

## Technical Memorandum

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### *Significant BOD Point and Nonpoint Sources in Georges Creek 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 Georges Creek 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 TMDLs. 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 TMDLs is to establish allowable CBOD and NBOD inputs at a level that will ensure the maintenance of the dissolved oxygen standard. The point source allocations described in this memorandum represent viable individual allocations to each source. However, 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. 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 Georges Creek can accept during low-flow conditions.

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

Point Source Name	<b>CBOD Load</b> <i>lbs/month</i>	<b>NBOD Load</b> <i>lbs/month</i>	<b>Flow</b> <i>mgd</i>	<b>CBOD Conc.</b> <i>mg/l</i>	<b>NBOD Conc</b> <i>mg/l</i>
Georges Creek WWTP MD0060071					
Waste Load Allocation	6,755	17,264	0.6	45	115
Future Waste Load Alloc.	3,378	8,632	0.3	N/A	
<b>TOTAL</b>	10,133	25,896	0.9		

<sup>a</sup> These loadings correspond to model Scenario 3 in the draft document titled “Total Maximum Daily Loads of Carbonaceous Biochemical Oxygen Demand (CBOD) and Nitrogenous Biochemical Oxygen Demand (NBOD) for Georges Creek, Allegany and Garrett Counties, Maryland, October 12, 2001”.

It should be noted that various other point source allocations are feasible within the bounds of the TMDLs. 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.