



Matt Blunt, Governor • Doyle Childers, Director

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April 24, 2007

Mr. John DeLashmit, Chief
Water Quality Management Branch
U.S. Environmental Protection Agency
901 North 5th Street
Kansas City, KS 66101

RE: City of Stover's Southwest and Northwest Lagoons Permit Limits in Lieu of a Total Maximum Daily Load for Gabriel Creek (Water Body Identification No. 883)

Dear Mr. DeLashmit:

Gabriel Creek, near the City of Stover in Morgan County, Missouri, was listed on both the 1998 and 2002 303(d) Lists for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS). The sole sources of these impairments are Stover's Southwest Lagoon (most upstream) and Stover's Northwest Lagoon, Permit Numbers MO-0047058 and MO-0047040, respectively. The Missouri Department of Natural Resources (department) has opted to correct these impairments through permit limits in lieu of a Total Maximum Daily Load (TMDL).

The lagoons discharge near the headwaters of Gabriel Creek and the upstream flow is very low, ranging from zero to 0.01 cubic feet per second. The effluent contribution to the stream is 10 to 80 times that of the stream flow itself. There are no other wastewater treatment plants or other known anthropogenic sources that would cause low dissolved oxygen (DO) upstream of the lagoons. The listing for the impaired reach was based on stream surveys conducted on August 5, 1982, June 24, 1992, and August 10, 1993, above and below the lagoon systems. On those dates, department personnel observed violations of Missouri's narrative standards for Volatile Suspended Solids directly downstream and attributable to the lagoons. These included odor, duckweed, organic sludge deposits, and filamentous algae. The creek upstream was reported as "looking good overall." Subsequent sampling on August 8, 2002, July 23, 2003, and September 10, 2004, demonstrated a significant reduction of DO below the treatment facilities. Data from 2004 also documented a morning DO of 5.0 mg/L upstream of the treatment facility, further confirming the belief that the facilities are the sole source of the impairment.

The department issued two new permits to the City of Stover on April 13, 2007. The previous permits had weekly average and monthly average limits for BOD of 65 mg/L and 45 mg/L, respectively. The weekly and monthly average limits for TSS were 120 mg/L and 80 mg/L. A wasteload allocation (WLA) study was conducted on Gabriel Creek in July 2005 by Parsons (EPA contract 68-C-02-111, Task Order 2005-19, "Waste Load Allocations for Controls to Achieve Standards in Listed Segments in Missouri"). A steady-state water quality model (QUAL2K) was constructed and calibrated from data generated by the study, which was used to determine a BOD WLA protective of Gabriel Creek (25 mg/L). The WLA for TSS was set at the same level as BOD.



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The permit for the Southwest Lagoon was issued with limits ensuring stream water quality standards will be met. The water quality standard for DO of 5.0 mg/L will be achieved by limiting the effluent to a BOD of 25 mg/L maximum daily limit. The standard for VSS (as a narrative of no objectionable bottom deposits downstream) will be achieved by limiting the effluent to a 25 mg/L TSS maximum daily limit. A treatment plant upgrade will be needed to achieve the necessary permit limits. As stated in the permit, the final effluent limits shall become effective three years from the date of permit issuance (i.e., effective on April 13, 2010).

The permit for the Northwest Lagoon retains the previous permit's limits for BOD and TSS. However, it also includes a compliance schedule for the city to cease discharges from, and submit a closure plan for, this lagoon within four years of permit issuance, and eliminate the lagoon in accordance with the closure plan within five years of permit issuance.

The Missouri State Operating Permits for both Stover Lagoons are enclosed. The new limits will go into effect when the compliance schedules are completed. When the Southwest Lagoon meets the new limits and the Northwest Lagoon ceases discharging, water quality standards should be achieved in Gabriel Creek. Ambient stream monitoring by the department will be scheduled after the new limits go into effect, to determine if the impairment has been eliminated. In addition, to ensure permit limits are being achieved, the permit includes quarterly instream monitoring 100 yards downstream of the outfall for DO, temperature, pH and ammonia. A reopener clause was included in both permits to allow for stricter limits if monitoring shows violations of Missouri's water quality standards.

With this letter, the department submits the City of Stover's permits to EPA for concurrence that they will serve as a permit in lieu of a TMDL on Gabriel Creek. We appreciate EPA taking prompt action on this submittal. If you have any questions, please contact Ms. Donna Menown at (573) 526-1595, via e-mail at donna.menown@dnr.mo.gov, or by mail at Missouri Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, Missouri 65102.

Sincerely,

WATER PROTECTION PROGRAM

(Signed by R. Morrison for Edward Galbraith)

Edward Galbraith
Director

EG:dml

Enclosures

c: Mr. Daniel R. Schuette, Director, DEQ
Mr. Earl Pabst, Deputy Director, DEQ
Missouri Clean Water Commission