

KANSAS GEOLOGICAL SURVEY

The University of Kansas
1930 Constant Ave
Lawrence KS 66047-3726
phone 785-864-3965
fax 785-864-5317
www.kgs.ku.edu

September 18, 2006

Mr. Thayer L. Smith
Kirkham Michael
217 North Douglas
P. O. Box 4
Ellsworth, KS 67439

**RE: Russell County Landfill
KM#0405805**

Dear Mr. Smith:

I have received your request for comment by the Kansas Geological Survey (KGS) on a permit modification for an existing construction and demolition landfill in Russell County. The landfill expansion is located in NW¼ S2 T13S R14W, north of Russell, Kansas.

I examined the USGS Russell 7½-minute topographic map, a 2002 orthophotograph, a geology report for Russell County (Arbogast and Johnson, 1996, KGS Technical Series 7), a geologic map of Russell County (Arbogast and Johnson, 1996, KGS Map M-37), and water well data from the KGS Data Library. The geologic map indicates that the expansion of the landfill will be in Cretaceous Dakota Formation and possibly extending into Cretaceous Graneros Shale. The Dakota Formation consists of interbedded sandstones and shales. Some of the sandstone beds are aquifers. The Graneros Shale is gray shale with some thin siltstone and sandstone units. Water well completion records indicate that a variety of materials have been encountered in the NW¼ of section 2 including sands and sandstone that could be potential aquifers. One domestic well is listed in the water well completion data in the NE¼ of section 2. An unpublished MS thesis (see reference) contains information on possible leaching from a Russell County landfill at this site.

- The Kansas Geological Survey's main concern is the potential ground-water contamination at this site.
- The Kansas Geological Survey has no knowledge of landslide, karst, or poor ground conditions that might affect this application.

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 countywide 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.

Reference:

Anderson, J. D., 1989. Ground water investigations of possible leaching from sanitary landfill disposal sites: Ellis and Russell counties, Kansas. Unpublished M. S. Thesis, Department of Geosciences, Fort Hays State University. 52 p.

If you have any questions regarding these issues, please contact Gregory Ohlmacher at (785)-864-2194 or ohlmac@kgs.ku.edu.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Ohlmacher', with a long horizontal flourish extending to the right.

Gregory C. Ohlmacher, P. G.
Engineering Geologist

August 24, 2006

RE: Russell County Landfill
KM# 0405805

Kansas Geological Survey
1930 Constant Avenue
Lawrence, Kansas 66047-3726

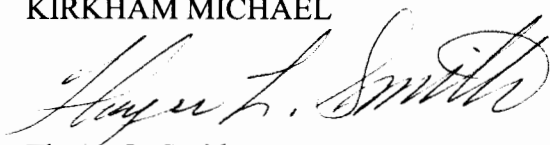
Dear Kansas Geological Survey staff:

We have been retained by Russell County to prepare an application for a landfill permit modification. One of the requirements is to check with several agencies to determine if they have any information about the site modification.

The proposed construction & demolition landfill modification is located on the NW quarter of Section 2, T13S, R14W in Russell County. A location map and site layout plan is attached. We request a response from your agency indicating any issues you may be aware of regarding this proposed land use.

Thank you for your consideration in this matter. If you have any questions about this request, please contact me at 785-472-3163 or by e-mail at tsmith@kirkham.com.

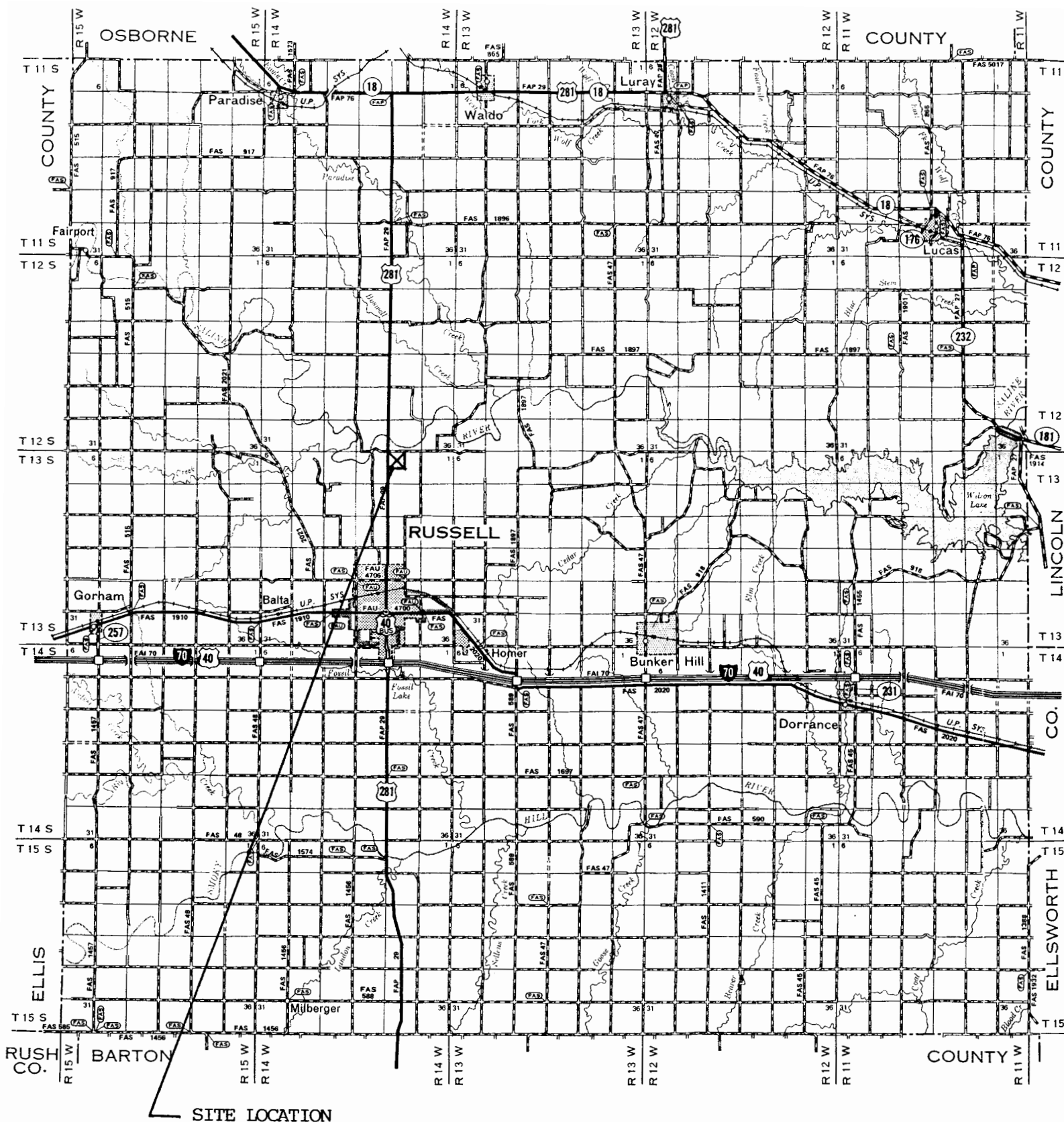
Sincerely,
KIRKHAM MICHAEL



Thayer L. Smith
Vice President

TLS:srg

cc: Mike Selm, KDHE, BWM
Alan Scheuerman, Russell Co.



SITE LOCATION

LEGEND

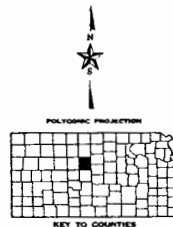
ROADS AND ROADWAY FEATURES

PRIMITIVE ROAD	-----
UNIMPROVED ROAD	-----
GRADED AND DRAINED ROAD	-----
SOIL SURFACED ROAD	-----
GRAVEL OR STONE ROAD--	-----
NOT GRADED OR DRAINED	-----
GRAVEL OR STONE ROAD--	-----
GRADED AND DRAINED	-----
GRAVEL OR STONE ROAD WITH	-----
STABILIZED SURFACE	-----
BITUMINOUS ROAD--LOW TYPE	-----
PAVED ROAD	=====
DIVIDED HIGHWAY	=====
HIGHWAY WITH FULL CONTROL OF	=====
ACCESS AND INTERCHANGE	=====

ROAD SYSTEM DESIGNATION

FEDERAL AID INTERSTATE HIGHWAY SYSTEM	-----
FEDERAL AID PRIMARY HIGHWAY SYSTEM	-----
FEDERAL AID SECONDARY HIGHWAY SYSTEM	-----
INTERSTATE NUMBERED HIGHWAY	-----
U.S. NUMBERED HIGHWAY	-----
STATE HIGHWAY SYSTEM OR	-----
STATE NUMBERED HIGHWAY	-----
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MARKED ROUTE	-----

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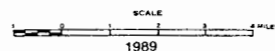


FA SYSTEM REVISED TO OCT. 30, 1991

LOCATION MAP

GENERAL HIGHWAY MAP RUSSELL COUNTY KANSAS

PREPARED BY THE
KANSAS DEPARTMENT OF TRANSPORTATION
BUREAU OF TRANSPORTATION PLANNING
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION



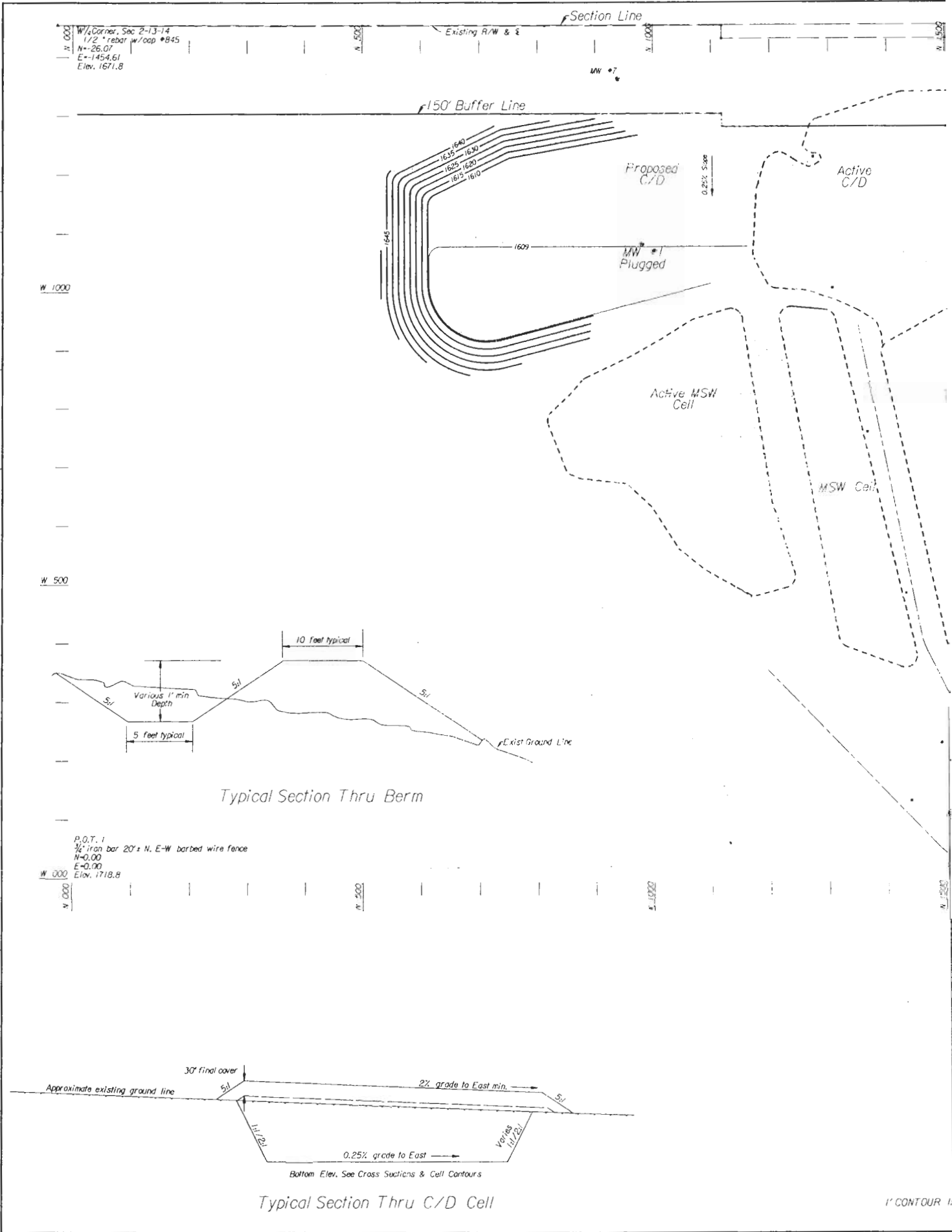
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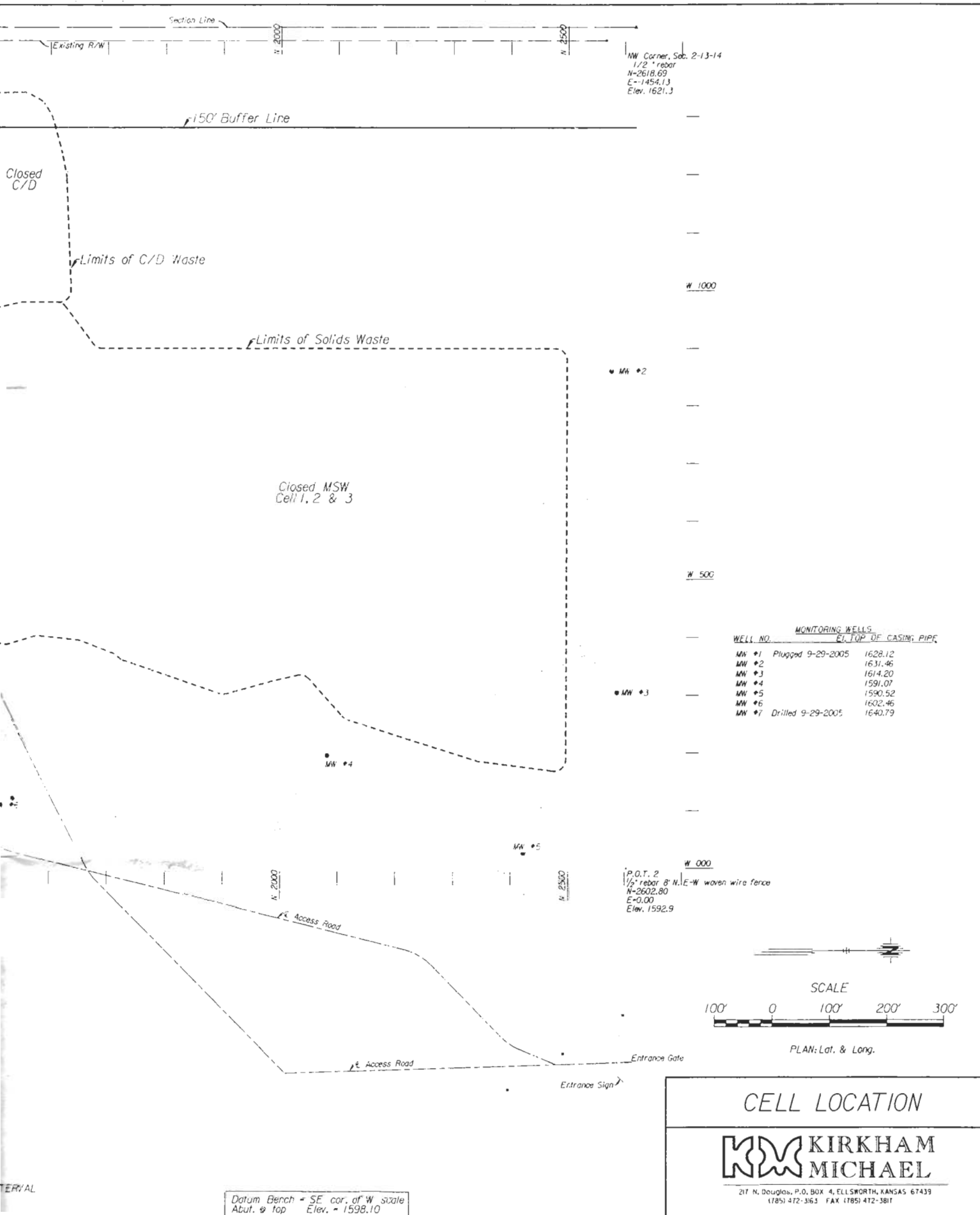
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REFERENCES CHECKED	

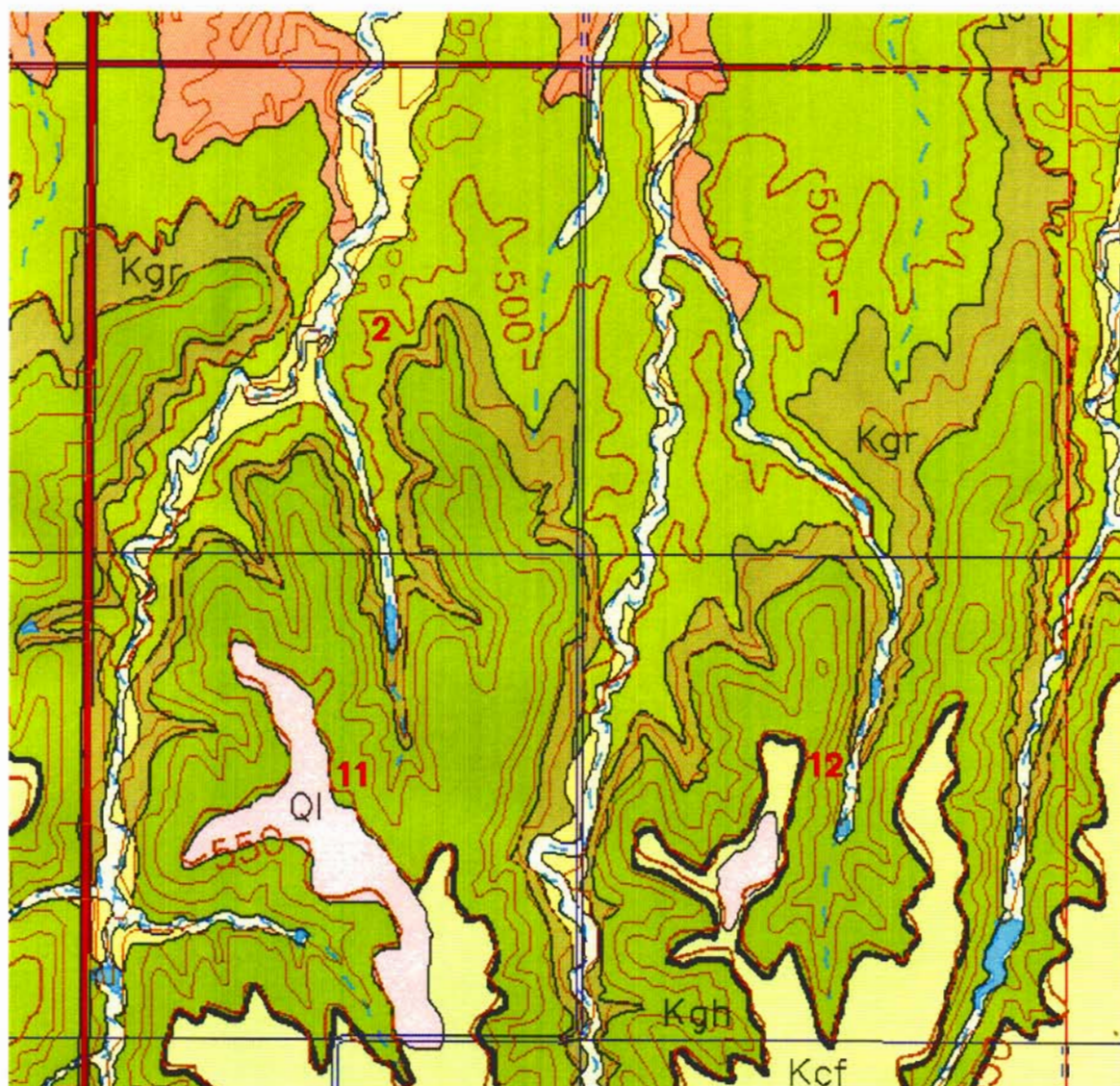
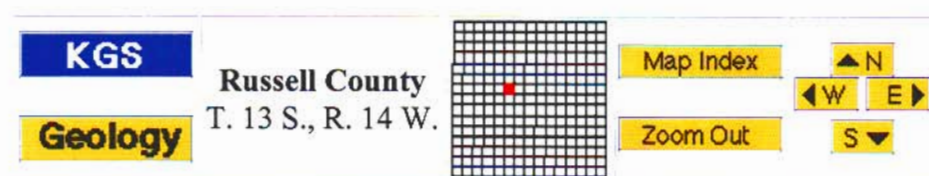
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Quaternary		Tertiary		Cretaceous	
Qal	Alluvium--floodplain & low-terrace deposits	To	Ogallala Formation	Kns	Smoky Hill Chalk Mbr
Qt	Fluvial--high-terrace deposits			Knf	Fort Hays Ls Mbr
Qt1	Fluvial--low-terrace deposits in the Smoky Hill River valley			Kcb	Blue Hill Sh Mbr
Qt2	Fluvial--high-terrace deposits in the Smoky Hill River valley			Kcf	Fairport Chalk Mbr
Ql	Loess				Fencepost Ls
				Kgh	Greenhorn Ls
Qg	Fluvial--valley side-wall deposits			Kgr	Graneros Sh
				Kd	Dakota Formation

*Downloaded by
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