

Progress toward water quality improvement: Ammonia-N. AMP 2013 Annual Report.  
(Water Quality Standard)

**AMENDED CONSENT JUDGMENT GOAL**

Achieve compliance with the ambient water quality standards, and removal of ammonia toxicity as impairment to designated best use for survival and propagation of a warm water fish community. Achieve desired use of aquatic life protection.

Hypotheses to be tested:	Status:																					
Improvements at Metro enables the County to meet Stage III effluent limits for ammonia N	<ul style="list-style-type: none"><li>Stage III effluent limits have been met for ammonia-N since 2004, after the BAF upgrade was implemented for year-round ammonia treatment.</li></ul>																					
Reduced ammonia load results in compliance with ambient water quality standards and federal criteria for ammonia in Onondaga Lake	<ul style="list-style-type: none"><li>Since 2004, Onondaga Lake has been in full compliance with NYS AWQS in upper waters.</li><li>Onondaga Lake de-listed as impaired by ammonia N in 2008</li></ul>																					
Current Conditions with Historical Comparison																						
Major Sources – Percent Contribution (Annual Average (standard deviation))	<table><tr><th>Time Period</th><th>Metro Effluent and Bypass</th><th>Tributaries</th></tr><tr><td>1985-2003:</td><td>89% (6%)</td><td>11% (6%)</td></tr><tr><td>2004-2009:</td><td>50% (14%)</td><td>50% (14%)</td></tr><tr><td>2010:</td><td>44%</td><td>56%</td></tr><tr><td>2011:</td><td>42%</td><td>58%</td></tr><tr><td>2012:</td><td>53%</td><td>47%</td></tr><tr><td>2013:</td><td>42%</td><td>58%</td></tr></table>	Time Period	Metro Effluent and Bypass	Tributaries	1985-2003:	89% (6%)	11% (6%)	2004-2009:	50% (14%)	50% (14%)	2010:	44%	56%	2011:	42%	58%	2012:	53%	47%	2013:	42%	58%
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Upper Waters Concentration (Annual Average (standard deviation))	<table><tr><th>Time Period</th><th>South Deep, 0-6 meters, Jan-Dec (mg/l)</th></tr><tr><td>1985-2003:</td><td>1.56 (0.63)</td></tr><tr><td>2004-2009:</td><td>0.19 (0.07)</td></tr><tr><td>2010:</td><td>0.14</td></tr><tr><td>2011:</td><td>0.11</td></tr><tr><td>2012:</td><td>0.14</td></tr><tr><td>2013:</td><td>0.14</td></tr></table>	Time Period	South Deep, 0-6 meters, Jan-Dec (mg/l)	1985-2003:	1.56 (0.63)	2004-2009:	0.19 (0.07)	2010:	0.14	2011:	0.11	2012:	0.14	2013:	0.14							
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Compliance with NYS AWQS in Upper Waters	Full compliance in 2013 Full compliance in upper waters since 2004.																					
Factors Affecting Compliance	Metro performance, hydrology, pH, and water temperature																					
Planned Load Reductions (1998 – 2012)																						
Metro SPDES Permit Requirement  (Stage III Limit has been met since 2004, eight years ahead of schedule)	Stage I Limit: Cap on Loading <ul style="list-style-type: none"><li>effective Jan 1998 - April 30, 2004 (completed)</li></ul> Stage II Limit: effective May 1, 2004 – Dec. 2012 <ul style="list-style-type: none"><li>June 1 – Oct. 31: 2.0 mg/l (as NH<sub>3</sub>)</li><li>Nov. 1 – May 31: 4.0 mg/l (as NH<sub>3</sub>)</li></ul> Stage III Limit: effective Dec. 2012 <ul style="list-style-type: none"><li>June 1 – Oct. 31: 1.2 mg/l (as NH<sub>3</sub>)</li><li>Nov. 1 – May 31: 2.4 mg/l (as NH<sub>3</sub>)</li></ul>																					
Monitoring and Assessment Program																						
Loading Estimates <i>Annual County monitoring program</i>	<ul style="list-style-type: none"><li>Biweekly tributary monitoring, supplemented with samples collected during high flow conditions</li><li>Daily measurements of Metro effluent</li></ul>																					
Lake Monitoring <i>Annual County monitoring program</i>	<ul style="list-style-type: none"><li>Biweekly profiles in Lake, April –Nov, 3-meter intervals</li><li>Winter sampling as weather allows</li></ul>																					
Related Biological Monitoring	<ul style="list-style-type: none"><li>Assessment of fish, dreissenid and invertebrate communities</li></ul>																					
Tools for Decision Making																						
Model	Onondaga Lake Water Quality Model (Anchor QEA, LLC)																					
TMDL Allocations	NYSDEC Phase I TMDL 8/27/97; Onondaga Lake was delisted from Section 303d in 2008 for ammonia since applicable water quality standards are being met. No additional TMDL is needed.																					