

KANSAS GEOLOGICAL SURVEY

1930 Constant Ave., Campus West
The University of Kansas
Lawrence, Kansas 66047-3726
phone 785-864-3965
fax 785-864-5317

June 22, 2005

Mike Engler, L.A.
Bartlett & West Engineers
1200 SW Executive Drive
Topeka, KS 66615-3850

RE: Emerson Clean Fill Landfill
Bartlett and West Project No.: 14791.000

Dear Mr. Engler:

I have received your request for comment by the Kansas Geological Survey (KGS) on the application for a landfill permit for clean fill only. The fill will be rock, concrete, asphalt, rubble, soil, and other materials. The proposed landfill will be located on 6.7 acres in the southwest quarter of Section 4, T13S R16E.

I examined the Wakarusa 7½ minute topographic quadrangle, a geologic report and map of Shawnee County (Johnson, Adkison, and Wagner, 1967, USGS Bulletin 1215; and Johnson, Wagner, and Adkison, 2002, KGS Map M-95), and a 2002 orthophotograph of the landfill site. As stated in your letter, the landfill site is an abandoned limestone quarry. The unit quarried is the Pennsylvanian Topeka Limestone. Fracturing may be encountered in both the walls and floor of the quarry within the Topeka Limestone and underlying Calhoun Shale. The Calhoun Shale is dominantly siltstone and sandstone with thin clay shales. The Calhoun Shale may have a higher hydraulic conductivity than shale units with thicker clay layers. Below the Calhoun Shale is the Deer Creek Limestone. The upper limestone member (Ervine Creek Limestone Member) has open joints (dissolution) in outcrops in Atchison County, Kansas. The topographic map indicates that the abandoned quarry has a surface outlet to a stream, which is a tributary to the Wakarusa River upstream of Clinton Lake. Clinton Lake is a water supply for the City of Lawrence.

- A geologic issue that needs to be addressed at this site is the containment of leachate. Fractures in the Topeka Limestone in the walls of the quarry might provide pathways for leachate to migrate out of the abandoned quarry. The Calhoun Shale contains siltstone and sandstone layers that could allow leachate to migrate from below the landfill either laterally to surface streams or vertically into joints in the Ervine Creek Member of the Deer Creek Limestone.
- If leachate escapes, are there aquifers or streams that could be contaminated?
- The Kansas Geological Survey has no information on landslide or karst problems at this site.

The above discussion represents the information that the Kansas Geological Survey has on this proposed landfill site. Other geologic conditions, not discussed here, might affect the stability or safe operation of this landfill. The information provided in this letter is from regional (countywide) studies and should not be used as a substitute for detailed site investigations by a licensed geologist or engineer. It is the responsibility of the applicant to produce the detailed site evaluation.

If you have any questions about my comments, feel free to contact me 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

BARTLETT & WEST

ENGINEERS

SERVICE. THE BARTLETT & WEST WAY.

June 14, 2005

Kansas Geological Survey
1930 Constant Ave
Lawrence, KS 66047-3726

Re: Emerson Clean Fill Landfill
Project No.: 14791.000

To Whom It May Concern:

We have been retained by Tony Emerson to prepare an application for a landfill permit for clean fill (rock, concrete, asphalt, rubble, soil, etc.) only. One of the requirements for this application is to check with several agencies, such as yours, to determine if they have any information about the proposed site.

The proposed clean fill landfill will be located on 6.7 acres in the southwest quarter of Section 4, Township 13 south, Range 16 east of the 6th P.M., Shawnee County, Kansas (legal description attached.). A location map is also attached. This site is an abandoned rock quarry that was not reclaimed. This operation will, in essence, fill the existing hole and allow the area to be used for recreational use. 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 feel free to contact me at 785.272.2252.

Sincerely,



Mike Engler, L.A.

cc: Tony Emerson
Barry Beagle
enclosure

1200 SW EXECUTIVE DRIVE ■ TOPEKA KS 66615-3850

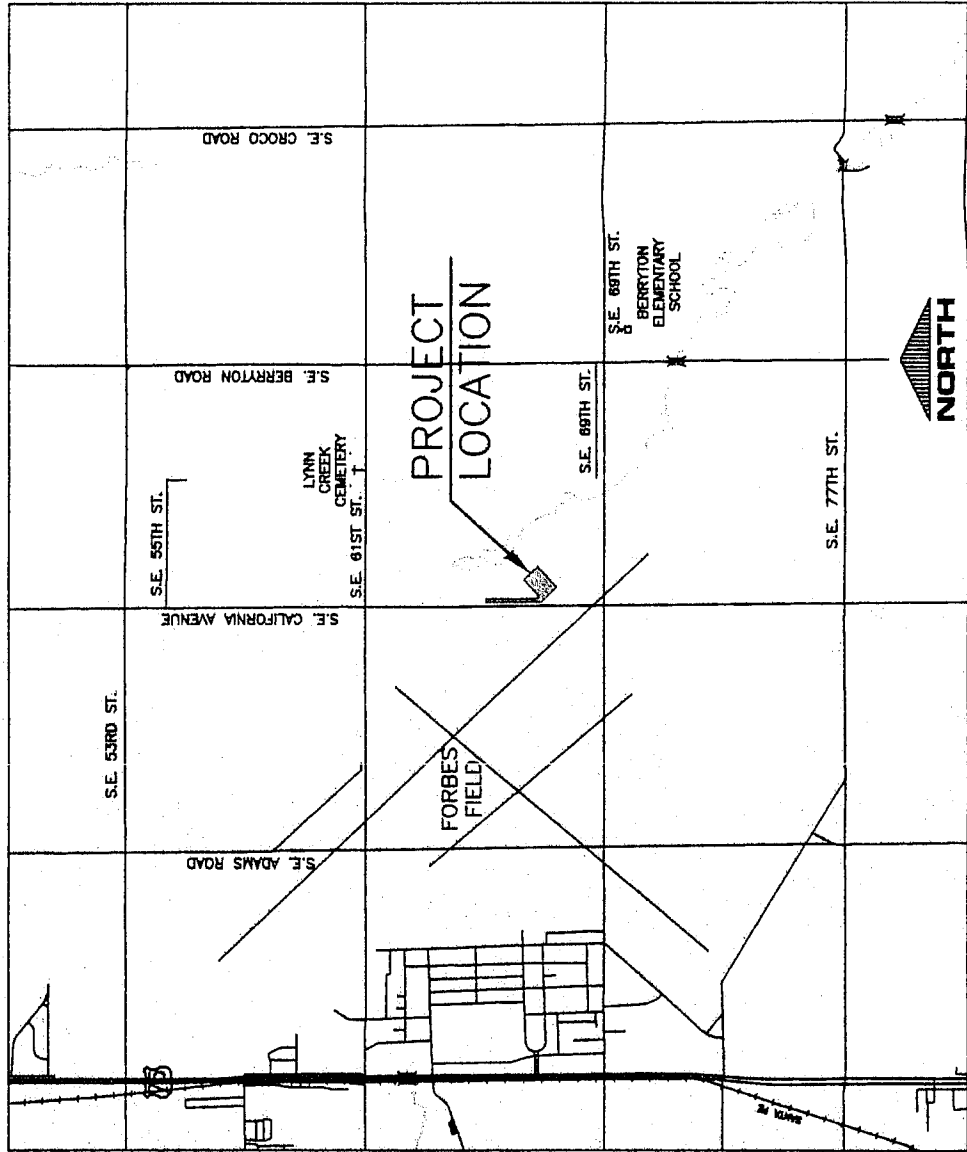
785.272.2252 ■ FAX 785.272.7349 ■ 888.200.6464

WWW.BARTWEST.COM

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 4, TOWNSHIP 13 SOUTH, RANGE 16 EAST OF THE 6TH P.M., SHAWNEE COUNTY, KANSAS, DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER; THENCE NORTHERLY, COINCIDENT WITH THE WEST LINE OF SAID SOUTHWEST QUARTER, ON AZ.359 DEGREES 57 MINUTES 20 SECONDS, (DIRECTION BASED ON THAT CERTAIN TRACT OF LAND DESCRIBED AS THE SECOND EXCEPTION IN DEED RECORDED IN BOOK 3818, PAGE 731, OFFICIAL RECORDS OF SHAWNEE COUNTY, KANSAS), A DISTANCE OF 1477.55 FEET TO THE POINT OF BEGINNING; THENCE SOUTHEASTERLY, COINCIDENT WITH SAID EXCEPTION, ON AZ.137 DEGREES 02 MINUTES 10 SECONDS, A DISTANCE OF 450.00 FEET; THENCE NORTHEASTERLY, ON AZ.47 DEGREES 02 MINUTES 10 SECONDS, A DISTANCE OF 600.00 FEET; THENCE NORTHWESTERLY, ON AZ.317 DEGREES 02 MINUTES 10 SECONDS, A DISTANCE OF 400.00 FEET; THENCE SOUTHWESTERLY, ON AZ.227 DEGREES 02 MINUTES 10 SECONDS, A DISTANCE OF 500.00 FEET; THENCE NORTHWESTERLY, ON AZ.317 DEGREES 02 MINUTES 10 SECONDS, A DISTANCE OF 89.80 FEET TO THE INTERSECTION WITH THE EASTERLY RIGHT OF WAY LINE OF S.E. CALIFORNIA AVENUE; THENCE NORTHERLY, COINCIDENT WITH SAID EASTERLY RIGHT OF WAY LINE, PARALLEL WITH AND 40.00 FEET EASTERLY OF THE WEST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 1100.75 FEET, MORE OR LESS, TO THE INTERSECTION WITH THE NORTH LINE OF SAID SOUTHWEST QUARTER; THENCE WESTERLY, COINCIDENT WITH THE NORTH LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 40.00 FEET, MORE OR LESS, TO THE WEST LINE OF SAID SOUTHWEST QUARTER; THENCE SOUTHERLY, COINCIDENT WITH THE WEST LINE OF SAID SOUTHWEST QUARTER, A DISTANCE OF 1204.58 FEET, MORE OR LESS TO THE POINT OF BEGINNING. CONTAINING 6.73 ACRES, MORE OR LESS.

SUBJECT TO EXISTING ROAD RIGHTS-OF-WAY.



VICINITY MAP

No Scale