

INFORMATION SHEET

Proposed Total Maximum Daily Load (TMDL) for Surveyor Run, located in Goshen and Girard Townships, Clearfield County, Pennsylvania

What is being proposed?

A TMDL is a report that documents the pollution loads in the stream and the amount of pollution that must be removed for the stream to be healthy again.

Who is proposing the TMDL? To whom and why?

The Moshannon District Office has collected water quality and quantity data for the stream and has written the TMDL report. The report will be provided to the U.S. Environmental Protection Agency (U.S. EPA) for review and approval as required by federal regulation.

In 1995, U.S. EPA was sued for not developing TMDLs when Pennsylvania failed to do so. Pa. DEP has entered into an agreement with U.S. EPA to develop TMDLs for certain specified waters over the next several years. This TMDL has been developed in compliance with the state/U.S. EPA agreement.

What is a TMDL?

A Total Maximum Daily Load (TMDL) sets a limit on the pollutant loads that can enter a water body so the water body will meet water quality standards. The Clean Water Act requires states to assess streams and water bodies and compile a list of all waters that do not meet their water quality standards even after pollution controls required by law are in place. For these waters, the state must calculate how much of a substance can be put in the water without violating the water quality standard and distribute that quantity to all the sources of the pollutant on that water body. A TMDL plan may include load allocations for sources of pollution being discharged from treatment ponds on active mining operations, pollution load allocations for sources of abandoned mine drainage, and a margin of safety.

The Clean Water Act requires states to submit their TMDLs to U.S. EPA for approval. If a state does not develop the TMDL, the Clean Water Act states that U.S. EPA must do so.

What is a water quality standard?

The Clean Water Act sets a national minimum goal that all waters be “fishable” and “swimable.” To support this goal, states must adopt water quality standards.

Water quality standards are state regulations that have two components. The first component is a designated use, such as “warm water fishes” or “recreation.” States must assign a use, or several uses, to each of their waters. The second component relates to the

in-stream conditions necessary to protect the designated use(s). These conditions or “criteria” are physical, chemical, or biological characteristics, such as temperature and minimum levels of dissolved oxygen, and maximum concentrations of toxic pollutants.

It is the combination of the “designated use” and the “criteria” to support that use that make up a water quality standard. If any criteria are being exceeded, then the use is not being met and the water is said to be impaired.

What is the purpose of the plan?

The pH of Surveyor Run is impaired due to acid mine drainage (AMD) contributions. Surveyor Run is also impaired by high concentrations of metals, specifically iron, manganese, and aluminum. The plan includes a calculation for the loading of iron, manganese, aluminum, and acidity, a surrogate for pH, which will meet Pennsylvania water quality objectives.

Why did we choose Surveyor Run?

In 1996, 1998, and 2002, Pa. DEP listed Surveyor Run under Section 303(d) of the Clean Water Act as being impaired due to acid mine drainage.

What pollutants does this TMDL address?

The proposed plan provides calculations of Surveyor Run’s total capacity to accept acidity and metals to meet Pennsylvania water quality objectives.

Where do the pollutants come from?

The pollutants come primarily from abandoned mine workings. The Surveyor Run Watershed was mined for coal from the late 19th and the 20th centuries. The effects of this mining are still present. Today there are two active mining operations in the watershed.

How was the TMDL developed?

Quarterly samples of the stream quality and its flow were collected at numerous places in the watershed. Monte Carlo simulation techniques were used to determine the long-term average daily loads that a stream segment could accept and still meet water quality criteria 99% of the time. Monte Carlo simulation allows for the expansion of a data set based on its statistical makeup. Since there was no one critical flow condition where criteria were exceeded, the 50th percentile flow value was used to weight the pollutant concentrations. All analyses were started at the headwaters of each stream segment where a pollution load is mathematically taken away from each of the stream segments in order to determine conditions where the stream will meet water quality standards.

How much pollution is too much?

The allowable amount of pollution in a stream varies depending on several conditions. TMDLs are set to meet water quality standards at the defined critical flow condition. If there is more than one critical flow condition, the TMDL must be constructed to meet water quality criteria at all flow conditions. This is the case in Surveyor Run. For this reason, the long-term average daily load values that will meet water quality criteria 99% of the time were used as the basis for the TMDL.

The applicable water quality criteria for pH are dependent on the alkalinity present in-stream. A balance between the in-stream acidity and alkalinity is necessary so that a minimum net alkalinity of zero is maintained in-stream 99% of the time. For a given stream segment, the in-stream alkalinity was used as the water quality standard for pH; because different segments had different amounts of in-stream alkalinity, the water quality standard for pH varied from segment to segment.

The applicable water quality criteria for metals are a daily average of 1.5 mg/l total iron, a one hour maximum of 0.75 mg/l total aluminum, and a maximum of 1.0 mg/l total manganese.

What is the TMDL for Surveyor Run?

A TMDL consists of a load allocation (LA) for non-point sources, a wasteload allocation (WLA) for point sources, and a Margin of Safety. LA's are calculated for a stream segment at the most downstream station of the segment. In terms of the TMDL, a segment is defined as a section of the stream measured from a downstream station to the next upstream station(s). WLA's are assigned to the NPDES permitted discharges within the stream segment. For these TMDLs the Margin of Safety is included in the results calculated from the modeling through conservative assumptions. TMDLs were calculated for ten stream segments in the Surveyor Run watershed. Following is a table containing the calculated TMDLs.

$$\text{TMDL} = \text{WLA} + \text{LA} + \text{MOS}$$

TMDL Component Summary for the Surveyor Run Watershed

Station	Parameter	WLA	LA	MOS	TMDL
		lbs/day	lbs/day		lbs/day
SR002	Fe	0.0	NA	*	NA
	Mn	0.0	3.2	*	3.2
	Al	0.0	2.5	*	2.5
	Acidity	0.0	17.4	*	17.4
SR001	Fe	0.0	NA	*	NA
	Mn	0.0	0.4	*	0.4
	Al	0.0	NA	*	NA
	Acidity	0.0	8.9	*	8.9
MP8	Fe	0.0	5.0	*	5.0
	Mn	0.0	4.9	*	4.9
	Al	0.0	4.1	*	4.1
	Acidity	0.0	29.2	*	29.2
SR003	Fe	0.0	1.1	*	1.1
	Mn	0.0	0.6	*	0.6
	Al	0.0	0.6	*	0.6
	Acidity	0.0	9.1	*	9.1
MP9	Fe	0.0	0.3	*	0.3
	Mn	0.0	0.3	*	0.3

Station	Parameter	WLA	LA	MOS	TMDL
		lbs/day	lbs/day		lbs/day
MP9	Al	0.0	0.3	*	0.3
	Acidity	0.0	0.0	*	0.0
MP28	Fe	0.0	6.0	*	6.0
	Mn	0.0	2.4	*	2.4
	Al	0.0	3.6	*	3.6
	Acidity	0.0	5.9	*	5.9
MP25	Fe	0.0	10.2	*	10.2
	Mn	0.0	8.4	*	8.4
	Al	0.0	5.6	*	5.6
	Acidity	0.0	0.0	*	0.0
MP26	Fe	1.1	2.5	*	3.6
	Mn	0.7	2.7	*	3.4
	Al	0.7	1.9	*	2.6
	Acidity	0.0	17.0	*	17.0
LM509	Fe	0.0	2.5	*	2.5
	Mn	0.0	2.2	*	2.2
	Al	0.0	1.8	*	1.8
	Acidity	0.0	3.0	*	3.0
MP6	Fe	2.2	14.7	*	16.9
	Mn	1.4	14.1	*	15.5
	Al	1.4	11.4	*	12.8
	Acidity	0.0	76.6	*	76.6

How will these limits be met?

A remediation plan will need to be developed for Surveyor Run in order to meet the water quality objectives outlined in this report. Currently there are no watershed organizations actively addressing Surveyor Run.

How can I get more information on the TMDL?

The TMDL report for Surveyor Run can be viewed and printed at: http://www.dep.state.pa.us/watermanagement_apps/tmdl/. For questions or to receive a copy of the TMDL report and an information sheet, contact John Mital, Geologic Specialist, Moshannon District Mining Office, 186 Enterprise Road, Philipsburg, PA 16866, (814) 342-8200. E-mail will be received at jmital@state.pa.us. Persons with a disability may use the AT&T Relay Service by calling 1-800-654-5984 (TDD users) or 1-800-654-5988 (voice users) and request that the call be relayed. Directions to the Clearfield County Multiservice Center can also be obtained by contacting this address. Comments will not be accepted by facsimile or voice mail.

How can I comment on the proposal?

All written comments must be postmarked by March 3, 2004 to the above address.