KU KANSAS GEOLOGICAL SURVEY
The University of Kansas

Geohydrology Section
1930 Constant Avenue
Lawrence, KS 66047
July 28, 2009

Mr. Steven Hanson
Business Finance Officer
Northwest Kansas Planning and Development Commission
319 N. Pomeroy
Box, 248
Hill City, Kansas 67642-0248

Dear Mr. Hanson,

I am writing in response to a request to perform an environmental review the City of Oakley sewage treatment plant upgrades. I spoke with Mr. Lawson of Bucher, Willis & Ratliff Corporation concerning some questions I had.

Mr. Lawson informed me that the city has chosen to construct a new continuously discharging facultative lagoon system with the ability to deliver treated water for land application to the city golf course. According to the NRCS data site, Keith silt loam and Ulysses silt loam are the dominant soils in the area. These soils are of loess origin and may have macropore or fracture development which could permit faster movement of treated waste water to the ground water. Depth to ground water varies from 98 to 135 ft in the township. It might be advisable to have the golf course evaluated by soil coring or permeability testing to determine if macropore flow might be an issue in the future.

In some areas of the state where land application of waste water is used as a tertiary treatment process increased nitrate-N in the ground water was observed. Other studies suggest that waste water be tested for pharmaceuticals, herbicides, nutrients, and salts to try to prevent contamination of fresh water by reclaimed water. Best management practices exist that would slow down or prevent potential contamination issues. Discussions with KDHE, the Kansas Agricultural Extension Service at Kansas State University, and the National Resource Conservation Service might assist in determining if these issues need to be considered.

Overall I think the development of the new system is needed and appears well thought out. There does not appear to be a nutrient issue with the current discharging system. The new system should alleviate the ammonia problem. The issues I have raised concern the use of the reclaimed water for use on the golf course. If some additional testing is done to assure that the treated water is suitable for irrigation and is unlikely to cause harm to fish, macroinvertebrates, amphibians and other wildlife because of organic chemicals I see no problem with the project moving forward.

The above comments are based on regional geologic conditions and limited information available to the KGS at the time of writing and cannot be used in substitute for a detailed site characterization. Other geologic conditions, not discussed here, or for which the KGS has no knowledge, may affect the viability or safe operation of this facility or property. Geotechnical engineering and design are outside the purview of the KGS. It is the responsibility of the applicant to produce any detailed site characterizations, geotechnical or environmental testing, or design by a licensed professional geologist or engineer to complete the project.

Sincerely,

Margaret A. Townsend

Margaret A. Townsend
Hydrogeologist

NORTHWEST KANSAS PLANNING AND DEVELOPMENT COMMISSION
ENVIRONMENTAL ASSESSMENT REVIEW

REQUEST FOR ACTION ON GRANT REVIEW DATE: July 21, 2009

Agency Name:
Kansas Geological Survey
University of Kansas
1930 Constant Avenue – Campus West
Lawrence KS 66047-3726

Impact Categories:
Environmental Resources

Applicant's Name and Address:
City of Oakley
209 Hudson
Oakley, KS 67748

Project Title:
Sewer System Improvements

Project Number:
Project #C20-1783-01 (KDHE)

Return No Later Than:
August 17, 2009

Return To: Steve Hanson
Business Finance Officer
Northwest Kansas Planning & Development Commission
P.O. Box 248
Hill City, KS 67642

Northwest Kansas Planning and Development Commission have submitted the enclosed proposal for an Environmental Assessment Review. Your review of this proposal as it affects regional or local interest will be appreciated. Your appropriate comments concerning the proposal should be submitted to Northwest Kansas Planning and Development Commission no later than the date specified above.

Comments filed on a proposal may include: (1) The extent to which the project is consistent with or contributes to the fulfillment of your agency planning within the state, region or locality; (2) How the proposal relates to state, regional or local objectives; and (3) The effect of the proposal on your agency's activities.

_____ No Impact Anticipated

_____ Potentially Adverse— Requires Documentation Only

_____ Potentially Adverse— Requires More Study

__✓__ Potentially Beneficial

__✓__ Requires Project Modification

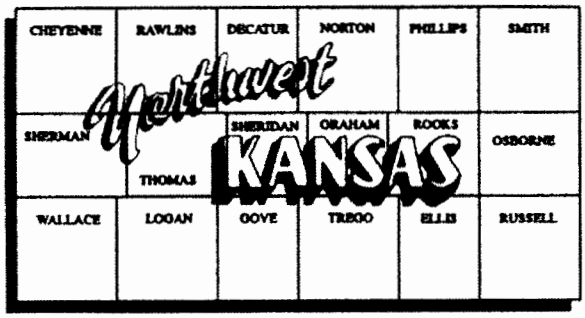
_____ Needs Mitigation

COMMENTS:
See attached letter

Margaret A. Townsend Research Assoc.
Reviewer's Signature and Title

Margaret A. Townsend
Printed Name

7-28-09
Date



NORTHWEST KANSAS PLANNING and DEVELOPMENT COMMISSION
319 N. Pomeroy
Box 248
Hill City, Kansas 67642-0248
(785) 421-2151 Fax (785) 421-3496

July 17, 2009

Kansas Geological Survey
University of Kansas
1930 Constant Avenue – Campus West
Lawrence KS 66047-3726

RE: City of Oakley Project # C20-1783-01

Dear Sirs,

City of Oakley, Oakley, Kansas, is applying for Revolving Loan Funds through the Kansas Department of Health and Environment, Bureau of Water to acquire land, construction of new wastewater treatment continuous discharging facultative four cell lagoon system, including a new pump station and force main; plus applying additional funds to construct one mile sewer line to the existing golf course which will utilize the effluent water on the golf course. Additionally, the City of Oakley, Oakley, Kansas is applying for 2010Community Development Block Grant (CDBG) funds.

The City of Oakley is confronted with the problem of their existing wastewater treatment plant not being capable of meeting the current NPDES permit requirements, resulting in the plant frequently being out of compliance. Primarily, the compliance problems stem from not meeting permit limits for BOD and TSS. However, the existing facility is also not equipped to treat for Ammonia or disinfect the effluent leaving the plant.

Our office is conducting an environmental assessment of the above referenced project and request your agency review the project and its potential environmental impact. Enclosed is a copy of the scope of work, estimated project costs, and project location map for your reference.

An Environmental Assessment Review form is attached for your convenience. The form indicates specific impact categories you are to consider depending upon your agency's jurisdiction. Our office must have documentation in the Environmental Review Record from your agency whether it is in letter form or on the attached review form even if your office does not feel the proposed project will have an impact on the human and natural environment. Please elaborate in the comments section why you indicated the specific response.

Your prompt consideration of this request will be greatly appreciated. Please return the review form to my attention by August 21, 2009, as indicated on the Environmental Assessment Review form. Should you have any questions or need additional information, please email my office at nwkpdc@ruraltel.net or contact me at (785) 421-2151 at your earliest convenience.

Sincerely,

Steven E. Hanson
Business Finance Officer
Enclosures
CC: Rose Wessell, Oakley City Clerk

COPY

BWR | Right in the Center

July 14, 2009

Mr. Rod Geisler, P.E.
Section Chief
Kansas Department of Health & Environment
Bureau of Water
1000 SW Jackson, Suite 420
Topeka, KS 66612 - 1367

Re: City of Oakley, Kansas
Wastewater Treatment Facility Improvements
BWR Project No. 2009-0172.010

Dear Mr. Geisler:

Please find enclosed one copy of the "Preliminary Engineering Report for the City of Oakley, Kansas, Wastewater Treatment Facility".

If you have any questions or need additional information, please do not hesitate to contact us.

Sincerely,

BUCHER, WILLIS & RATLIFF CORPORATION

Chad Lawson, P.E.
Project Manager
Environmental Engineering

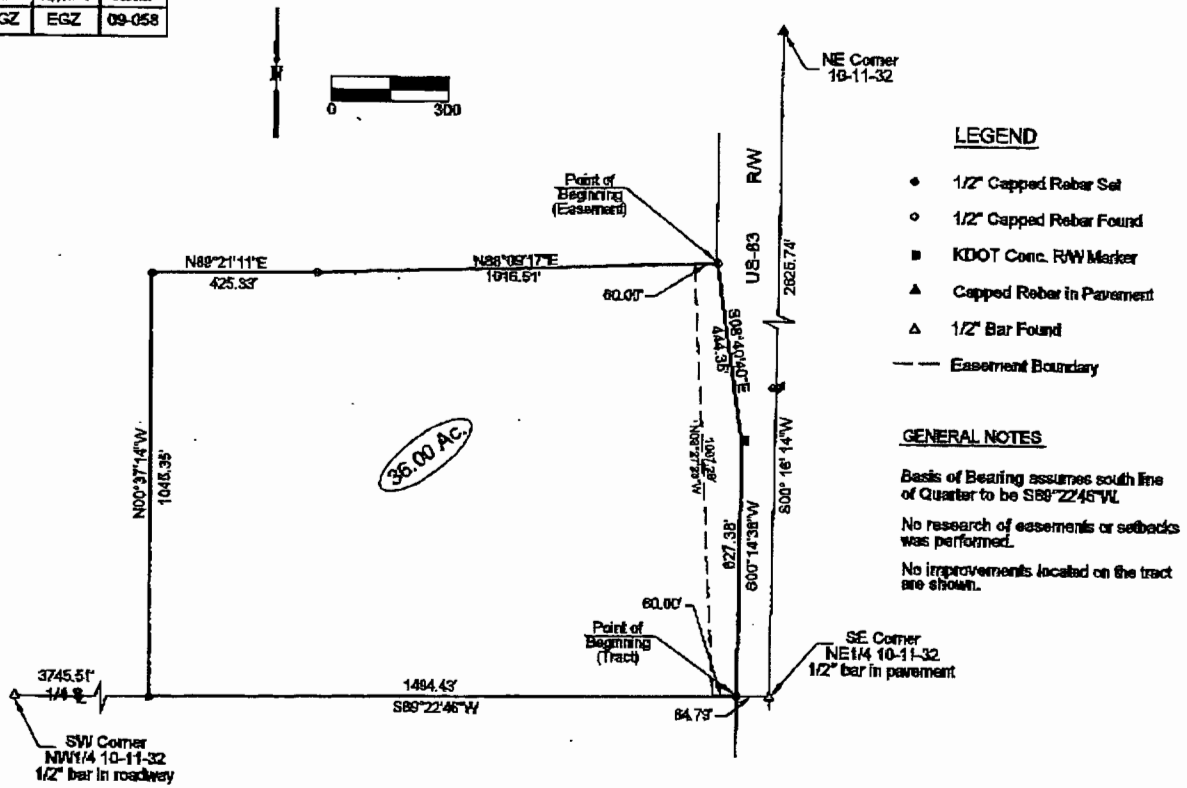
CRL/crl/ds

Enclosure

Survey of a Tract of Land

CITY OF OAKLEY TRACT

ZERR ENGINEERING Oakley, Kansas 67748 Ph. 785-672-3552		
Drawn	Approved	Job No.
EGZ	EGZ	09-058



LEGEND

- ● 1/2" Capped Rebar Set
- ○ 1/2" Capped Rebar Found
- ■ KDOT Conc. R/W Marker
- ▲ Capped Rebar in Pavement
- △ 1/2" Bar Found
- —— Easement Boundary

GENERAL NOTES

Basis of Bearing assumes south line of Quarter to be S89°22'46"W.

No research of easements or setbacks was performed.

No improvements located on the tract are shown.

STATE OF KANSAS, LOGAN COUNTY, SS.
This instrument was filed for record this
_____ day of _____ A.D., 20_____ at
_____ o'clock _____ M. and duly recorded in
Book_____ on Page _____.
Fee_____

_____
REGISTER OF DEEDS

I Hereby Certify that the above survey was made on the XXX day of July, 2009, under my direct supervision and is correct to the best of my knowledge.

_____
Elmer G. Zerr
Kansas License No. LS-1001

Reviewed and approved in accordance with K.S.A. 58-2001 thru 58-2005.

_____

LEGAL DESCRIPTION

City of Oakley Tract

A tract of land located in the Northeast Quarter (NE1/4) of Section Ten (S10), Township Eleven South (T11S), Range Thirty-two West (R32W) of the Sixth Principal Meridian (6th P.M.) in Logan County, Kansas, more particularly described as follows:

Commencing at the southeast corner of said Quarter, thence, on an assumed bearing of S89°22'46"W, along the south line of said Quarter, a distance of eighty-four and seventy-nine hundredths (84.79) feet to the point of beginning, said point of beginning being located along the west right-of-way boundary of Highway US-83.

From the point of beginning, thence S89°22'46"W, along said south line of said Quarter, for a distance of one thousand four hundred ninety-four and forty-three hundredths (1494.43) feet, thence N00°37'14"W for a distance of one thousand forty-five and thirty-five hundredths (1045.35) feet, thence N89°21'11"E for a distance of four hundred twenty-five and thirty-three hundredths (425.33) feet, thence N88°09'17"E for a distance of one thousand sixteen and fifty-one hundredths (1016.51) feet to the west right-of-way boundary of said Highway US-83, thence S08°40'40"E, along the west right-of-way boundary of said Highway US-83, for a distance of four hundred forty-four and thirty-five hundredths (444.35) feet, thence S00°14'38"W, along the west right-of-way boundary of said Highway US-83, for a distance of six hundred twenty-seven and thirty-eight hundredths (627.38) feet to the point of beginning, containing 36.00 acres, said tract shall be subject to a perpetual ingress-egress easement located along its east boundary more particularly described as follows:

Ingress-Egress Easement

Beginning at the northeast corner of said City of Oakley Tract, thence S08°40'40"E, along the west right-of-way boundary of Highway US-83, for a distance of four hundred forty-four and thirty-five hundredths (444.35) feet, thence S00°14'38"W, along said highway right-of-way, for a distance of six hundred twenty-seven and thirty-eight hundredths (627.38) feet, thence N89°22'46"W for a distance of sixty and no hundredths (60.00) feet, thence N03°27'23"W for a distance of one thousand sixty-seven and twenty-nine hundredths (1067.29) feet, thence N88°09'17"E for a distance of sixty and no hundredths (60.00) feet to the point of beginning, containing 1.97 acres.

COPY

STATE OF KANSAS
WATER/SEWER PROFILE
FOR STATE AND/OR FEDERAL ASSISTANCE

Four (4) copies of this form must be submitted along with the Engineering Report for water.
Three (3) copies of this form must be submitted along with the Engineering Report for sewer.

City/County Involved: City of Oakley Water/Sewer District: Sewer
Representative/Title: Jerry Robben/Mayor Brandon Buchanan/ City Administrator
Address: 209 Hudson Avenue
City/Zip Code: Oakley, Kansas 67748
Telephone/Fax: (785) 671-3611 E-mail address: oakleyca@st-tel.net
County: Logan
Grant Writer: Northwest Kansas Planning & Development Commission
Address: PO Box 248
City/Zip Code: Hill City 67642-0248
Telephone/Fax: 785-421-2151/785-421-3496 E-mail address: nwkpdc@ruraltel.net
Engineering Firm: Bucher, Willis & Ratliff Corporation
Engineering Consultant: Chad Lawson, P.E.
Address: 2335 E. Crawford Street
City/Zip Code: Salina, Kansas 67401
Telephone/Fax: 785-827-3603/785-827-3029 E-mail address: clawson@bwrcorp.com

Description of Need: (Be specific regarding general service area description, i.e., townships served, etc.)
The City of Oakley is confronted with the problem of their existing wastewater treatment plant not being capable of meeting current NPDES permit requirements, resulting in the plant frequently being out of compliance. Primarily, the compliance problems stem from not meeting permit limits for BOD and TSS. However, the plant is also not equipped to treat for Ammonia or disinfect the effluent leaving the plant. Consequently, the City must take action to evaluate and identify the options available to them in order to comply with NPDES requirements. The existing treatment plant is an attached growth, trickling filter plant with a single-stage trickling filter, clarification (primary and final clarifier), as well as anaerobic digestion with land application to dispose of the sludge waste. The plant was constructed in the late 1940's or early 1950's and has been upgraded in 1997 and 2000 with the addition of a new influent grinder and improvements to the trickling filter and clarifiers. The plant currently serves the entire population for the community of Oakley which is comprised of approximately 1,900 residents.

In general, the age of the facility, physical condition of the components, and variations in the influent loading, have reduced the facilities ability to meet the current discharge permit requirements. As the existing facility ages further more equipment will require increased maintenance or replacement in order to keep the facility operational. Additionally, the type of treatment process (trickling filter) is not effective at consistently achieving the levels of treatment required by current discharge permits issued at other facilities throughout the state.

A number of alternatives are available to the City of Oakley to address this problem. A complete facility plan was completed to evaluate the overall plant condition and the specific options available to the City for bringing their treatment process into compliance. Various alternatives were identified in this study to address the compliance issues.

The City opted to design and construct a new continuously discharging faculative lagoon system.

The new treatment facility will be designed to treat the entire waste from the City of Oakley through the year 2029, with a respective projected population equivlent of 1,900.

Alternatives Considered to Date:

Alternative 1: Construct a new extended air activated sludge system to replace the existing trickling filter plant. This would include new headworks, aerobic digestion, sludge dewatering, and UV system.

Alternative 2: Construct a new continuously discharging facultative lagoon system. This option would also include a new pump station and force main to deliver the waste to the new lagoon location. The lagoon would be a three or four cell system utilizing 21 surface acres of area.

Alternative 3: Construct a new total retention facultative lagoon system. This option would also include a new pump station and force main to deliver the waste to the new lagoon location. The lagoon would be a two cell (minimum) system utilizing 32 surface acres of area.

Alternative 4: Construct a new facultative lagoon system with land application. Again, this option would also include a new pump station and force main to deliver the waste to the new lagoon location and a new pump station and force main to deliver the treated water to the land application location.

If invited to a KIAC meeting, entity must provide information on outstanding debt for applicable facility (amount, interest rate, annual obligation, term lender, etc.).

COPY

Check which funding programs you are concerning:

KDOC&H – CDBG	X
USDA – RD	X
KDHE – SRF	X
Other	

Complete as applicable to project:

Sewer rates: $10.50 (Resid) /month (flat rate) or
$12.50 (Com) /month minimum plus
$0.85 /1000 gallons water used next 10,000 gals plus
$0.50 /1000 gals water used in excess of 15,000 gals.

Water rates: $ for first Gallons
$ for next Gallons
$ for next Gallons

# of Water Connections:		# of Sewer Connections:	997
Residential		Residential	832
Non-residential		Non-residential	165

Total monthly water consumption
Average monthly water consumption/household
Average monthly sewer bill $ 12.75
Average monthly water bill $

Circle Applicable Project Type:

Drinking Water
(Wastewater)

COST CLASSIFICATION	ESTIMATED TOTAL COST
1. Acquisition	$ 72,000
2. Construction	$ 2,821,500
3. Architectural/Engineering fees	$ 201,952
4. Inspection	$ 105,800
5. Legal Expenses	$
6. Initial O & M	$
7. Miscellaneous (explain)	$
8. Administrative Expenses	$ 20,000
9. SUBTOTAL	$ 3,221,252
10. Less local cash	$
11. TOTAL LOAN/GRANT NEEDED	$3,221,252

The undersigned representative of the applicant certifies that the information contained herein and the statement, exhibits, and reports are true, correct and complete to the best of my knowledge and belief.

Applicant Signature: Date: 7/13/09

Engineer Signature: Date: 7/14/09

Google maps Address

Google maps Address

Soil Map—Logan County, Kansas
(Oakley Sewage treatment plant)

USDA Natural Resources Conservation Service

Web Soil Survey
National Cooperative Soil Survey

W.L 98-135 ft

7/27/2009
Page 1 of 3

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Units

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features
- Gully
- Short Steep Slope
- Other

Political Features
- Cities
- PLSS Township and Range
- PLSS Section

Water Features
- Oceans
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:3,470 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Logan County, Kansas
Survey Area Data: Version 6, Nov 13, 2008

Date(s) aerial images were photographed: 6/18/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Logan County, Kansas (KS109)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
1620	Keith silt loam, 1 to 3 percent slopes	20.2	40.8%
1859	Ulysses silt loam, 3 to 6 percent slopes	1.5	3.1%
1860	Ulysses silt loam, 6 to 15 percent slopes	27.8	56.2%
Totals for Area of Interest		**49.5**	**100.0%**