
CITY OF BELTON

TMDL MONITORING AND ASSESSMENT PLAN
Broad Mouth Creek Watershed

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PREPARED IN ACCORDANCE WITH SCDHEC PERMIT #SCR030000

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*Table of Contents follows section numbers of #SCR030000.

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List of Acronyms and Abbreviations

CFU	Colony Forming Units
MEP	Maximum Extent Practicable
MPN	Most Probable Number
POC	Pollutant of Concern
SCDHEC	South Carolina Department of Health and Environmental Control
TMDL	Total Maximum Daily Load
WLA	Wasteload Allocation
WQMS	Water Quality Monitoring Stations
WWTP	Waste Water Treatment Plant

CITY OF BELTON

TMDL MONITORING AND ASSESSMENT PLAN

BROAD MOUTH CREEK WATERSHED

The following monitoring and assessment plan was developed to meet the requirements of Section 3 of SCDHEC SMS4 permit number SCR030000.

3.2 TMDL Monitoring and Assessment

3.2.1 Introduction

A Total Maximum Daily Load (TMDL) has been developed for fecal coliform bacteria in the Broad Mouth Creek Watershed, which includes portions of the urbanized area in the City of Belton. The TMDL became effective in May 2005 and includes waste load allocations (WLA) for non-point source runoff that thereby includes these urbanized areas. Due to the recent change in preferred indicator bacteria by SCDHEC, from fecal coliform bacteria to *Escherichia coli* (*E. coli*) for fresh water, the proposed pollutant of concern (POC) to be sampled by the City at a representative location is *E. coli*.

3.2.1.2 Monitoring Plan Requirements

3.2.1.2.1.b Requirements to Monitor the Pollutants of Concern

As stated in Permit Number SCR030000, the following topics will be addressed in Table 1 and Table 2.

- i. Samples and measurements taken for the purpose of the TMDL Monitoring Plan shall:
 - (1) Be representative of the SMS4 discharges,
 - (2) Be reasonably distributed in time, while maintaining representative sampling,
 - (3) Not be terminated for the purpose of preventing the analysis results from a permit or water quality violation,
 - (4) Describe and consider frequency, mass and/or rate of discharge, as appropriate, and,
 - (5) Be expressed in terms of units or measurements consistent with the requirements contained in the WLA.

- ii. The information contained in the TMDL Monitoring Plan shall include:
 - (1) Monitoring locations, appropriate for representative data collection,
 - (2) Explanation of why monitoring is being conducted for selected locations,
 - (3) A description of whether the location(s) are representative and contribute to pollutant loads,
 - (4) An indication the seasons during which sampling is intended,
 - (5) The pollutant of concern, or its surrogate(s), as a sampling parameter,
 - (6) Description of the sampling equipment, and,
 - (7) A rationale supporting the proposed monitored location(s) as reflective of water quality concerns to the Maximum Extent Practicable (MEP).

3.2.1.2.1.b.i-ii Monitoring and Assessment Plan Details

Table 1: Monitoring Plan Details

<p>3.2.1.2.1.b.ii.(1) Monitoring location(s) and details on site selection:</p>
<p>In order to better determine the City of Belton’s contribution to the Broad Mouth Creek TMDL watershed, a monitoring location at the Pinson Farm Road crossing of a tributary to Broad Mouth Creek was selected. A map of the monitoring location can be found in Appendix A, and more information on the sampling location can be found in the sections below.</p>
<p>3.2.1.2.1.b.ii.(2) Explanation of why monitoring is being conducted for selected locations:</p>
<p>Due to the size of the Broad Mouth Creek TMDL watershed, multiple entities discharge into the watershed and contribute to the TMDL. Data collection will be conducted at the location discussed above. This sampling location will provide a general assessment of bacteria from the City’s urbanized area.</p>
<p>3.2.1.2.1.b.ii.(3) Description of the location(s) and whether they are representative of the MS4 discharge and contribute to pollutant loads:</p>
<p>The Pinson Farm Road site was selected due to the size of the sub watershed and the locations of the urbanized area; it is the most representative of the City’s contribution to the TMDL watershed, while avoiding inputs from other NPDES permittees, to the MEP. It provides the most suitable location overall to assess the TMDL from the City’s perspective.</p>
<p>3.2.1.2.1.b.ii.(4) Indication of the seasons during which sampling is intended:</p>
<p>Multiple samples will be collected for each storm event at least once per season. Seasons will be described as:</p> <p style="padding-left: 40px;">Winter: December 1 to February 30</p> <p style="padding-left: 40px;">Spring: March 1 to May 30</p> <p style="padding-left: 40px;">Summer: June 1 to August 30</p> <p style="padding-left: 40px;">Fall: September 1 to November 30</p> <p>Samples taken for each storm event will be reasonably distributed in time, pending appropriate weather conditions, watershed hydrologic response, and sample holding times.</p>
<p>3.2.1.2.1.b.ii.(5) The pollutant of concern, or its surrogate(s), as a sampling parameter:</p>
<p>Due to the recent change in preferred indicator bacteria by SCDHEC, from fecal coliform bacteria to <i>E. Coli</i> for fresh water, the proposed pollutant of concern (POC) to be sampled is <i>E. coli</i>. <i>E. coli</i> samples will be collected at the Pinson Farm Road crossing of the tributary to Broad Mouth Creek.</p>

3.2.1.2.1.b.ii.(6) Description of the sampling equipment:
The City of Belton will use sealed, sterile sample bottles provided by a contracted, SCDHEC certified laboratory to collect manual grab samples.
3.2.1.2.1.b.ii.(7) Rationale supporting the proposed monitored location(s):
Regardless of the location selected for sampling, the contributing watershed will always include sources of bacteria that are unrelated to the MS4 and are not within the authority of the MS4 to control. However, as discussed above in 3.2.1.2.1.b.ii.(3), due to the size of the watershed and the overall landuse makeup, the proposed location will be reflective of the urbanized contributions to the MEP within the City of Belton's urbanized area.

Table 2 discusses how samples and measurements taken for the purpose of the TMDL Monitoring Plan shall meet the five points listed in section 3.2.1.2.1.b.i of the SMS4 permit number SCR030000.

Table 2: 3.2.1.2.1.b.i

3.2.1.2.1.b.i.1 Be representative of the SMS4 discharges:
The proposed sampling location will provide representative data from the MS4, as the landuse is similar to that of the City's urbanized area in the watershed. It provides the most suitable location overall to assess the TMDL from the City's perspective.
3.2.1.2.1.b.i.2 Be reasonably distributed in time, while maintaining representative sampling:
Multiple samples will be collected during each event, distributed through time, to characterize each sampled event. Samples will be collected, at a minimum, once per season per year. Samples will be collected during various sized storm events so that different flow rates and storm events are characterized, to the MEP.
3.2.1.2.1.b.i.3 Not be terminated for the purpose of preventing the analysis results from a permit or water quality violation:
The City of Belton will not terminate sampling for the purpose of preventing the analysis results from a permit or water quality violation.
3.2.1.2.1.b.i.4 Describe and consider frequency, mass and/or rate of discharge, as appropriate:
The City of Belton will record flow depth at the time of sample collection as a surrogate for estimating flow volume between samples.
3.2.1.2.1.b.i.5 Be expressed in terms of units or measurements consistent with the requirements contained in the WLA:
Sample concentrations for <i>E. coli</i> will be provided by the laboratory and expressed as MPN/100 mL. The City will utilize guidance from SCDHEC to convert the Broad Mouth Creek Watershed TMDL targeted loads from fecal coliform to <i>E. coli</i> for comparison to the sampled concentrations and approximated loads. <i>E. coli</i> sample concentrations will be expressed by the certified laboratory as MPN/100 mL.

3.2.1.2.1.b.iii Monitoring and Assessment Plan Strategy

The TMDL monitoring plan for the City of Belton is focused on E. coli. Samples and measurements collected will be used to characterize the quality and quantity of the permitted discharges to evaluate the progress toward the WLA and/or WQS attainment. In order to do this, the City will implement the following strategies to the MEP:

- In-stream monitoring
- Outfall monitoring.

The monitoring location(s) discussed above in Table 2 was selected based on the following checked boxes: Monitoring locations must include one/all/a combination of the following

- % MS4 area draining to the WQMS, at least 25%,
- Collection of a representative contributing watershed,
- Inclusion of the entire TMDL watershed within the MS4.

Table 3 discusses how samples and measurements taken for the purpose of the TMDL Monitoring Plan shall meet the requirements of 3.2.1.2.1.b.iv-x of the SMS4 permit number SCR030000.

Table 3: 3.2.1.2.1.b.iv-x

3.2.1.2.1.b.vi Method Descriptions:
No field testing is required for this sample. Sample collection and transport procedures are approved under 40 CFR 136.
3.2.1.2.1.b.vii When no approved analytical method is used:
Not applicable
3.2.1.2.1.b.viii Sampling minimum:
For each monitoring location, samples of stormwater discharges shall be collected at a minimum of once per season per year.
3.2.1.2.1.b.ix Sample analysis:
Samples collected for laboratory analysis shall be analyzed for E. coli (the POC)
3.2.1.2.1.b.x Tidal waters:
Not applicable

3.2.1.2.1.d Reporting

The City of Belton will report on the progress of the characterization of the POC to the Broad Mouth Creek Watershed. Resulting data will be included in every annual report following the commencement of monitoring for TMDL pollutant characterization.

Appendix A
City of Belton
Broad Mouth Creek Watershed
Monitoring Site Map

City of Belton Broad Mouth Creek Sampling

