LOWER ARKANSAS BASIN TOTAL MAXIMUM DAILY LOAD

Waterbody: **Fall Creek**
Water Quality Impairment: Fecal Coliform Bacteria

1. INTRODUCTION AND PROBLEM IDENTIFICATION

Subbasin: Chikaskia **Counties**: Sumner

HUC 8: 11060005 **HUC 11s**: Not applicable

Drainage Area: Approximately 95 sq.mi.

Main Stem Segments: 14

Tributary Segments: Not applicable

Designated Uses: Secondary Contact Recreation; Expected Aquatic Life Support; Food Procurement

1998 303d Listing: Table 1 - Predominant Point and Non-point Source Impacts

Impaired Use: **Secondary Contact Recreation on Segment 14**

Water Quality Standard: 2000 colonies per 100 ml for Secondary (KAR 28-16-28e(c)(7)(C))

2. CURRENT WATER QUALITY CONDITION AND DESIRED ENDPOINT

Level of Support for Designated Use under 303d: Not Supporting at design low flow conditions

Monitoring Sites: None

Period of Record Used: Bacteria Wasteload Dilution calculations used

Long Term Flow Conditions: 7Q10 = 1 cfs

Current Condition: Wasteload dilution calculations indicate impairment to secondary contract recreation from elevated bacteria in river at critical low flow.

A permit has been issued to Caldwell, effective April 1, 2000 with a fecal coliform bacteria limit of 2000 colonies per 100 ml at a design flow of 0.24 MGD (0.37 cfs). The permit includes provisions for the city to draft, by April 1, 2001, a facility plan, including a Schedule of Compliance, for improvements to the wastewater treatment facility to consistently meet the limit. The Schedule of Compliance will indicate dates for submitting plans to KDHE, advertising

construction bids, begin and complete construction and achieve compliance with permit limits. The permit has an expectation of some degree of disinfection required to meet the permit limit.

3. SOURCE INVENTORY AND ASSESSMENT

NPDES: There is one NPDES permitted facility located along the river segment which will discharge bacteria under its permit.

Caldwell may discharge up to 0.24 MGD (0.37 cfs) and 2000 colonies per 100 ml of bacteria on monthly average. The renewed permit was issued April 1, 2000.

Non-point Sources: Because the impairment is anticipated under critical dry conditions, minimal non-point source contributions are anticipated. Background concentrations entering the reach are assumed to be 100 colonies per 100 ml of bacteria, a value which is fairly supported by ambient data collected in the basin.

4. ALLOCATION OF POLLUTION REDUCTION RESPONSIBILITY

Point Sources: The Wasteload Allocation will be based on the current permit limits established for Caldwell and will reflect 2000 or less colonies per 100 ml of bacteria in the effluent from the treatment plant. Essentially, the permit limit is equivalent to the water quality standard at the end of pipe.

Non-Point Sources: Based on the instream background level of 100 colonies per 100 ml, the Load Allocation is that background level in the 1 cfs of receiving stream prior to entry of the effluent.

Defined Margin of Safety: The margin of safety is implicit, relying on conservative assumptions used in establishing permit limits. Such assumptions include coincidental occurrence of the 7Q10 with the design flow from the facility, background levels and holding these conditions constant.

State Water Plan Implementation Priority: Because this stream segment may be improved through point source pollution reduction in a relatively short timeframe, this TMDL will be a High Priority for implementation.

Unified Watershed Assessment Priority Ranking: This watershed lies within the Chikaskia subbasin (HUC:11060005) with a priority ranking of 30 (Medium Priority for Restoration).

Priority HUC 11s and Stream Segments: Because of the point source nature of the TMDL, no attention needs to be directed to the adjoining HUC 11 subwatersheds. The priority stream segment of this TMDL will be Fall Creek, Segment 14 below Caldwell.

5. IMPLEMENTATION

Desired Implementation Activities

1. Issue NPDES permits with appropriate bacteria limits so water quality standards are met at critical low flow conditions.

Implementation Programs Guidance

NPDES and State Permits - KDHE
a. Municipal permits for facilities in the watershed will be renewed after 2002 with continuation of disinfection requirements, bacteria monitoring and permit limits preventing excursions in bacteria criteria.

Timeframe for Implementation: NPDES Permits should be re-issued by 2003. Any adjustments to existing permits will be made in 2001-2002. Planned upgrades should be completed prior to 2003.

Targeted Participants: Primary participants for implementation will be public works personnel at Caldwell.

Milestone for 2004: The year 2003 marks the renewal period for the NPDES permit at Caldwell. At that point in time, any necessary plant upgrades should be completed.

Delivery Agents: KDHE staff in the Municipal Program Sections will develop the appropriate permits, schedules of compliance and review of plans. Review of technical information and studies will be made by KDHE staff of the Technical Services Section and the Bureau of Environmental Field Services.

Reasonable Assurances:

Authorities: The following authorities may be used to direct activities in the watershed to reduce pollution.

1. K.S.A. 65-164 and 165 empowers the Secretary of KDHE to regulate the discharge of sewage into the waters of the state.

2. K.S.A. 65-171d empowers the Secretary of KDHE to prevent water pollution and to protect the beneficial uses of the waters of the state through required treatment of sewage and established water quality standards and to require permits by persons having a potential to discharge pollutants into the waters of the state.

3. K.S.A. 65-3335 empowers the Secretary of KDHE to provide financial assistance for wastewater treatment through the State Revolving Loan Fund.

Funding: The State Revolving Loan Fund is operated through the Municipal Program at KDHE and provides low interest loans for wastewater treatment improvement. Since its inception, $128 million in loans have been made to municipal dischargers in the state.

Effectiveness: Disinfection techniques within mechanical treatment plans, via either chemical or ultraviolet treatment is very effective at reducing bacteria levels. It is anticipated that application of this treatment will easily maintain bacteria levels below 2000 colonies per 100 ml.

6. MONITORING

KDHE will continue to monitor streamflow and bacteria. Spot sampling should be made if flow conditions fall below 1 cfs. Routine sampling of effluent quality will be a condition of the issued permits with testing frequency consistent with Kansas Surface Water Implementation Procedures.

7. FEEDBACK

Public Meetings: Public meetings to discuss TMDLs in the Lower Arkansas Basin were held March 9 in Wichita, April 26 in Wichita and Hutchinson, and April 27 in Arkansas City and Medicine Lodge. An active Internet Web site was established at http://www.kdhe.state.ks.us/tmdl/ to convey information to the public on the general establishment of TMDLs and specific TMDLs for the Lower Arkansas Basin.

Public Hearing: A Public Hearing on the TMDLs of the Lower Arkansas Basin was held in Wichita on June 1, 2000.

Basin Advisory Committee: The Lower Arkansas Basin Advisory Committee met to discuss the TMDLs in the basin on September 27, November 8, 1999; January 13, 2000; March 9, 2000 and June 1, 2000

Milestone Evaluation: In 2002, evaluation will be made as to the degree of implementation which has occurred along Fall Creek. Subsequent decisions will be made regarding the implementation approach at that time.

Consideration for 303(d) Delisting: The river will be evaluated for delisting under Section 303(d), based on the status of construction upgrades to the Caldwell facility in 2002. Therefore, the decision for delisting will come about in the preparation of the 2002 303(d) list. Should modifications be made to the applicable criterion during the ten year implementation period, consideration for delisting, desired endpoints of this TMDL and implementation activities may be adjusted accordingly.

Incorporation into Continuing Planning Process, Water Quality Management Plan and the Kansas Water Planning Process: Under the current version of the Continuing Planning Process, the next anticipated revision will come in 2002 which will emphasize revision of the Water Quality Management Plan. At that time, incorporation of this TMDL will be made into both documents.

Approved August 9, 2000.