

# Technical Memorandum

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## *Significant BOD Point and Nonpoint Sources in the Little Youghiogheny River Watershed*

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EPA requires that Total Maximum Daily Load (TMDL) allocations account for all significant sources of the impairing pollutant. The TMDL analysis for the Little Youghiogheny River addresses biochemical oxygen demand (BOD) loads during low-flow conditions (June – October). This technical memorandum identifies the significant point and nonpoint sources of BOD used as modeling input for simulating all potentially significant sources when computing the TMDL. BOD reflects the amount of oxygen consumed through two processes: carbonaceous biochemical oxygen demand (CBOD) and nitrogenous biochemical oxygen demand (NBOD). The water quality goal of the TMDL is to establish allowable CBOD and NBOD inputs at a level that will ensure the maintenance of the dissolved oxygen standard. The tables below provide CBOD and NBOD load distributions for point and nonpoint sources for 7Q10 low-flow conditions.

### Point Sources

Table 1 provides the key point source CBOD and NBOD effluent inputs used in the water quality model to determine the maximum CBOD and NBOD loads that the Little Youghiogheny River can accept during low-flow conditions.

**Table 1**  
**CBOD and NBOD Loads Attributed to Significant Point Sources Used to Compute the Low-Flow TMDL<sup>a</sup> (June – October)**

Point Source Name	Permit Number	CBOD Load	NBOD Load	Flow	CBOD Conc.	NBOD Conc.
		<i>lbs/month</i>	<i>lbs/month</i>	<i>gpd</i>	<i>mg/l</i>	<i>mg/l</i>
<b>Trout Run WWTP</b>	MD0051497	34.9	53.5	3,100	45	69
<b>Deer Park Spring Water</b>	MD0060844	67.6	41.4	36,000	7.5	4.6
<b>TOTAL</b>	N/A	102.5	94.9	39,100	N/A	N/A

<sup>a</sup> These loadings correspond to model Scenario 6 in the Draft TMDL Total Maximum Daily Load of Biochemical Oxygen Demand (BOD) for the Little Youghiogheny River, Garrett County, Maryland, September 2000.

It should be noted that various other point source allocations are feasible within the bounds of the TMDL. The loadings, concentrations, and flows represented in the table above are for illustrative purposes only. Actual effluent limits and related permit conditions will be established at the time of permit issuance or renewal and will be based upon conditions present at that time, as reflected in population projections, infrastructure needs, and appropriate concentrations and loadings needed to assure the maintenance of water quality standards.

## Nonpoint Sources

Nonpoint sources were estimated on the basis of observed in-stream data. Thus, it is not possible to show a distribution between different land uses. The nonpoint source loads that were used in the model account for both “natural” and human-induced components. The Maryland Department of the Environment (MDE) expressly reserves the right to allocate the TMDLs among different sources in any manner that is reasonably calculated to achieve water quality standards.

**Table 2**  
**Allowable CBOD and NBOD Loads Attributed to Background and Tributary Nonpoint Sources Under the Low-Flow TMDL<sup>b</sup> (June – October)**

Model Station / Nonpoint Source	CBOD Load	Percent of CBOD Nonpoint Source Load	NBOD Load	Percent of NBOD Nonpoint Source Load
	<i>lbs/month</i>	%	<i>lbs/month</i>	%
<b>Background</b>	91.2	31.0	93.0	29.3
<b>Sta. 2 / Unnamed Tributary</b>	6.6	2.2	6.6	2.1
<b>Sta. 3 / Unnamed Tributary</b>	9.3	3.2	9.6	3.0
<b>Sta. 4 / Unnamed Tributary</b>	9.6	3.3	9.6	3.0
<b>Sta. 6 / Broadford Run</b>	-	-	-	-
<b>Sta. 7 / Unnamed Tributary</b>	55.5	18.9	56.7	17.9
<b>Sta. 8 / Unnamed Tributary</b>	5.7	1.9	5.7	1.8
<b>Sta. 10 / Trout Run</b>	64.2	21.8	88.2	27.8
<b>Sta. 11 / Unnamed Tributary</b>	4.5	1.5	4.5	1.4
<b>Sta. 12 / Unnamed Tributary</b>	1.8	0.6	1.8	0.6
<b>Sta. 13 / Cotton Run</b>	8.1	2.8	7.5	2.4
<b>Sta. 14 / Unnamed Tributary</b>	5.1	1.7	4.8	1.5
<b>Sta. 15 / Wilson Run</b>	22.2	7.5	18.9	5.9
<b>Sta. 16 / Unnamed Tributary</b>	3.0	1.0	3.0	0.9
<b>Sta.18 / Bradley Run</b>	7.5	2.6	7.5	2.4
<b>TOTAL</b>	294.3	100.0	317.4	100.0

<sup>b</sup> These loadings correspond to model Scenario 6 in the Draft TMDL Total Maximum Daily Load of Biochemical Oxygen Demand (BOD) for the Little Youghiogheny River, Garrett County, Maryland, September 2000.