

Revisions to the SCRAR Assessment Report
 Revisions to Section 7 related to threats updates

White Cells- original policy text

Grey cells- new policy text

Yellow highlight- area of original policy text to be changed (already reviewed by SPC)

Bright Green highlight- area of new policy text (already reviewed by SPC)

Section 7 – Threats and Risk Assessment – Water Quality

Section	Page	Text	Reason For Change	Changes Made
Title page and footers	all	Revised – November 18, 2011 Approved	Reflect this update to the AR	
		Updated – November 14, 2014		
Table 7-1	7-3	Technical Studies on Drinking Water Threats and Risk Assessment	Update to include additional work	
		Add the following reports: Thames-Sydenham and Region, Technical Memo Terry Chapman, Stephan Clark		
Table 7-1		Technical Studies on Drinking Water Threats and Risk Assessment	Update to include Kettle and Stony point study	
	7-3	Kettle and Stony Point Intake : HCCL and Riggs Engineering Ltd. December 14, 2011		
7.1.4	7-15	If an <i>issue</i> is identified, the <i>activities</i> that contribute to the identified <i>issue</i> and the areas where they occur (within <i>vulnerable areas</i> , as described above) must also be identified. A third intake protection zone (IPZ-3) for surface water intakes may be delineated to include the <i>activity</i> and area known to contribute to the drinking water quality <i>issue</i> .	Add text to reflect Wallaceburg ICA work	
		If an <i>issue</i> is identified, the <i>activities</i> that contribute to the identified <i>issue</i> and the areas where they occur (within <i>vulnerable areas</i>) must also be identified. A nitrate Issue has been identified for the Wallaceburg intake as described in section 5. Through work to delineate and ICA it was determined that the information available left too much uncertainty in the extent of the ICA and the activities contributing to the issue. Further, the analysis of more recent water quality results identify the potential for the nitrate levels in the Sydenham River to be leveling off or possibly declining. Additional data for period of record is required to determine if these events are occurring more frequently. Further, additional monitoring is required to be able to determine if nitrate should remain an issue and to be able to determine the contribution of areas connected to the watercourse by transport pathways such as tile drainage. A workplan is therefore included in section 5 which suggests the issue be re-evaluated in a future update to the SPP. A third intake protection zone (IPZ-3) may be needed, as part of a subsequent update to this AR, to include the activity and area known to contribute to the drinking water quality issue.		
7.1.6	7-17	In the Thames-Sydenham and Region, a comprehensive <i>threat and risk assessment</i> for IPZ-3 has not been completed. However the spills scenarios used to delineate an IPZ-3 based on event specific modelling were also used to identify <i>activities</i> that could be <i>significant threats</i> . The events based modelling is described in detail in Section 4.2.5.	Threat inventory work	
		In the Thames-Sydenham and Region, a comprehensive <i>threat assessment</i> for IPZ-3 has been completed. This work was completed by CA staff using similar methodologies to the previous inventory work. It was generally		

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		completed as a desktop exercise with drive-by inspections where appropriate. Numbers of locations of significant drinking water threats provided in the tables 7-5 in the following section are based on this inventory work. It will be important that site inspection as part of routine compliance monitoring or threats verification be undertaken by Risk Management Inspectors as part of the implementation of the SP		
7.2	7-18	The <i>Source Protection Committee</i> has not identified any 'other' (not <i>prescribed</i>) activities or circumstances (not in the <i>tables of drinking water threats</i>) at this point. However, the <i>Source Protection Committee</i> has expressed a concern to the <i>MOE</i> over the risks associated with the transportation of materials through pipelines or other corridors.	Approval of local threats letter	
		The <i>Source Protection Committee</i> has identified 'other' (not <i>prescribed</i>) activities or circumstances (not in the <i>tables of drinking water threats</i>) based on results of event based studies undertaken, and a request was made to the Director to add the transportation of fuel through pipelines as a 'local threat' in the updated Assessment Report. The letter identifying transportation of fuel and fertilizer and transportation of liquid petroleum products through pipelines as local drinking water quality threats, is attached in Appendix 10		
7.2.2	7-20	Further, there are no locations or activities that 'are or would be' significant threats within the Petrolia <i>IPZ-1</i> and <i>IPZ-2</i> , the <i>LAWSS IPZ-2</i> , the Wallaceburg <i>IPZ-2</i> , and the <i>HVA</i> and <i>SGRA</i> . This is due to the range of vulnerability scores in these areas.	Threats inventory work in IPZ-3	
		Further, there are no locations or activities that 'are or would be' significant threats within the Petrolia <i>IPZ-1</i> and <i>IPZ-2</i> , the <i>LAWSS IPZ-2</i> , the Wallaceburg <i>IPZ-2</i> , and the <i>HVA</i> and <i>SGRA</i> . This is due to the range of vulnerability scores in these areas. The significant threats in the IPZ-3 areas are event based threats and more information on this is provided in section 7.2.7.		
		Table 7-5, 7-7, 7-9 and 7-11 to be updated	Update to reflect new information	
		see revised tables appended to this change log		
Table 7-5	7-20			
		Updated Table for KSP: see tables appended to this change log		
7.2.6	7-23	New section:	2011 Technical study	
		7.2.6.Threats in Kettle and Stony Point Intake – see text appended to this change log		
New table 7-12 and 7-13		New Tables		
		See tables 7-12 and 7-13 appended to this change log		
Table 7-12	7-23	Change table number to 7-14	Accommodate new section	
7.2.6	7-24	Revise Section Number to 7.2.7	Accommodate new section	
7.2.7	7-25	Revise Section Number 7.2.8	Accommodate new tables	
7.2.7	7-25	30,000 Kg	Correct an error in the quantity that was modelled i	
		34,000 Kg		

Section	Page	Text	Reason For Change	Changes Made
7.2.7	7-26	The spill modelling scenarios were selected as a starting point to assess the extent of the area where spills could pose a significant risk to these drinking water sources. More work needs to be undertaken to determine if other activities could be considered <i>significant drinking water threats</i> in these areas. Also, the areas within the delineated <i>IPZs</i> need to be assessed to determine if there are additional locations where fixed or transportation related threats should be identified as <i>significant threats</i> . Further, additional spill scenarios (location, contaminant type and volumes) need to be assessed to determine if the area of the <i>IPZ-3</i> should be extended beyond those delineated as per Section 4.2.5. This work would be undertaken as part of the policy development or implementation stages of Source Protection Planning and would be reflected in subsequent updates to this Assessment Report.		
		The Spill modelling scenarios were selected as a starting point to assess the extent of the area where spill could pose a significant risk to these drinking water sources. In 2013, additional work was undertaken to include other event based areas (EBA) and to assess the extent of the IPZ-3 to include the entire EBA. Based on the results from this study the IPZ-3 has been revised to include the entire EBA. Further, additional spill scenarios (location, contaminant type and volumes) need to be assessed to determine if the area of IPZ-3 should be extended beyond those delineated. This work may be undertaken in the future and would be reflected in a subsequent update to this Assessment Report.		
7.2.8	7-26	New Paragraph "Local Threats" The modelled scenarios included spills from fixed fuel storage tanks and fuel tanker trucks activities, at various locations. If modelling indicated that the contaminant considered reached the intake and exceeded a the maximum allowable concentration, then the activity would be considered a significant threat. Fixed fuel storage tanks are considered 'prescribed' drinking water quality threats, as they are included under the activity of 'handling and storage of fuel' in the MOE Drinking Water Threats Tables. However the transportation of fuel (such as by tanker trucks) is not an activity listed in these Threats Tables. Based on results of event based approach undertaken, a request was made to the Director to add the transportation of fuel as a 'local threat' in the Updated Assessment Report. The letter identifying transportation of fuel and fertilizer and transportation of liquid petroleum products through pipelines as local drinking water quality threat, is attached in Appendix 10. This work confirms that spills in these locations can reach the intakes. The modelling considered a limited number of scenarios and is based on specific events and conditions. It therefore does not represent all possible situations. Although the analysis did not confirm that ODWQS would be exceeded at LAWSS it did identify that the spill would reach the intake. Similarly smaller volumes, while not identified as a SDWT, would under the correct conditions result in a drinking water impairment at the intake. While the areas delineated are used for the purposes of delineating an EBA within which significant drinking water threat policies would apply, areas outside of this EBA would, under the correct conditions, contribute concentrations to the intake which could exceed ODWQS. It is therefore important that an abundance of caution be used in and beyond these areas to report and respond to spills.		
7.3 Tier 2 Risk Assessment	7-27	A tier 2, or site-specific, risk assessment to confirm the number of locations at which significant threats occur, would be conducted while developing the source protection plans, if needed. As part of the consultation on this assessment report, those who are believed to be engaging in a significant threat will be notified. This will allow their participation in the tier 2 risk assessment. The tier 2 work involves the examination of land use activities and the circumstances under which they are undertaken, through site visits and discussions with the landowners. The outcome of the tier 2 risk assessment will be part of a future Assessment Report.		
Proposed		7.3 Site-Specific Risk Assessment		

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<i>revision</i>		A site-specific risk assessment to confirm the existence of significant threats will be necessary as part of implementation. Although additional efforts have been made to verify significant threats, this has not included on site verification of the threat. Although this level of effort was considered as part of the threats verification, it would still be necessary during implementation. Further it will also be necessary as part of compliance monitoring for part IV implementation in both locations where significant threats have been identified and those where threats have not been identified. This is due in part to the potential for activities and circumstance to change at any location without any regulatory approval process. As part of the consultation on this assessment report, those who are believed to be engaging in a significant threat will be notified.		
7.4 Data Gaps	7-26	This work would be part of a subsequent Assessment Report.		
<i>Proposed revisions</i>		<p>This work would be part of a subsequent Assessment Report.</p> <p>If a drinking water quality issue is identified at a well or intake as per Rule 114 and is known to be partially or wholly due to anthropogenic causes, the area and the activity contributing to a drinking water quality issue must also be identified as per Rule 115. In the St. Clair SPA, some of the issues are naturally occurring and are therefore understood to not be subject to Rule 115.</p> <p>Nitrates have been identified as partially or wholly anthropogenic for the Wallaceburg Intake. Through work to delineate and ICA it was determined that the information available left too much uncertainty in the extent of the ICA and the activities contributing to the issue. Further, the analysis of more recent water quality results identify the potential for the nitrate levels in the Sydenham River to be leveling off or possibly declining. Additional data for period of record is required to determine if these events are occurring more frequently. Further, additional monitoring is required to be able to determine if nitrate should remain an issue and to be able to determine the issue contribution areas. This will need to be reassessed in subsequent updates to the Assessment Report. If an ICA is established the threats contributing to the issue will need to be inventoried and reported in this section in a subsequent update to the assessment report.</p>		
7.4	7-27	studies for the Kettle and Stony Point First Nation intake on Lake Huron commenced in spring 2011. Estimated timeline for the completion of that study is provided in Section 9.	Update to reflect new information	
		Technical studies for the Kettle and Stony Point First Nation intake on Lake Huron has been completed and included in this updated assessment report.		
Appendix 11	A11-3	<ul style="list-style-type: none"> EBA – Event Based Area Event Based Area – An area within which an activity is a significant drinking water threat based on event modelling. It may be comprised of parts of IPZ-1, IPZ-2 and IPZ-3 	Terminology change	