NIAGARA RIVER TOXICS MANAGEMENT PLAN (NRTMP) INTERIM PROGRESS REPORT AND WORK PLAN

June 2004

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FOR THE NIAGARA RIVER SECRETARIAT

Environment Canada
Environnement Canada

EPA
United States
Environmental
Protection Agency

Ontario
Ministry of the
Environment

New York State
Department of
Environmental
Conservation

TABLE OF CONTENTS

PROGRESS REPORT

Niagara River Toxics Management Plan (NRTMP)
Progress Report and Work Plan

June 2004

1.0 INTRODUCTION

The Niagara River flows 60 kilometers or 37 miles from Lake Erie to Lake Ontario. The River serves as a source for drinking water, fish and wildlife habitat and recreation. It generates electricity and provides employment to millions of people. Unfortunately, the River is also the recipient of toxic chemicals that pollute its waters, and prevent us from fully enjoying its beneficial uses.

In February 1987, Environment Canada (EC), the U. S. Environmental Protection Agency Region II (USEPA), the Ontario Ministry of the Environment (MOE) and the New York State Department of Environmental Conservation (NYSDEC) -- the “Four Parties” -- signed the Niagara River Declaration of Intent (DOI). The purpose of the DOI is to reduce the concentrations of toxic pollutants in the Niagara River.

Eighteen “priority toxics” were specifically targeted for reduction, ten of which were designated for 50% reduction by 1996 because they were thought to have significant Niagara River sources. The Niagara River Toxics Management Plan (NRTMP) is the program designed to achieve these reductions.

The Four Parties re-affirmed their commitment to the NRTMP in a “Letter of Support” signed in December, 1996. The revised goal, as stated in that letter, is "to reduce toxic chemical inputs to the Niagara River to achieve ambient water quality that will protect human health, aquatic life, and wildlife, and while doing so, improve and protect water quality in Lake Ontario as well".

Change in Reporting and Public Meeting Schedules

In early 2004, the Niagara River Coordination Committee (NRCC) reassessed its reporting and public meeting commitments. It was decided that a detailed NRTMP Progress Report would be produced every three years, with the next such report scheduled for 2006. This decision was made in recognition of the fact that, for various reasons (e.g., changes in the monitoring frequency of some programs, time required for data collection, analysis, and review) new information would not necessarily be available for the NRTMP to report every year. The NRCC also decided that public meetings would be held every three years with the next public meeting scheduled for 2006 to coincide with the release of the next detailed NRTMP report and the 2006 Lake Ontario Lakewide Management Plan (LaMP) Biennial report. In the intervening years, a brief newsletter-style NRTMP report would be prepared to highlight any new significant findings and accomplishments. Steps will also be taken to ensure that the public has

access to web sites where up-to-date information on the NRTMP and Lake Ontario LaMP can be obtained.

Accordingly, in the absence of new data to report, an abridged version of the Executive Summary from the detailed 2003 Progress Report has been included to re-iterate, briefly, the status of the River. A section describing several activities occurring outside the scope of the NRTMP is included because of their relevance. And finally, the updated Work Plan has been included.

2.0 STATUS OF THE NIAGARA FROM THE JUNE 2003 PROGRESS REPORT

The primary method for assessing progress under the NRTMP is the Upstream/Downstream Program. Results from this Program between 1986/1987, when the Program began, and 2000/2001 have indicated continuing, statistically significant reductions in the concentrations/loads of most of the "priority toxics" for which there are data. Reductions have exceeded 70%. For most chemicals, these reductions have been due to the effectiveness of remedial activities in reducing chemical inputs to the River from Niagara River sources. For others (e. g., dieldrin) the reductions have been due to reduced inputs to the River from Lake Erie/upstream. Biomonitoring Program results corroborated the decreasing trends seen in the Upstream/Downstream data reflecting continuing improvement in the Niagara River and its tributaries. Both YOY (Young-of-Year)-fish, and mussel contaminant data also reflected the effectiveness of remedial activities at hazardous waste sites. However, while the data for most locations indicated decreasing trends, there were some locations (e. g., upstream Gill Creek, Cayuga Creek, and downstream of Gratwick Riverside Park) where the data suggested the new or continuing presence of contaminants. Further monitoring will be needed to evaluate these locations. The continuing presence of dioxins and furans in the Pettit Flume cove also needs additional assessment.

Despite the favorable trend described above, the upper 90% confidence interval ambient water concentration data for many of the NRTMP "priority toxics" exceeded the strictest, agency water quality standards/criteria at both Fort Erie (FE) and Niagara-on-the-Lake (NOTL). Exceedences in 1999/2000 and 2000/2001 were due, largely, to comparing the data to these more stringent standards, rather than significant increases in the water concentrations of these chemicals in the River.

The 1999/2000 and 2000/2001 data also indicated that the loads of many of the "priority toxics", particularly the polynuclear aromatic hydrocarbons (PAHs), from Lake Erie to the Niagara River may be increasing. Future monitoring will confirm if, indeed, this "trend" continues. This points to the growing importance of Lake Erie as a source of many of these contaminants to the Niagara River, and ultimately Lake Ontario.

No changes to New York State fish consumption advisories for the Niagara River have been issued since 1999. Re-testing of several species of fish from the upper and lower Niagara River in 2002 by MOE, however, resulted in the issuance of a mixture of less

restrictive and more restrictive fish consumption advisories for some size classes, and species of fish. Ontario's Ministry of the Environment has prepared a "Guide to the Guide" pamphlet on fish consumption advisories which Health Canada translated into twelve languages. This one page explanation helps the various ethnic communities understand how to interpret and use the information in the *Guide to Eating Ontario Sport Fish* (MOE 2003*).* A special outreach program which informs children and families about the Guide has been implemented under Canada's Niagara River Remedial Action Plan (RAP).

NYSDEC trackdown activities in Two Mile Creek and in the Falls Street Tunnel (FST) verified the presence of polychlorinated biphenyls (PCBs) in the Creek and PCBs and polychlorinated dibenzo-dioxins and furans in the FST. Additional trackdown efforts and control measures, respectively, are planned to address these findings.

Despite the successes to date, and the continued documented improvements in the Niagara River, more work needs to be done. Biomonitoring Program results provided evidence of the continuing presence of low level chemical contamination in the River. Advisories to limit consumption of sportfish caught in the Niagara River still continue due to contamination by toxic substances. And, inputs from Lake Erie might be increasing, and becoming increasingly more important for some chemicals, which will require additional efforts upstream. Much work has been done to define the actions necessary to assure continued reductions of toxic chemicals in the Niagara River, and there are substantial commitments to address current concerns as indicated in the Work Plan accompanying this Report. Trackdown activities such as those noted above are but one example of these. These commitments include:

- Completing the actions described in prior NRTMP Work Plans;
- Ensuring that these actions have been effective;
- Implementing additional actions to protect and restore the River; and,
- Continuing and improving the public reporting of progress.

3.0 ADDITIONAL ACTIVITIES

This section describes several additional activities that are either underway, or have been completed, on the Niagara River. While these activities are outside the scope of the NRTMP, and are, therefore, not included in its Work Plan, they are nonetheless relevant.

Niagara Power Project Re-licensing

The New York Power Authority's (NYPA) license to operate the Niagara Power Project in Lewiston, NY, as required by the U. S. Federal Energy Regulatory Commission (FERC), will expire in 2007. The NYPA must file an application for a new license by 2005. As part of the re-licensing process, the NYPA must conduct an Environmental Assessment (EA) that includes the diversion of water in the Niagara River. During the

public comment phase of the EA, a number of questions were raised that are now being investigated. The following questions that are being addressed by the NYPA are of particular relevance to the NRTMP:

- Do project operations affect surface water quality?
- Do project operations affect the transport of groundwater and contaminants?
- Do project operations result in super-saturation of atmospheric gases in the Lower Niagara River?
- Do project operations impact the River's water temperature?
- Do water level fluctuations in the Lewiston Reservoir increase mercury that is bioavailable?
- What is the extent of sedimentation and quality of sediment in the Lewiston Reservoir and fore bay?
- What is the ecological condition of Gill, Fish, and Cayuga Creeks?
- What are the water level and flow fluctuations in the Niagara River and tributaries? and,
- What are the contaminant levels in fish in the Lewiston Reservoir?

Further information on these questions is available from the NYPA's website at http://niagara.nypa.gov. The relevance of any new information to the NRTMP that may result from NYPA's investigation will be considered by the Four Parties.

Contaminated Sediment Assessments in the Niagara River AOC

The Niagara River has been designated as one of the 41 Areas of Concern (AOCs) in the Great Lakes Basin because of impaired beneficial uses. Under the Great Lakes Water Quality Agreement (GLWQA), the Canadian and U.S. federal governments, in cooperation with the state and provincial governments, were required to develop RAPs to restore the impaired beneficial uses in these areas. Because the Niagara River is a bi-national AOC, separate U.S. and Canadian RAPs have been developed.

The Canadian Niagara River RAP identified fourteen locations where contaminated sediments had the potential to impair beneficial uses. The sites fell into three levels:

Level 1 – Four sites where existing information indicates that concentrations of contaminants are sufficiently elevated that potential risks exist.

Level 2 – Three sites where existing data suggests lower measured levels of contaminants of concern but no recent data exists to support management decisions.

Level 3 – Seven sites considered to pose relatively low environmental concerns.

Contaminants identified in these areas included heavy metals, PCBs, PAHs and, at one site (Frenchman's Creek), dioxins and furans.

One of the Level 1 sites (Atlas Reef in the Welland River) was remediated in 1995. A second Level 1 site, Lyons Creek East , is currently the subject of detailed assessment and remedial planning (see discussion below).

In 2003, an assessment of the remaining twelve sites was initiated. Sampling was undertaken at each of these sites to determine which, if any, warranted further assessment and possible remediation. Sites falling into this category will be the subject of a Phase III study that will take the form of a Ecological Risk Assessment. Sites requiring further remediation will be identified using measured biological effects determined through *in-situ* analysis and lab testing. Based on the outcomes of these analyses and a risk characterization, recommendations regarding risk management will be made, including the location and type of appropriate remediation. The project will be completed in 2005. This project is coordinated by the Niagara Peninsula Conservation Authority (NPCA) in collaboration with EC and MOE; and, to date funding support has been provided by EC's Great Lakes Sustainability Fund (GLSF) and MOE under the 2002 Canada-Ontario Agreement (COA).

Lyons Creek East Remediation Strategy

Lyons Creek East is one of the fourteen locations in the Canadian portion of the Niagara River AOC where contaminated sediments were believed to have the potential to impair beneficial uses. It was identified in the Stage 1 and Stage 2 Niagara River RAP documents as one of four Level 1 contaminated sediment sites, meaning that the sediments in the area required remediation and/or further detailed assessments. The area is contaminated by PCBs and metals. To date no current or historic source for the contamination has been identified.

In 2002, a detailed assessment of Lyons Creek East was undertaken that included a sampling program designed to fill gaps from earlier sampling efforts and address data needs associated with the development of remediation options for the area. One component of the sampling program was undertaken by EC utilizing the BEnthic Assessment of SedimenT (BEAST) methodology that assesses sediment by examining physio-chemistry, sediment toxicity and benthic community structure. The BEAST assessment was part of a program conducted by EC in several AOCs, and was supported by MOE funding under the 2002 COA.

In January 2003, MOE, EC and the NPCA signed a memorandum of understanding (MOU) regarding a sediment management plan for Lyons Creek East. Under this MOU the NPCA serves as project coordinator for the initial development phases of the sediment remediation plan. In fiscal year 2003/2004, activities undertaken as part of this project included the completion of sampling required to characterize the sediments and inform subsequent decision making, and the completion of initial components of a human health risk assessment (HHRA) for the area due to be completed in 2004.

In 2004-2005, one or more of the following activities will be undertaken as part of this project depending on the outcomes of the previous year's work:

- completion of an assessment of the ecological risks utilizing the proposed framework for sediment decision making;
- development and evaluation of remedial options based on the outcomes of the human health and ecological assessments of the area; and,
- design of the preferred remedial option.

To date, MOE funding has supported this project as part of the 2002 COA.

Retrospective Analysis of Upstream/Downstream Program Suspended Sediments

Archived suspended sediments from the Niagara River Upstream-Downstream program were recently catalogued and inventoried. The archive consists of freeze-dried suspended sediments collected by centrifugation on a weekly, or bi-weekly, basis at both FE and NOTL over the period 1980-2002. This archive presents a unique opportunity to assess temporal trends in pollutant concentrations for a wide range of contaminant classes either not previously analyzed for, or analyzed using analytical methods that have since been improved upon. The future analyses will encompass contaminants historically associated with the Niagara River watershed (e.g., polychlorinated dibenzodioxins and dibenzofurans), as well as pollutants of new and emerging concern in the Great Lakes basin, including polybrominated diphenyl ethers (PBDEs) and other brominated flame retardants. Other compound classes of interest include PCBs, polychlorinated naphthalenes (PCNs), polychlorinated n-alkanes and toxaphene. All these analyses will be conducted using recently developed high-resolution mass spectrometric methods. This project is a collaborative effort between the Ecosystem Health Division-Ontario Region (EHD-OR) and the National Water Research Institute (NWRI) of EC, and MOE. The analyses are well underway, and a complete data set for several contaminant classes is expected by the end of 2004.

Published Papers on the Niagara River

Environment Canada published two papers relevant to the Niagara River in the December, 2003 issue of the *Journal of Great Lakes Research*. The first paper examined the concentration and distribution of nutrients and contaminants in the bottom sediments of the Canadian, Sir Adam Beck Power Plant reservoir (Williams *et al.* 2003a). The second paper dealt with the seasonality in contaminant concentrations in the Niagara River (Williams *et al.* 2003b). Brief descriptions of these studies and their results are presented below.

Sampling the Sir Adam Beck Power Reservoir

Surficial bottom sediments (top 3cm) in the Sir Adam Beck Power Reservoir were sampled in December, 1998 to determine the concentration and distribution of a variety of physical and chemical parameters including trophic indicators (phosphorus, nitrogen,

organic carbon and nitrogen), metals and persistent organic contaminants. Results were compared to those from a similar survey conducted MOE in 1983 to determine the changes that had occurred over the intervening fifteen-year period.

Sediment concentrations and spatial distributions of the above parameters were related to the sediment physical characteristics, which were dictated by reservoir morphometry and the daily fluctuations in water levels as water is pumped in and out. The highest phosphorus, metal and organic contaminant concentrations occurred in the deeper eastern end of the reservoir. All of the metals, with the exception of lead and zinc at some stations, exceeded their Provincial Sediment Quality Guideline (Persaud et al. 1993) lowest effect levels (LEL, the level of sediment total metal contamination that can be tolerated by the majority of benthic organisms). The concentrations of all organic contaminants, except DDD and DDE, were well below their respective LELs. Of particular interest, was the 65% decrease in the overall mean concentration of p,p'-DDT from 10.4 ng/g to 3.5 ng/g between 1983 and 1998 suggesting a decrease in parent DDT input to the reservoir.

Overall, results from the work indicated that reservoir sediment metal concentrations were not significantly different from those seen in the rest of the Lake Erie basin, and that the concentrations of organic contaminants were extremely low. The Sir Adam Beck Reservoir does not appear to be a major source of contaminants to the River.

Seasonality in Contaminant Concentrations in the Niagara River

Seasonal variation has been observed in both the dissolved and particulate phase concentrations of many of the organic contaminants measured in the Niagara River over the period 1986 to 2001. The different seasonal patterns were attributed to three factors: (1) the temperature dependent exchange of contaminants across the air/water interface; (2) the seasonal nature of specific activities such as the application of agricultural insecticides and herbicides, and residential heating; and (3) the seasonal variation in suspended particulate material (SPM) quantity and composition and its effect on the particulate phase concentrations of contaminants. The contribution of these factors to the observed seasonality in contaminant concentrations were illustrated by four examples (α-HCH, α-endosulfan, acenaphthylene, PCB) discussed in the paper.

The seasonal patterns seen in the River were generally consistent with those seen for the same contaminants in Lakes Erie and Ontario over the period 1992 to 1995. Results suggested that the evaluation of contaminant concentrations, cycling and trends based on once a year samples from the Great Lakes water column should be questioned. This is a significant issue given its widespread practice. Year-round sampling of Connecting Channels water may be, in general, a useful alternative to temporal lake sampling for several reasons. Not the least of these would be ease of obtaining relatively cheap (compared to vessel costs) year-round data. For lakes, year-round sampling is pre-empted by winter conditions and the unavailability of ship time. The trade-off would be foregoing information on the within-lake spatial variability in contaminant concentrations.

4.0 REFERENCES

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Persaud, D., Jaagumagi, R., and Hayton, A. 1993. *Guidelines for the Protection and Management of Aquatic Sediment Quality in Ontario.* Ontario Ministry of the Environment, Toronto, Ontario.

Williams, D.J., McCrea, R.C., and Sverko, Ed. 2003a. The Bottom Sediments of the Sir Adam Beck Reservoir, Niagara River, Ontario. *J. Great Lakes Res.* 29(4):630-640.

Williams, D.J., Kuntz, K.W., and Sverko, Ed. 2003b. Seasonality in Contaminant Concentrations in the Niagara River. *J. Great Lakes Res.* 29(4):594-607.

NIAGARA RIVER TOXICS MANAGEMENT PLAN (NRTMP) ANNUAL WORK PLAN [2004]

The Four Parties: EPA = United States Environmental Protection Agency
DEC = New York State Department of Environmental Conservation
EC = Environment Canada
MOE = Ontario Ministry of the Environment

	ACTIVITY AND COMMENTS	EPA	DEC	EC	MOE	COMMITMENTS 2003	COMMITMENTS 2004	STATUS
Controlling Point Sources								
A.	Report on U.S. Point Sources		X			Periodically	Periodically	Ongoing; regulatory monitoring and reporting of all regulated facilities in the Niagara River basin for compliance with State Pollutant Discharge Elimination System (SPDES) permits will continue.
B.	Report on Canadian Point Sources				X	-	-	Ongoing; regulatory monitoring and reporting of Ontario point sources as required by Certificates of Approval and Clean Water regulations will continue.
C.	Report on actions to further address U.S. point sources discharging NRTMP Priority Toxics.	X	X			Update in 2003	Annual updates	Ongoing; Permit reviews and revision occur routinely according to programmatic schedules. Nonregulatory and innovative voluntary pollution prevention activities have been implemented locally by DEC, Erie and Niagara counties, and various non-governmental organizations.

ACTIVITY AND COMMENTS		EPA	DEC	EC	MOE	COMMITMENTS 2003	2004	STATUS
Controlling Non-Point Sources								
A.	Waste sites/landfills							
	1. Update progress report on remediation of U. S. hazardous waste sites. [Progress at most significant sites summarized below]	X	X			June 2003	June 2004	Completed
	2. Remediate Occidental Chemical-Buffalo Ave		X			-	-	Completed
	a. Biomonitor effectiveness using caged mussels				X	2003	2006	Last deployment in 2003; next scheduled for 2006
	3. Remediate 102nd Street	X						Completed
	a. Biomonitor effectiveness using caged mussels				X	2003	2006	Last deployment in 2003; next scheduled for 2006
	4. Remediate DuPont, Necco Park site							
	a. Start construction of final site remedy	X				-	-	Ongoing
	b. Complete Final Remedy	X				Nov 2005	Nov 2005	Ongoing
	5. Remediate Occidental Chemical, S-Area	X				-	-	Completed
	a. Optimize well pumping rates to prevent contaminated groundwater from leaving site.	X				2004	2004	Evaluation and adjustments to optimize performance underway
	b. Biomonitor effectiveness using caged mussels				X	2003	2006	Last deployment in 2003; next scheduled for 2006
	6. Remediate Solvent Chemical Site		X			-	-	Completed
	a. Begin performance monitoring		X			2003	2004	Scheduled to begin in 2004.
	7. Remediate Olin plant site	X	X			-	-	Completed
	a. Biomonitor effectiveness using caged mussels				X	2003	2006	Last deployment in 2003; next scheduled for 2006
	8. Remediate Gratwick Riverside Park site		X			-	-	Completed
	a. Biomonitor effectiveness using caged mussels				X	2003	2006	Last deployment in 2003; next scheduled for 2006.

ACTIVITY AND COMMENTS	EPA	DEC	EC	MOE	COMMITMENTS 2003	COMMITMENTS 2004	STATUS
9. Remediate Hyde Park Site	X				June 2003	-	Completed
a. Conduct annual survey of gorge-face seeps	X				July 2003	July 2004	Ongoing
b. Conduct ecological risk screening of contamination at mouth of Bloody Run Creek	X				Dec 2003	Dec 2004	See comments
c. Biomonitor effectiveness using caged mussels				X	2003	2006	Samples from 2003 deployment lost; next survey scheduled for 2006.
Comments: Site construction was completed in June 2003 with all overburden groundwater being contained. EPA will issue a Remedial Action Report in September 2004 which will document all the remedial actions taken at the site. Annual gorge face seep surveying continues to indicate no need for additional control or remediation of the area. Biomonitoring data from 2000 showed that concentrations of dioxins and furans in mussels at the mouth of Bloody Run Creek were lower than concentrations detected in 1994, 1995 and 1997. However, calculated TEQs were still considered high based on samples collected at uncontaminated sites. Samples from the 2003 biomonitoring survey were lost due to vandalism. Risk screening of this contamination by EPA indicated human health risk to be within its acceptable risk range. EPA will complete an ecological risk screening by December 2004.							
10. Remediate Buffalo Color Corporation site							
a. Complete site investigation		X			-	-	Completed
b. Select site remedy		X			Aug 2003	July 2004	See comments
c. Implement site remedy		X			July 2004	Mar 2005	See comments
Comments:. Public notice and implementation of the final remedy has been delayed due to BCC's Chapter 11 Bankruptcy filing in Oct 2002. Buffalo Color and Honeywell, a PRP, have recently come to an agreement regarding financial arrangements for implementation of the remedial measures. These agreements have been approved by the Bankruptcy Court. DEC is currently negotiating a Consent Order with Honeywell to implement the remedy. An Request for Proposal for remedy design and construction was issued. The remedial system is expected to be installed during 2004. The overall schedule for corrective action is dependant on these actions as well as on field conditions required.							

	ACTIVITY AND COMMENTS	EPA	DEC	EC	MOE	COMMITMENTS 2003	COMMITMENTS 2004	STATUS
	11. Remediate Bethlehem Steel site							Due to delays caused by several problems, the proposed schedule, and all target dates, were extended. In 2003 the Integrated Steel Group (ISG) acquired the BSC Lackawana site. DEC is currently negotiating a correction action order with ISG.
	a. Complete site investigation	X	X			Dec 2003	Dec 2004	
	b. Select site remedy	X	X			Oct 2005	Apr 2006	
	c. Begin implementation of site remedy	X	X			Mar 2007	Nov 2007	
	12. Remediate Occidental Chemical Durez - North Tonawanda site							
	a. Complete construction of site remedy		X			-	-	Completed
	b. Assess contamination in Pettit Flume Cove		X			-	-	See comments
	c. Biomonitor effectiveness using caged mussels				X	2003	2006	Last deployment conducted in 2003; next scheduled for 2006.
	Comments: The July 2000 mussel biomonitoring study again detected high concentrations of dioxins and furans in deployed mussels and sediment collected from Pettit Flume. Additional assessment of Pettit Flume Cove will be done in conjunction with OCC's long-term operation, maintenance and monitoring plan, as well as MOE's ongoing biomonitoring program.							
	13. Determine whether trace amounts of contaminants of concern found at 5 landfills are moving to groundwater off-site			X	X	Ongoing	Ongoing	Ongoing; groundwater monitoring at these sites has shown that contaminants are not moving to the groundwater and off-site. Further assessment is not required at this time; however, regulatory monitoring and reporting of these non-point sources as required by certificates of approval will continue.
B.	Contaminated Sediments							
	Update NY Great Lake Contaminated Sediment Inventory		X			Annually	Annually	Update completed for 2003 and submitted to EPA.

	ACTIVITY AND COMMENTS	EPA	DEC	EC	MOE	COMMITMENTS 2003	COMMITMENTS 2004	STATUS
Monitoring								
A.	Complete report on results of Upstream/Downstream sampling	X	X	X	X	-	-	1999/00 and 2000/01 report anticipated by December 2004
B.	Collect juvenile spottail shiners or other juvenile fish and analyze for toxic chemicals, according to Monitoring Plan		X		X	See comments	2004	Ongoing.
	Comments: In the fall of 2002 and 2003 MOE collected juvenile fish on both the Canadian and US sides of the Niagara River. In 2003, DEC sampled YOY fish from three locations in the Niagara River (Strawberry Island, Little Niagara River, and Lewiston) and is awaiting laboratory results.							
C.	Track down toxic chemicals in tributaries and sewer systems to identify sources	X	X			Annual updates	Annual updates	See comments
	1. Perform post-remediation sediment sampling of Gill Creek		X			2003	2004	See comments
	2. Perform follow-up trackdown-related sampling in Two-Mile Creek		X			2003	2004	See comments
	3. Perform sediment sampling in Cayuga Creek and Little Niagara River		X			2003	2004	See comments
	4. Perform sediment sampling in Scajaquada Creek		X				2005	See comments
	Comments: DEC and EPA are working cooperatively to oversee the implementation of New York State Great Lakes basin source trackdown work, including Lake Ontario, Lake Erie, and the Niagara River. Through DEC/EPA's assessment of past data collected in the Niagara River and U.S. tributaries, several priority areas were identified for follow-up monitoring and are scheduled for track-down and/or post-remediation sampling in 2004 by DEC. Additional trackdown-related sampling may be funded through the Great Lakes National Program Office's FY 2004-2005 Request for Proposals.							
D.	Biomonitor using caged mussels and analyze for toxic chemicals, according to Monitoring Plan.				X	2003	2006	Last deployment conducted in 2003; next deployment scheduled for 2006.
E.	Study use of zebra and quagga mussels as biomonitors.				X	2002	2003	Journal article summarizing results submitted to J. of Env. Toxicology and Chemistry. Data collected in 2003 for 2nd study to compare with 1995 results.

	ACTIVITY AND COMMENTS	EPA	DEC	EC	MOE	COMMITMENTS 2003	COMMITMENTS 2004	STATUS
F.	Assess sport fishery in Niagara River, with contaminant analysis.		X		X	2002	2003	2004-2005 Guide to Eating Ontario Sport Fish released in March 2004. MOE collections from Niagara River completed in fall of 2003; next field collection scheduled for 2004. NYS DOH's Health Advisories: Chemicals in Game and Sportfish issued annually.
G.	Collect sample of Falls Street Tunnel (FST) wet weather discharge and analyze for NRTMP priority chemicals using techniques to achieve low detection levels.		X			-	-	Completed; SPDES permit covering FST discharges was modified to include additional CSO controls in June 2003.
H	Develop plans for additional assessment of low-level contaminant discharges from Niagara River point sources.	X	X			Annual updates	Annual updates	See comments
	Comments: DEC/EPA's 1999 assessment of recent available information on toxic contaminant discharges from Niagara River point sources indicate the need for additional assessment of low-level contaminant discharges from point sources in the Niagara River. The purpose would be to help determine additional priorities for control of contaminant discharges from point sources. EPA sampling of these point sources is awaiting the availability of laboratory capacity.							
Define Additional Actions to Reduce Toxic Chemical Inputs to the Niagara River								
A.	Develop additional materials relating information on Niagara River contamination and contaminant sources, and incorporate into NRTMP Progress Report and Work Plan	X	X	X	X	Update in 2003	Annual updates as necessary	See comments
	Comments: DEC/EPA have completed three synthesis assessments, utilizing a variety of data sources to address: ambient toxic concentrations, and the significance of Niagara River sources; point sources of toxics; and characterization of toxic contaminants in sediments, biota and water of the Niagara River and its tributaries. Information and recommended actions from this synthesis effort were included in the 2001 Progress Report. DEC/EPA will continue to report on the results of synthesis-related efforts as available.							

	ACTIVITY AND COMMENTS	EPA	DEC	EC	MOE	COMMITMENTS 2003	COMMITMENTS 2004	STATUS
B.	Develop plans addressing water-quality limiting chemicals.	X	X			Beginning 2002	-	See comments
	Comments: A DEC/EPA assessment of water quality in the Niagara River indicates exceedences of New York water quality standards for some NRTMP Priority Toxic Chemicals. Niagara River waters and tributaries have previously appeared on New York's annual list of water quality-impaired waters (i.e. the Clean Water Act Section 303(d) list) due to water quality standard exceedences of PCBs, dioxin, and mirex. In 2002, the Niagara River was additionally listed under Part 3 the 303(d) list (Waters Previously Listed But Requiring Re-Assessment Based on New Methodology) due to potential exceedences of most stringent applicable NYS standards for the following PAHs: benzo(a)pyrene, chrysene, benzo(b/k)fluoranthene, and indeno(123-cd)pyrene. Total Maximum Daily Loads/Wasteload Allocations/Load Allocations (TMDLs/WLAs/LAs) may be developed, as necessary, for waters on the 303(d) list. The 2004 303(d) list is currently under development. Since monitoring data suggest several of these exceedences can be attributed to Lake Erie sources, DEC and EPA have communicated their priorities to the Lake Erie Lakewide Management Plan committee to ensure that their future strategy to address toxic contamination in Lake Erie be consistent with, and incorporate NRTMP concerns.							
Public Involvement								
A.	Develop a reader-friendly brochure that gives an overview of the NRTMP and summarizes progress made on restoring the Niagara River.	X	X	X	X	-	-	Completed
B.	Present remediation progress for U.S. hazardous waste sites at a public meeting in Niagara Falls.	X	X	X	X	2003	2006	Progress on U.S. hazardous waste site remediation will be summarized in the next scheduled NRTMP/LO LaMP annual public meeting in 2006.
C.	Make NRTMP information and reports available on the Internet. Develop a NRTMP web page.	X	X	X	X	As available	As available	See comments
	*Comments: Summaries of recent Four Party Upstream/Downstream Reports can be found on the GLIMR web site at http://www.on.ec.gc.ca/glimr/search.html (search "joint evaluation"). U.S. wastesite reports (**Reduction of Toxics Loadings to the Niagara River from Hazardous Waste Sites in the United States**) from 1998 and NRTMP progress reports are at http://www.epa.gov/grtlakes/lakeont/nrtmp. Additional reports will be added as they become available.*							
D.	Produce a progress report on the condition of the Niagara River and NRTMP efforts to restore the river. Update annual work plan for future actions	X	X	X	X	June 2003	June 2004	Last full report released in 2003, next scheduled for 2006; interim reports due in 2004 and 2005.

ACTIVITY AND COMMENTS		EPA	DEC	EC	MOE	COMMITMENTS 2003	2004	STATUS
E.	Hold a public meeting to present above progress and updated annual work plan	X	X	X	X	June 2003	June 2006	See comments
	Comments: The next NRTMP public meeting is scheduled for 2006, to coincide with the next scheduled full NRTMP report.							