3. A spill of the NASM – pulp and paper waste may result in the presence of		10	9-7
pathogens in surface water.			