

Corresp



Northern Colorado Water Conservancy District

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January 16, 2009

Mr. Chandler Peter
U.S. Army Corps of Engineers
9307 South Wadsworth Boulevard
Littleton, CO 80128-6901

Dear Mr. Peter:

RE: NISP Comments - Technical Analyses of Total Organic Carbon (TOC), Trichloroethene (TCE), and Wastewater Treatment Plant Impacts

The U. S. Army Corps of Engineers (Corps) has received a number of comments on the Draft Environmental Impact Statement (DEIS) for the Northern Integrated Supply Project from the City of Fort Collins, the Environmental Protection Agency (EPA), and the Colorado Department of Public Health and Environment (CDPHE), that relate specifically to the City of Fort Collins' drinking water quality and wastewater treatment concerns.

In an effort to better understand these issues and comments, the Northern Integrated Supply Project (NISP) participants engaged the services of scientific and technical experts to review and analyze those comments. This team of experts has many years of demonstrated and specialized expertise and experience in drinking water and wastewater treatment technical processes and regulatory compliance. Their analyses of the issues are included with this letter.

The DEIS comments are summarized in this letter, along with key conclusions from NISP participants' team of technical and scientific experts.

Total Organic Carbon

Comments:

- During spring runoff, seasonally higher levels of Total Organic Carbon (TOC) would be diverted from the Poudre River into the Glade Reservoir forebay and then transported to Horsetooth Reservoir through the Glade-Horsetooth pipeline.
- Since the Glade-Horsetooth pipeline inlet to Horsetooth Reservoir would be located at the north end of the reservoir, this water would not fully mix with the rest of Horsetooth water and would find its way to the Soldier Canyon inlet, which is also near the north end of the reservoir.
- The Fort Collins water treatment facility could not treat the water and meet drinking water standards without investing in major infrastructure improvements and increasing their operational costs.

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- The City of Fort Collins would need to spend anywhere from \$50 to \$90 million for one-time plant improvements, as well as approximately \$3 million for annual operating expenses.

Technical Analysis:

- Although long-term, average TOC concentrations could range between 5 mg/l and 6 mg/l, it is likely that lower averages would result from physical, chemical, and biological processes during detention in Glade Reservoir.
- TOC concentrations in Horsetooth Reservoir might increase from the historical baseline value of 3.0 mg/l to somewhere between 3.07 mg/l and 3.16 mg/l.
- The City of Fort Collins has successfully developed and implemented a coagulation scheme in its water treatment operations for treatment of Poudre River water as high as 13 mg/l TOC.
- Treating blends of Poudre River and Horsetooth Reservoir waters (after receiving Glade Reservoir water) at the Fort Collins water treatment facility would likely result in only a marginal increase in optimal alum (coagulant) dosage, estimated in cost increases of less than \$3,500 per year.
- Installation of additional TOC treatment processes would not be necessary to meet all applicable state and federal drinking water standards using currently-available treatment processes and proven facility operating practices.

Summary:

- Any increase in TOC concentrations in Horsetooth Reservoir caused by introducing Glade water would very small.
- Fort Collins' own research and studies indicate that its treatment plant can successfully treat water that has much higher TOC concentrations.
- Improvements of \$50 to \$90 million would not be required, nor would \$3 million for annual operating costs.

Trichloroethene

Comments:

- Groundwater contaminated with Trichloroethene (TCE) would co-mingle with Glade Reservoir forebay waters.
- Since the Glade Reservoir forebay water would be delivered to Horsetooth Reservoir, the Fort Collins water treatment facility would have to treat TCE-contaminated water.
- Glade Reservoir would cause the migration of TCE-contaminated water to the Poudre River.

Technical Analysis:

- Although it is difficult to project if NISP operations will affect the TCE plume migration, if any contaminated groundwater were to flow into the Glade Reservoir forebay, the TCE concentration in the forebay, after blending with diverted Poudre River water in the forebay, would be nearly two orders of magnitude (100 times) less than the drinking water maximum contaminant level. After mixing with Horsetooth Reservoir water, the TCE concentration would be less than the method detection limits (undetectable).
- Since TCE treatment is relatively simple and straight-forward, a drain system to collect and convey the contaminated groundwater for treatment could easily be constructed, if needed.

Summary:

- The concentrations of TCE in the groundwater are so low that even without any collection and treatment system, TCE concentrations in Glade or Horsetooth Reservoirs would be undetectable.

Wastewater Treatment

Comments:

- Lower flows in the Poudre River would result in more restrictive wastewater treatment plant discharge limitations because of less dilution capability of the river.
- Major improvements would be needed at the wastewater reclamation facilities to treat the wastewater to a greater degree and discharge higher quality effluent. These improvements will cost the City of Fort Collins \$75 to \$125 million.
- Annual operation costs required to obtain higher levels of treatment would be significant.

Technical Analysis:

- Wastewater treatment plant discharge requirements are based on CDPHE, Water Quality Control Commission, regulatory in-stream low flows. Due to the junior priority of NISP water rights, these regulatory low flows will not be affected.
- Since the Poudre River is an "effluent dominated stream," Fort Collins must essentially meet stream standards at the point of discharge regardless of in-stream flow levels.
- Potential future ammonia limits will not be dependent on the quantity of flow in the river.
- The Drake Wastewater Treatment Facility does not discharge to the Poudre River, but rather to the Fossil Creek Reservoir Inlet Canal.

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Summary:

- NISP will have no impact on existing or future infrastructure or operating requirements for the City of Fort Collins' wastewater treatment operations.
- Future potential water quality-based effluent limits for nutrients (ammonia) may require upgrades to the wastewater treatment plants. These upgrades will be required with or without NISP.

This technical information is being provided as we proceed through the remaining phases of this EIS process. If you have questions please feel free to contact Mr. Carl Brouwer, Project Manager.

Sincerely,



Eric W. Wilkinson
General Manager

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Enclosure

cc: Carl Brouwer