

# UNITED STATES ENVIRONMENTAL PROTECTION AGENCY Region 1 1 Congress Street, Suite 1100 BOSTON, MA 02114-2023

June 2, 2008

Alicia Good, Assistant Director of Water Resources Rhode Island Department of Environmental Management Office of Water Resources 235 Promenade Street Providence, RI 02908

SUBJECT: Approval of Indian Run Brook TMDL

Dear Ms. Good:

Thank you for your submission of Rhode Island's Total Maximum Daily Load (TMDL) for Indian Run Brook, South Kingstown, RI, for copper, lead, and zinc. This water body was included on the State's 2006 303(d) list and was prioritized for TMDL development. The purpose of this TMDL for Rhode Island waters is to address metals-related impairments to aquatic life use from point and nonpoint source pollution.

The U.S. Environmental Protection Agency (EPA) hereby approves Rhode Island's TMDL for Indian Run Brook, received by EPA on May 9, 2008. EPA has determined that this TMDL meets the requirements of §303(d) of the Clean Water Act (CWA), and of EPA's implementing regulations (40 CFR Part 130). Attached is a copy of our approval documentation.

My staff and I look forward to continued cooperation with the RI DEM in exercising our shared responsibility of implementing the requirements under Section 303(d) of the CWA.

If you have any questions, please contact Stephen Silva (617-918-1561) or Steven Winnett (617-918-1687) of my staff.

Sincerely,

/s/

Stephen S. Perkins, Director Office of Ecosystem Protection

cc Angelo Liberti, RI DEM Elizabeth Scott, RI DEM Kristen Chantrell, RI DEM Stephen Silva, EPA Steven Winnett, EPA

#### EPA NEW ENGLAND'S TMDL REVIEW

TMDL: Indian Run Brook

**Location:** Town of South Kingstown.

**STATUS:** Final

**IMPAIRMENT/POLLUTANT**: Indian Run Brook is not meeting criteria for dissolved copper, lead and zinc, and is not supporting designated use of aquatic life use. The major factors are metals impairments associated with both dry and wet weather. A year-around TMDL submission is presented for metals.

**BACKGROUND:** The Rhode Island Department of Environmental Management (DEM) submitted to EPA New England the final Total Maximum Daily Load Analysis for the *Indian Run Brook* (the "TMDL" or "Report") with a transmittal letter dated May 7, 2008, and it was received by EPA on May 9, 2008. DEM addressed EPA's January 17, 2008 written comments. The submission included:

- Final TMDL report for metals in Indian Run Brook;
- Implementation plan for achieving TMDL reductions, Chapter 6, pp. 38-45;
- Water quality data, Appendix A, pp. 50-58;
- Public comments and response to comments, Appendix B, pp 59-67; and
- References set out in Chapter 9, pp. 48-49.

The following review explains how the TMDL submission meets the statutory and regulatory requirements of TMDLs in accordance with § 303(d) of the Clean Water Act, and EPA's implementing regulations in 40 CFR Part 130.

**REVIEWERS:** Steven Winnett (617-918-1687) E-mail: winnett.steven@epa.gov

#### **REVIEW ELEMENTS OF TMDLs**

Section 303(d) of the Clean Water Act (CWA) and EPA's implementing regulations at 40 C.F.R. § 130 describe the statutory and regulatory requirements for approvable TMDLs. The following information is generally necessary for EPA to determine if a submitted TMDL fulfills the legal requirements for approval under Section 303(d) and EPA regulations, and should be included in the submittal package. Use of the verb "must" below denotes information that is required to be submitted because it relates to elements of the TMDL required by the CWA and by regulation.

# 1. Description of Water Body, Pollutant of Concern, Pollutant Sources and Priority Ranking

The TMDL analytical document must identify the water body as it appears on the State/Tribe's 303(d) list, the pollutant of concern and the priority ranking of the water body. The TMDL submittal must include a description of the point and nonpoint sources of the pollutant of concern, including the magnitude and location of the sources. Where it is possible to separate natural background from nonpoint sources, a description of the natural background must be provided, including the magnitude and location of the source(s). Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. The TMDL submittal should also contain a description of any important assumptions made in developing the TMDL, such as: (1) the assumed distribution of land use in the watershed; (2) population characteristics, wildlife resources, and other relevant information affecting the characterization of the pollutant of concern and its allocation to sources; (3) present and future growth trends, if taken into consideration in preparing the TMDL; and, (4) explanation and analytical basis for expressing the TMDL through surrogate measures, if applicable. Surrogate measures are parameters such as percent fines and turbidity for sediment impairments, or chlorophyll a and phosphorus loadings for excess algae.

Indian Run Brook is located in the Town of South Kingstown, Rhode Island. The Report describes the pollutants of concern (dissolved copper, lead and zinc), which impair aquatic life use (TMDL pp. 4-5). It lists the water body as it appears on the State's 2004 and 2006 303(d) lists and explains it is in Group 1 of the 303(d) list, which has the highest priority for TMDL development (TMDL p. 4).

The submission includes a general description of the point and nonpoint sources that contribute to the water quality impairments (TMDL pp. 27-29), as well as in-depth discussions of the water monitoring and data that indicate the condition of the water bodies (TMDL pp. 18-26). Metals impairments arise both from wet and dry weather discharges. Wet weather sources are primarily stormwater runoff. Dry weather sources include other miscellaneous sources.

Assessment: DEM has adequately identified the water body, the pollutants of concern, the magnitude and location of the sources of pollution. The TMDL also includes an adequate description of important assumptions made in developing the TMDL.

# 2. Description of the Applicable Water Quality Standards (WQSs) and Numeric Water Quality Target

The TMDL submittal must include a description of the applicable State/Tribe water quality standard, including the designated use(s) of the water body, the applicable numeric or narrative water quality criterion, and the antidegradation policy. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation. A numeric water quality target for the TMDL (a quantitative value used to measure

whether or not the applicable water quality standard is attained) must be identified. If the TMDL is based on a target other than a numeric water quality criterion, then a numeric expression, usually site specific, must be developed from a narrative criterion and a description of the process used to derive the target must be included in the submittal.

Indian Run Brook is classified as a Class B water body, and the numeric water quality targets are set at the appropriate numeric water quality standard for the pollutants. For metals, the numeric water quality target is set at the appropriate water quality criteria, which is calculated based on the water's hardness value (TMDL Table 1.2, p. 6, and below). As the hardness values did not differ significantly between wet weather and dry weather conditions (TMDL p. 30), DEM used an average hardness value from the two conditions to calculate its metals criteria. The choice of a mean hardness value is thought to be representative of all conditions, especially the critical conditions of low flow when dilution is limited.

ACUTE CRITERIA (calculated using average dry and wet weather hardness values)		CHRONIC CRITERIA (calculated using average dry and wet weather hardness values)		
WATERBODY ID NUMBER		WATERBODY ID NUMBER		
Parameter	RI0010045R-02	Parameter	RI0010045R-02	
Hardness (mg/L CaCO <sub>3</sub> )	17.2	Hardness (mg/L CaCO <sub>3</sub> )	17.2	
Copper (ug/l)	2.56	Copper (ug/l)	1.99	
Lead (ug/l)*	8.68	Lead (ug/l)	0.34	
Zinc (ug/l)	26.37	Zinc (ug/l)	26.59	

<sup>\*</sup>When an ambient hardness of less than 25 mg/l is used the hardness dependent Conversion Factor (CF) should not exceed one.

Reproduced from the DEM Indian Run Brook TMDL, May 2008.

Assessment: EPA New England concludes that DEM has properly presented its water quality standards when setting a numeric water quality target.

# 3. Loading Capacity - Linking Water Quality and Pollutant Sources

As described in EPA guidance, a TMDL identifies the loading capacity of a water body for a particular pollutant. EPA regulations define loading capacity as the greatest amount of loading that a water can receive without violating water quality standards (40 C.F.R. § 130.2(f)). The loadings are required to be expressed as either massper-time, toxicity or other appropriate measure (40 C.F.R. § 130.2(i)). The TMDL submittal must identify the water body's loading capacity for the applicable pollutant and describe the rationale for the method used to establish the cause-and-effect relationship between the numeric target and the identified pollutant sources. In most instances, this method will be a water quality model. Supporting documentation for the TMDL analysis must also be contained in the submittal, including the basis for assumptions, strengths and weaknesses in the analytical process, results from water quality modeling, etc. Such information is necessary for EPA's review of the load and wasteload allocations which are required by regulation.

In many circumstances, a critical condition must be described and related to physical conditions in the water body as part of the analysis of loading capacity (40 C.F.R. § 130.7(c)(1)). The critical condition can be thought of as the "worst case" scenario of environmental conditions in the water body in which the loading expressed in the TMDL

for the pollutant of concern will continue to meet water quality standards. Critical conditions are the combination of environmental factors (e.g., flow, temperature, etc.) that results in attaining and maintaining the water quality criterion and has an acceptably low frequency of occurrence. Critical conditions are important because they describe the factors that combine to cause a violation of water quality standards and will help in identifying the actions that may have to be undertaken to meet water quality standards.

In the Indian Run Brook watershed, wet weather sources are a significant cause of metals criteria water quality impairment, although exceedances of metals criteria take place during dry weather, as well. TMDL targets are expressed two ways, as instream concentrations at criteria levels, and as percent reductions necessary to achieve criteria levels based on ambient data for each segment. This is a recognized alternative to loadings and allocations being calculated for individual sources.

DEM describes the rationale for the methods used to establish the cause-and-effect relationship between the numeric targets (WQSs) and the identified pollutant sources. DEM sets reduction goals for the impaired water body by comparing current metals concentrations to the applicable water quality target, then calculating the percent reduction required to reach that target (TMDL p. 34, Table 5.2 and p. 36, Table 5.4). Since the water quality standards specify both chronic and acute criteria, the higher percent reduction, generally associated with the chronic criteria, are used to set the necessary percent reduction for each metal (TMDL p. 37, Table 5.5). DEM explains the process for calculating the reduction goals (TMDL pp. 30-36) and provides a discussion of the strengths and weakness in the analytical process for linking water quality to sources of pollutants (TMDL pp. 37-38).

DEM has said that it considers the pollutant concentrations and percent reduction targets in these TMDLs to apply daily. The allowable daily load is the criteria concentration times the daily flow in the receiving water.

Assessment: EPA New England concludes that the loading capacities, having been set equal to the State's water quality criteria levels calculated to achieve water quality criteria and for reductions in wet weather discharges and dry weather conditions needed to achieve criteria, have been appropriately set at levels necessary to attain and maintain applicable water quality standards. The TMDL is based on a reasonable approach for establishing the relationship between pollutant loading and water quality in the river and its tributary.

EPA's regulations at 40 C.F.R. §130.7(c)(1) require that TMDLs identify water quality targets that are consistent with all applicable water quality standards. EPA New England has accepted the percent reduction approach for TMDLs in some rivers and streams under an assumption that the reductions needed to meet applicable water quality standards at ambient stations are representative of the reductions needed to meet the applicable standards throughout the water body segment. The small segment sizes make this a valid assumption. The target loading capacities expressed in the TMDL document are set at levels which assure WQS will be met (percent reductions based on meeting ambient water quality criteria).

DEM states that the daily maximum load may be calculated by multiplying the concentration criterion by stream flow to calculate a daily mass loading.

## 4. Load Allocations (LAs)

EPA regulations require that a TMDL include LAs, which identify the portion of the loading capacity allocated to existing and future nonpoint sources and to natural background (40 C.F.R. § 130.2(g)). Load allocations may range from reasonably accurate estimates to gross allotments (40 C.F.R. § 130.2(g)). Where it is possible to separate natural background from nonpoint sources, load allocations should be described separately for background and for nonpoint sources.

If the TMDL concludes that there are no nonpoint sources and/or natural background, or the TMDL recommends a zero load allocation, the LA must be expressed as zero. If the TMDL recommends a zero LA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero LA implies an allocation only to point sources will result in attainment of the applicable water quality standard, and all nonpoint and background sources will be removed.

Information to support the development of separate allocations for load and wasteload allocations for wet weather discharges do not exist. Consequently, the LA is included in the WLA (TMDL p. 37). Note that this approach does not affect the regulation of storm water that is subject to Phases I or II of EPA's storm water program.

**Assessment:** EPA New England concludes that it is unnecessary to include a specific load allocation, as the information to support separate load and wasteload allocations does not exist. Consequently, the load allocation is included in the wasteload allocation, below.

## 5. Wasteload Allocations (WLAs)

EPA regulations require that a TMDL include WLAs, which identify the portion of the loading capacity allocated to existing and future point sources (40 C.F.R. § 130.2(h)). If no point sources are present or if the TMDL recommends a zero WLA for point sources, the WLA must be expressed as zero. If the TMDL recommends a zero WLA after considering all pollutant sources, there must be a discussion of the reasoning behind this decision, since a zero WLA implies an allocation only to nonpoint sources and background will result in attainment of the applicable water quality standard, and all point sources will be removed.

In preparing the wasteload allocations, it is not necessary that each individual point source be assigned a portion of the allocation of pollutant loading capacity. When the source is a minor discharger of the pollutant of concern or if the source is contained within an aggregated general permit, an aggregated WLA can be assigned to the group of facilities. But it is necessary to allocate the loading capacity among individual point sources as necessary to meet the water quality standard.

The TMDL submittal should also discuss whether a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur. In such cases, the State/Tribe will need to demonstrate reasonable assurance that the nonpoint source reductions will occur within a reasonable time.

The submission contains a wasteload allocation that is expressed as the percent reduction for metals required to meet the water quality standards. As mentioned in the LA review (above)

because information to support the development of separate allocations for load and wasteload allocations do not exist, the LA is included in the WLA for each segment. Because there is no specifically calculated LA, and the MOS is implicit (see Section 6, below), the WLA = TMDL.

DEM used the maximum values from each data set to determine the existing conditions and to set the reductions necessary to meet standards. They compared the wet and dry weather conditions to both the acute and chronic criteria for each metal. For zinc and copper, the highest exceedances of the standards were associated with wet weather, and consequently, the highest wet weather values for these metals were used to set the reductions. For lead, the highest exceedances were associated with during dry weather, and so the highest dry weather exceedances were used to set the lead reduction.

DEM used the most protective standard to set the TMDL targets. For copper and zinc, the most protective standard is clearly the chronic criteria. For zinc, the two criteria are insignificantly different (26.37 vs. 26.59), and so the chronic criteria were used for all three metals.

**Assessment:** EPA New England concludes that the WLAs for this submission are acceptable and reasonable, and have sufficiently addressed all sources of pollution.

# 6. Margin of Safety (MOS)

The statute and regulations require that a TMDL include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality (CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1)). EPA guidance explains that the MOS may be implicit, i.e., incorporated into the TMDL through conservative assumptions in the analysis, or explicit, i.e., expressed in the TMDL as loadings set aside for the MOS. If the MOS is implicit, the conservative assumptions in the analysis that account for the MOS must be described. If the MOS is explicit, the loading set aside for the MOS must be identified.

DEM has identified several assumptions as providing an implicit margin of safety (TMDL pp. 31-32). The following assumptions support the implicit margin of safety:

- Violations of acute metals criteria were based on individual sample concentrations, not average concentrations, which would have lowered the concentration below the trace metal criteria.
- The most protective numeric standard (the chronic aquatic life support standard) is used to set TMDL targets. In the case of zinc, the acute criterion is slightly lower than the chronic criterion, but because the difference is insignificant (26.37 vs. 26.59), the chronic value is used to set the standard.
- Use of the assumption that data collected during storm events was representative of four days is highly conservative, since it is commonly observed that the falling portions of the stream flow hydrograph may last an additional 2 days, thus providing an implicit margin of safety.
- To calculate the required percent reductions, the maximum metal concentrations in each data set were used to represent existing dry and wet weather conditions.

Assessment: For the reasons explained above, EPA New England concurs that an adequate MOS is provided by the conservative assumptions made in setting the TMDL target and in assigning wasteload allocations.

#### 7. Seasonal Variation

The statute and regulations require that a TMDL be established with consideration of seasonal variations. The method chosen for including seasonal variations in the TMDL must be described CWA § 303(d)(1)(C), 40 C.F.R. § 130.7(c)(1).

DEM is establishing year-round TMDLs based on the observation that there is no seasonal variation in pollutant levels in the River's mainstem. Critical conditions occur during wet weather, although there are exceedances of both chronic and acute standards during both high and low flow conditions. The year-round allocations for metals account for all seasonality concerns because they are based on the more stringent of wet or dry weather calculated targets.

**Assessment:** EPA New England concludes that seasonal variations are not a concern as flow regime and weather, rather than seasonality, are the important conditions, and have been adequately accounted for in the TMDLs. In addition, pollutant controls are expected to be in place through the year so that these controls will reduce pollution whenever sources are active.

# 8. Monitoring Plan for TMDLs Developed Under the Phased Approach

EPA's 1991 document, Guidance for Water Quality-Based Decisions: The TMDL Process (EPA 440/4-91-001), and EPA's 2006 guidance, Clarification Regarding "Phased" Total Maximum Daily Loads, recommend a monitoring plan when a TMDL is developed using the phased approach. The guidance indicates that a State may use the phased approach for situations where TMDLs need to be developed despite significant data uncertainty and where the State expects that the loading capacity and allocation scheme will be revised in the near future. EPA's guidance provides that a TMDL developed under the phased approach should include, in addition to the other TMDL elements, a monitoring plan that describes the additional data to be collected and a scheduled timeframe for revision of the TMDL.

This is not a phased TMDL. The document includes a description of monitoring to ensure that plans for implementing water quality improvement activities are adjusted as monitoring indicates changes in the water quality of the impaired segments. The State discusses its plans for monitoring as and after the TMDL is implemented (TMDL p. 47).

Assessment: EPA concludes that the anticipated monitoring by and in cooperation with DEM is sufficient to evaluate the adequacy of progress toward attainment of WQS, although not a required element of EPA's TMDL approval process.

#### 9. Implementation Plans

On August 8, 1997, Bob Perciasepe (EPA Assistant Administrator for the Office of Water) issued a memorandum, "New Policies for Establishing and Implementing Total Maximum Daily Loads (TMDLs)," that directs Regions to work in partnership with States/Tribes to achieve nonpoint source load allocations established for 303(d)-listed waters impaired solely or primarily by nonpoint sources. To this end, the memorandum asks that Regions assist States/Tribes in developing implementation plans that include reasonable assurances that the nonpoint source load allocations established in TMDLs for waters impaired solely or primarily by nonpoint sources will in fact be achieved. The memorandum also includes a discussion of renewed focus on the public participation process and recognition of other relevant watershed management processes used in the TMDL process. Although implementation plans are not approved by EPA, they help establish the basis for EPA's approval of TMDLs.

A detailed implementation plan is provided in the submission (TMDL pp. 39-45) which specifically addresses the major identified sources of pollution. The plan discusses MS4 stormwater management in detail, and measures to reduce stormwater runoff to the area from identifiable (regulated) point and nonpoint sources.

Assessment: DEM has included an outline of implementation plans, priorities and authorities, although not a required element of the TMDL approval. EPA is taking no action on the implementation plan.

#### 10. Reasonable Assurances

EPA guidance calls for reasonable assurances when TMDLs are developed for waters impaired by both point and nonpoint sources. In a water impaired by both point and nonpoint sources, where a point source is given a less stringent wasteload allocation based on an assumption that nonpoint source load reductions will occur, reasonable assurance that the nonpoint source reductions will happen must be explained in order for the TMDL to be approvable. This information is necessary for EPA to determine that the load and wasteload allocations will achieve water quality standards.

In a water body impaired solely by nonpoint sources, reasonable assurances that load reductions will be achieved are not required in order for a TMDL to be approvable. However, for such nonpoint source-only waters, States/Tribes are strongly encouraged to provide reasonable assurances regarding achievement of load allocations in the implementation plans described in section 9, above. As described in the August 8, 1997 Perciasepe memorandum, such reasonable assurances should be included in State/Tribe implementation plans and "may be non-regulatory, regulatory, or incentive-based, consistent with applicable laws and programs."

Reasonable assurance is not required because point sources are not given less stringent wasteload allocations based on the assumption of future nonpoint source load reductions. However, DEM addresses reasonable assurances that storm water runoff reductions will occur by providing information about past and current surveys, and work in the watershed which point to a long term commitment to improving water quality (TMDL pp. 16-28). In addition, Chapter six contains a detailed implementation plan, which demonstrates a strong commitment, and existing investment, in improving water quality in the river (TMDL pp. 38-45).

Assessment: Although not required because DEM did not increase WLAs based on expected LA reductions, DEM has provided reasonable assurance that WQS will be met.

## 11. Public Participation

EPA policy is that there must be full and meaningful public participation in the TMDL development process. Each State/Tribe must, therefore, provide for public participation consistent with its own continuing planning process and public participation requirements (40 C.F.R. § 130.7(c)(1)(ii)). In guidance, EPA has explained that final TMDLs submitted to EPA for review and approval must describe the State/Tribe's public participation process, including a summary of significant comments and the State/Tribe's responses to those comments. When EPA establishes a TMDL, EPA regulations require EPA to publish a notice seeking public comment (40 C.F.R. § 130.7(d)(2)).

Inadequate public participation could be a basis for disapproving a TMDL; however, where EPA determines that a State/Tribe has not provided adequate public participation, EPA may defer its approval action until adequate public participation has been provided for, either by the State/Tribe or by EPA.

DEM provided a comment period from November 28, 2007 to January 3, 2008. Notice of this comment period and a public meeting on November 28, 2007 was sent via letters to the affected communities, key stakeholders, and others. DEM also publicized the meeting through a press release, and by posting its notice in public facilities and on its web site. The public meeting was well attended by residents and public officials, and DEM received several comments during the comment period. DEM has provided EPA with copies of all submitted comments and the Department's responses as an attachment to the final TMDL submission.

Assessment: EPA New England concludes that DEM involved the public during the development of the TMDL for *Indian Run Brook*, has provided adequate opportunities for the public to comment on the TMDL, and has provided reasonable responses to the public comments.

#### 12. Submittal Letter

A submittal letter should be included with the TMDL analytical document, and should specify whether the TMDL is being submitted for a technical review or is a final submittal. Each final TMDL submitted to EPA must be accompanied by a submittal letter that explicitly states that the submittal is a final TMDL submitted under Section 303(d) of the Clean Water Act for EPA review and approval. This clearly establishes the State/Tribe's intent to submit, and EPA's duty to review, the TMDL under the statute. The submittal letter, whether for technical review or final submittal, should contain such information as the name and location of the water body, the pollutant(s) of concern, and the priority ranking of the water body.

Assessment: A letter with appropriate information was included with the final submission.

Data for entry in EPA's National TMDL Tracking System									
TMDL Name		Indian Run Brook	<b>K</b>						
Number of TMDLs*		3							
Type of TMDLs*		Cu, Pb, Zn <sup>+</sup>							
Number of listed cause	es (from 303(d) list	t) 3	3						
Lead State		Rhode Island (RI)							
TMDL Status		Final							
Individual TMDLs listed below									
TMDL Segment name	TMDL Segment	TMDL Pollutant ID#	TMDL	Pollutant endpoint	Unlisted?	RIPDES Point Source	Listed for		
	ID#	& name	Impairment Cause(s)			& ID#	anything else		
Indian Run Brook	RI0010045R-02	16 (Dissolved Copper)	Copper	Chronic criteria: 1.99 ug/l copper		RIPDES General Stormwater Management Permit	Bacteria (TMDL 2003)		
Indian Run Brook	RI0010045R-02	18 (Dissolved Lead)	Lead	Chronic criteria: 0.34 ug/l lead		RIPDES General Stormwater Management Permit	Bacteria (TMDL 2003)		
Indian Run Brook	RI0010045R-02	21 (Dissolved Zinc)	Zinc	Chronic criteria: 26.59 ug/l zinc		RIPDES General Stormwater Management Permit	Bacteria (TMDL 2003)		
TMDL Type Point & Nonpoin			rce Stormwat	er					
Establishment Date (a	pproval)*	June 2, 2008	ne 2, 2008						
EPA Developed		No	3						
Towns affected*		South Kingstown, RI							

Data for entry in EPA's National TMDL Tracking System									
TMDL Name	TMDL Name Indian Run Brook								
Number of TMDLs*	3	3							
Type of TMDLs*		Cu, Pb, Zn <sup>+</sup>	Cu, Pb, Zn <sup>+</sup>						
Number of listed cause	es (from 303(d) list	) 3	3						
Lead State		Rhode Island (RI)	Rhode Island (RI)						
TMDL Status		Final							
Individual TMDLs li	sted below								
TMDL Segment name	TMDL Segment ID #	TMDL Pollutant ID# & name	TMDL Impairment Cause(s)	Pollutant endpoint	Unlisted?	RIPDES Point Source & ID#	Listed for anything else		
Indian Run Brook	RI0010045R-02	16 (Dissolved Copper)	Copper	Chronic criteria: 1.99 ug/l copper		RIPDES General Stormwater Management Permit	Bacteria (TMDL 2003)		
Indian Run Brook	RI0010045R-02	18 (Dissolved Lead)	Lead	Chronic criteria: 0.34 ug/l lead		RIPDES General Stormwater Management Permit	Bacteria (TMDL 2003)		
Indian Run Brook	RI0010045R-02	21 (Dissolved Zinc)	Zinc	Chronic criteria: 26.59 ug/l zinc		RIPDES General Stormwater Management Permit	Bacteria (TMDL 2003)		
TMDL Type Point & Nonpoint Source Stormwater									
Establishment Date (a	tablishment Date (approval)* June 2, 2008								
EPA Developed No									
Towns affected* South Kingstown, RI									