

KANSAS GEOLOGICAL SURVEY

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Proposed Project for Application to the Kansas Department of Health and Environment for the Kansas Water Pollution Control Revolving Loan Fund and to the Kansas Department of Commerce for a Community Development Block Grant

Applicant: City of Bird City
Wastewater Treatment Facility Improvements

Contact Person: Chris A. Miller, P.E.
Address: Miller & Associates, Consulting Engineers, P.C.
109 East 2nd
McCook, NE 69001-3719

Sent to the Kansas Geological Survey for environmental review.

Agency Review Comments:

Although the new lagoon proposed for the wastewater treatment is classified as full retention (non-discharging), the wastewater that is continually pumped into the lagoon has to go somewhere, otherwise the lagoon would eventually fill and water would flow out. Much of the water leaves by evaporation but a significant amount would be expected to seep below the lagoon into the underlying aquifer, even though the lagoon will meet the maximum leakage requirements of the Kansas Department of Health and Environment. Even a tenth of an inch per day would equate to a ground-water recharge value of about three feet per year, which could be nearly 100 times the regional recharge rate of the High Plains aquifer in that area. If the water in the lagoon that will have a very small amount of leakage is to be treated before entering the lagoon, then there should be no concern unless the treated water contains dissolved constituents, such as nitrate, that are higher in concentration than drinking water standards. In this latter case, and if a lagoon with untreated wastewater will have a small amount of leakage, then the location of the City water-supply wells and domestic wells in the area relative to ground-water flow directions from under the lagoon site could be of concern in terms of potential pollution in the long-term.

In general, the long-term benefits of the wastewater treatment facility improvements should offset any short-term adverse environmental impacts during construction.

Recommended Action:

- ☒ Clearance of project should be granted
- ☐ Clearance of project should not be granted
- ☐ Clearance of project should be delayed until the issues or questions have been clarified
- ☐ Clearance of project should not be delayed, but the applicant (in the application) should address or clarify the questions or concerns indicated above

Donald Whittemore
Reviewer's Name

Geohydrology Section, Kansas Geological Survey
Division/Agency

9/28/06
Date


Reviewer's Signature

The above discussion represents our best assessment based on the information that the Kansas Geological Survey has about this locality and/or proposed project at the time of this writing. Other geologic conditions, not discussed herein, or for which the Kansas Geological Survey has no knowledge, may affect the viability or safe operation of this facility or property. The information provided in this letter is from regional or county-wide studies and should not be used as a substitute for detailed site characterization by a licensed geologist or engineer. It is the responsibility of the applicant to provide any required site characterizations.

August 25, 2006
McCook, Nebraska



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www.miller-engineers.com

TO: Enclosed Mailing List for Consultation Correspondence

Re: Wastewater Treatment Facility (WWTF) Improvements
Bird City, Kansas
Project No. 289-D1-001

Dear Sir or Madam:

The City of Bird City, Kansas is proposing to construct a new Wastewater Treatment Facility (WWTF) lagoon and facility improvements. The purpose of this letter is to request your review and response regarding any environmental impacts that your agency may identify for this proposed project pursuant to federal laws and regulations.

Enclosed is a map of the proposed WWTF lagoon site located in the NW $\frac{1}{4}$ Section 6, Township 4 South, Range 37 West of the 6th PM; and the E $\frac{1}{2}$ NE $\frac{1}{4}$ Section 1, Township 4 South, Range 38 West of the 6th PM in Cheyenne County, Kansas. The existing WWTF is located inside the proposed lagoon area.

The proposed design will consist of the construction of a new full retention (non-discharging) lagoon facility, and relocation of the existing forcemain to connect into the new lagoon. The preliminary design used a flow rate of 45,000 gallons per day (gpd); 93.4 gallons per capita per day (gpcd), for a population of 482 people. The total wetted acreage required for the proposed lagoon is 15.6 acres. The City is actively pursuing purchase of the required property for the proposed lagoon and the required easements for forcemain installation to the proposed facility. These improvements will conform to Kansas Department of Health and Environment (KDHE) regulations.

The proposed funding for this project will be from Community Development Block Grants, CDBG and the Kansas Department of Health and Environment – Kansas Water Pollution Control Revolving Loan Fund, KWPCRLF. Please provide your written comments within 30 days, so the City can proceed with the project and completion of the environmental assessment. If you have any questions or require additional information please feel free to contact our office.

Sincerely yours,
MILLER & ASSOCIATES
CONSULTING ENGINEERS, P.C.

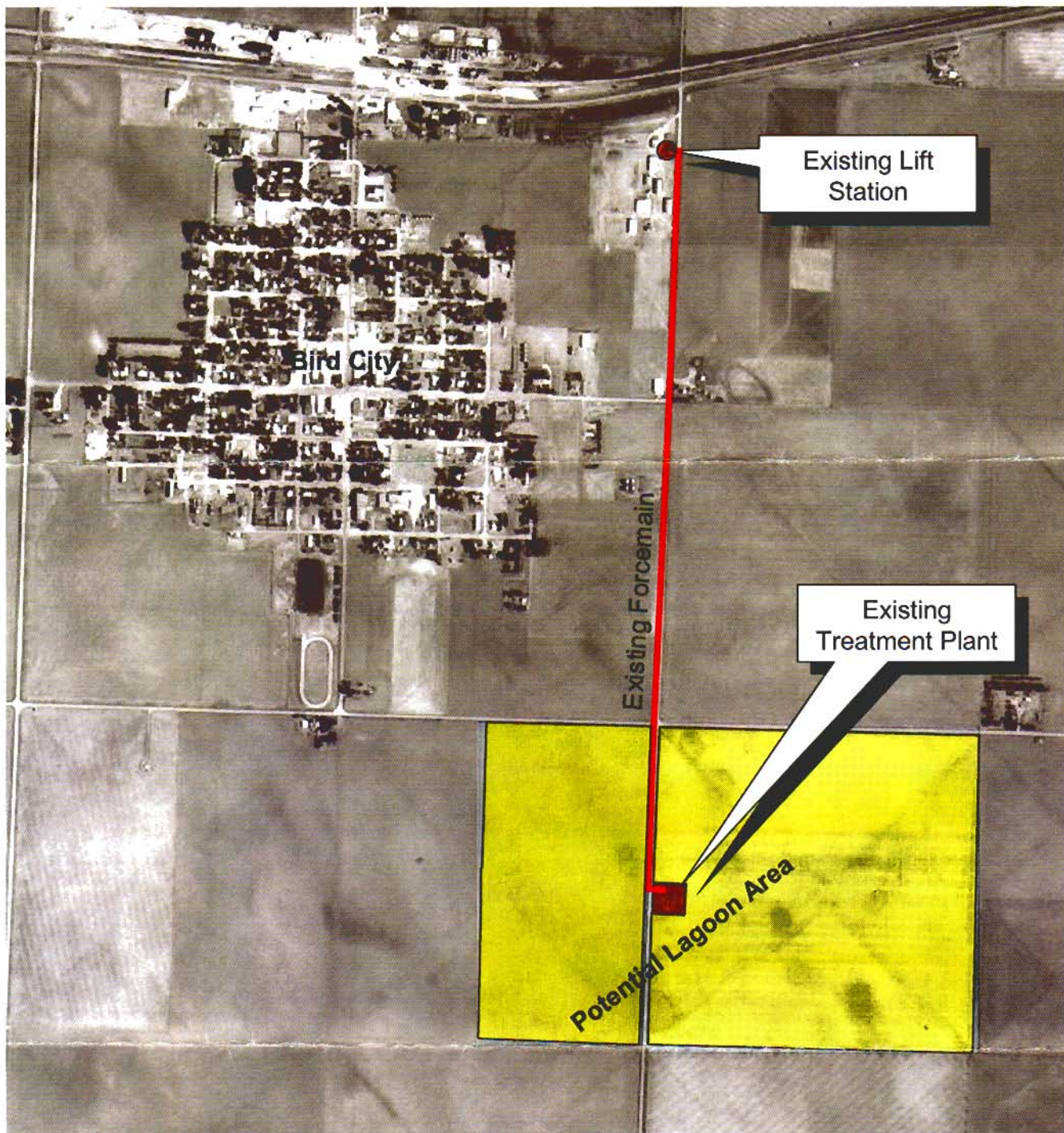
A handwritten signature in black ink, appearing to read 'Chris A. Miller', is written over the typed name.

Chris A. Miller, P. E.

CAM/Imm

Enclosure

cc: City of Bird City, w/ enclosure
Amy Griffey, NW Kansas Planning & Development
Rod Geisler, KDHE



Potential Expansion Area
Figure 1.2
Bird City, Kansas