KU KANSAS GEOLOGICAL SURVEY
The University of Kansas

March 1, 2007

Jack P. Chappelle, P.E.
Project Manager
Engineering Solutions & Design, Inc.
9393 W. 110th Street, Suite 500
Overland Park, KS 66210

Dear Mr. Chappelle,

Thank you for the information regarding the expansion of the McPherson County landfill. The information you provided regarding the relocation of the current stream drainage to the south of the site answered my questions concerning possible permeability differences in the streambed. Also, the use of and description of the clay and geosynthetic liner is sufficient to address the issue of potential leakage from the site.

The use of the liner and limiting the depth of excavation to the available thickness related to the topography is a reasonable method to employ at the site to limit intersection with the groundwater table.

The presence of a monitoring well at the site will hopefully continue to provide information concerning potential leakage. Will an additional well be placed down-gradient of the new excavation in order to monitor potential leakage from the new part of the landfill? Since I do not have access to the direction of ground water flow at the site this may be something that should be considered.

The above comments are based on a conversation with the applicant and also are based on information that the Kansas Geological Survey has on this proposed site. Other geologic conditions, not discussed here, might affect the stability or safe operation of the proposal. It is the responsibility of the applicant to produce the detailed site evaluation.

Sincerely,

Margaret A. Townsend

Margaret A. Townsend
Hydrogeologist
Geohydrology Section

Engineering Solutions & Design, Inc.

9393 W. 110th Street, Suite 500 • Overland Park, Kansas 66210
Tel: (800) 298-1851 • Fax: (800) 625-7898

January 16, 2007

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

RE: McPherson County Landfill Expansion - Review and Response Request

Gentlemen:

The McPherson Area Solid Waste Utility is intending to submit an application to the Kansas Department of Health and Environment's Solid Waste Bureau (KDHE) for a permit to expand the present McPherson County Landfill. KDHE requires the applicant to request various agencies review the proposed site and demonstrate that the property is in compliance with all restriction requirements as defined by Kansas statute. As a part of this process, your agency needs to review the proposed location and verify that the property is not within any geologically sensitive areas.

A location map for the proposed landfill expansion is attached to this letter. The property is located within McPherson County and is all within Section 16, Township 18 South, Range 3 West. The majority of the property is grazing land. The existing landfill is located in the southeast corner of the section and the proposed expansion will encompass the remainder of the southern half of Section 16 and the western two thirds of the northern half of Section 16.

I am requesting that you review the site and its uses and let me know of any issues regarding the proposed land use. If your agency does not foresee a conflict with this proposed land use, please sign and date both originals of this letter and return one in the enclosed postage-paid envelope. If you have any questions regarding this project or process, please contact me.

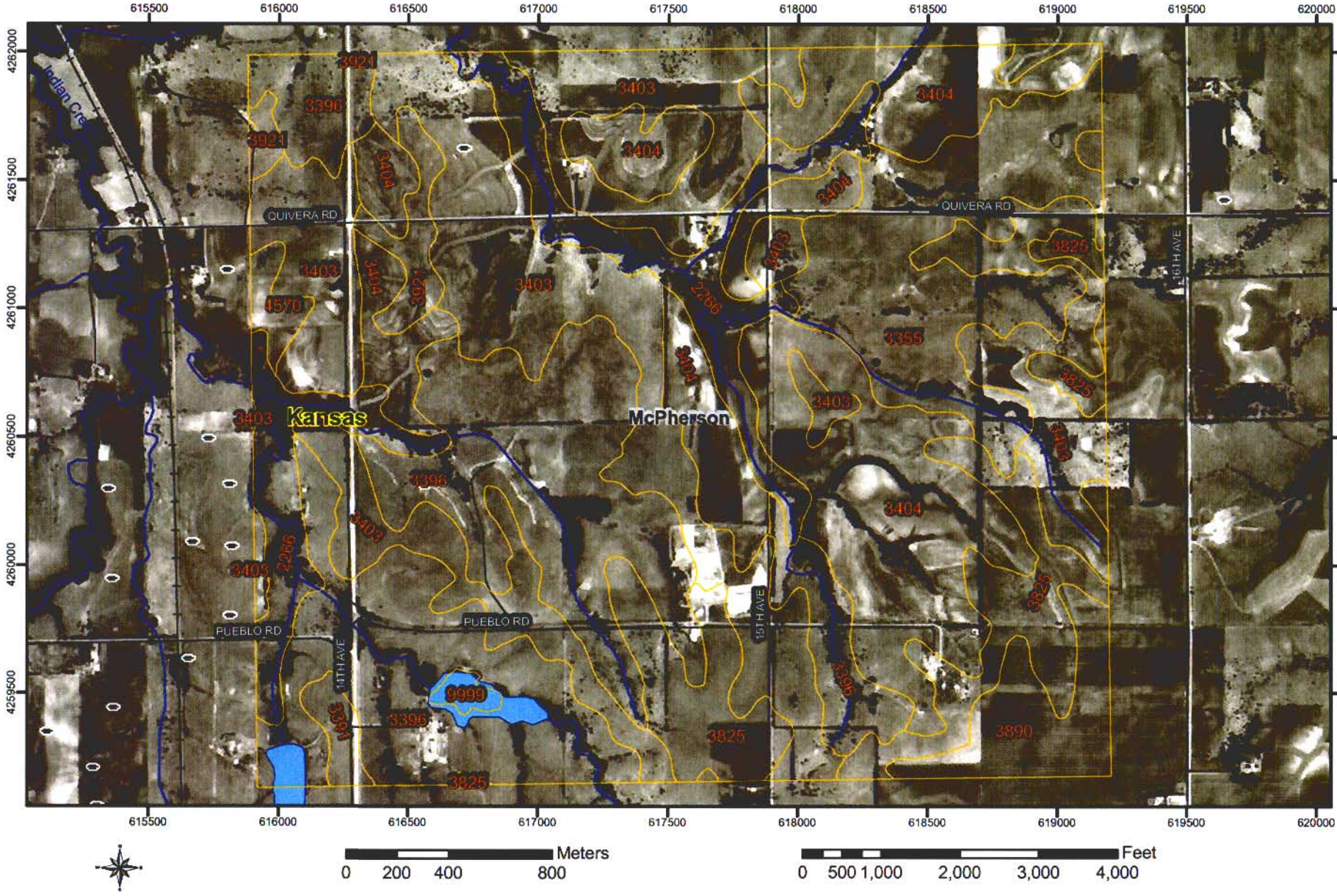
Sincerely,
ENGINEERING SOLUTIONS & DESIGN, INC.

Jack P. Chappelle, P.E.
Project Manager

We have examined the site indicated on the attached location map and to the best of our knowledge, we are unaware of any issues regarding the proposed land use.

Signature: Margaret A. Townsend Date: 2-28-07

McPherson Landfill Expansion



Map Unit Legend Summary

McPherson County, Kansas

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2266	Tobin silt loam, occasionally flooded	180.2	7.7
3355	Edalgo silt loam, 7 to 12 percent slopes	216.7	9.3
3391	Lancaster loam, 3 to 7 percent slopes	15.5	0.7
3396	Lancaster-Hedville complex, 3 to 20 percent slopes	528.6	22.7
3403	Longford silty clay loam, 3 to 7 percent slopes	633.8	27.2
3404	Longford silty clay loam, 3 to 7 percent slopes, eroded	447.0	19.2
3825	Crete silt loam, 1 to 3 percent slopes	183.1	7.8
3890	Ladysmith silty clay loam, 0 to 1 percent slopes	69.6	3.0
3921	Smolan silty clay loam, 1 to 3 percent slopes	37.5	1.6
4570	Clime silty clay, 3 to 7 percent slopes	14.7	0.6
9999	Water	7.2	0.3

23-27% sand
43-58% silt
10-27% clay

18-26% sand
41-55% silt
26-36% clay

3-10 ~~13-26~~% sand
67-71% silt
18-39% clay

How deep excavate? 30ft
liner on landfill? compacted clay? clay + geosyn liner
water chemistry in area?
municipal landfill or industrial waste also?

GW - 10-15
dep 60ft.

stream relocation along S side of property

existing landfill
14 years Chromium cleaned up

Oct 2006

McPherson Landfill Expansion

MAP LEGEND

- Soil Map Units
- Cities
- Detailed Counties
- Detailed States
- Interstate Highways
- Roads
- Rails
- Water
- Hydrography
- Oceans
- Escarpment, bedrock
- Escarpment, non-bedrock
- Gulley
- Levee
- Slope
- Blowout
- Borrow Pit
- Clay Spot
- Depression, closed
- Eroded Spot
- Gravel Pit
- Gravelly Spot
- Gulley
- Lava Flow
- Landfill
- Marsh or Swamp
- Miscellaneous Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Slide or Slip
- Sinkhole
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Perennial Water
- Wet Spot

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov

Coordinate System: UTM Zone 14

Soil Survey Area: McPherson County, Kansas
Spatial Version of Data: 1
Soil Map Compilation Scale: 1:24000

Map comprised of aerial images photographed on these dates:
1991

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.

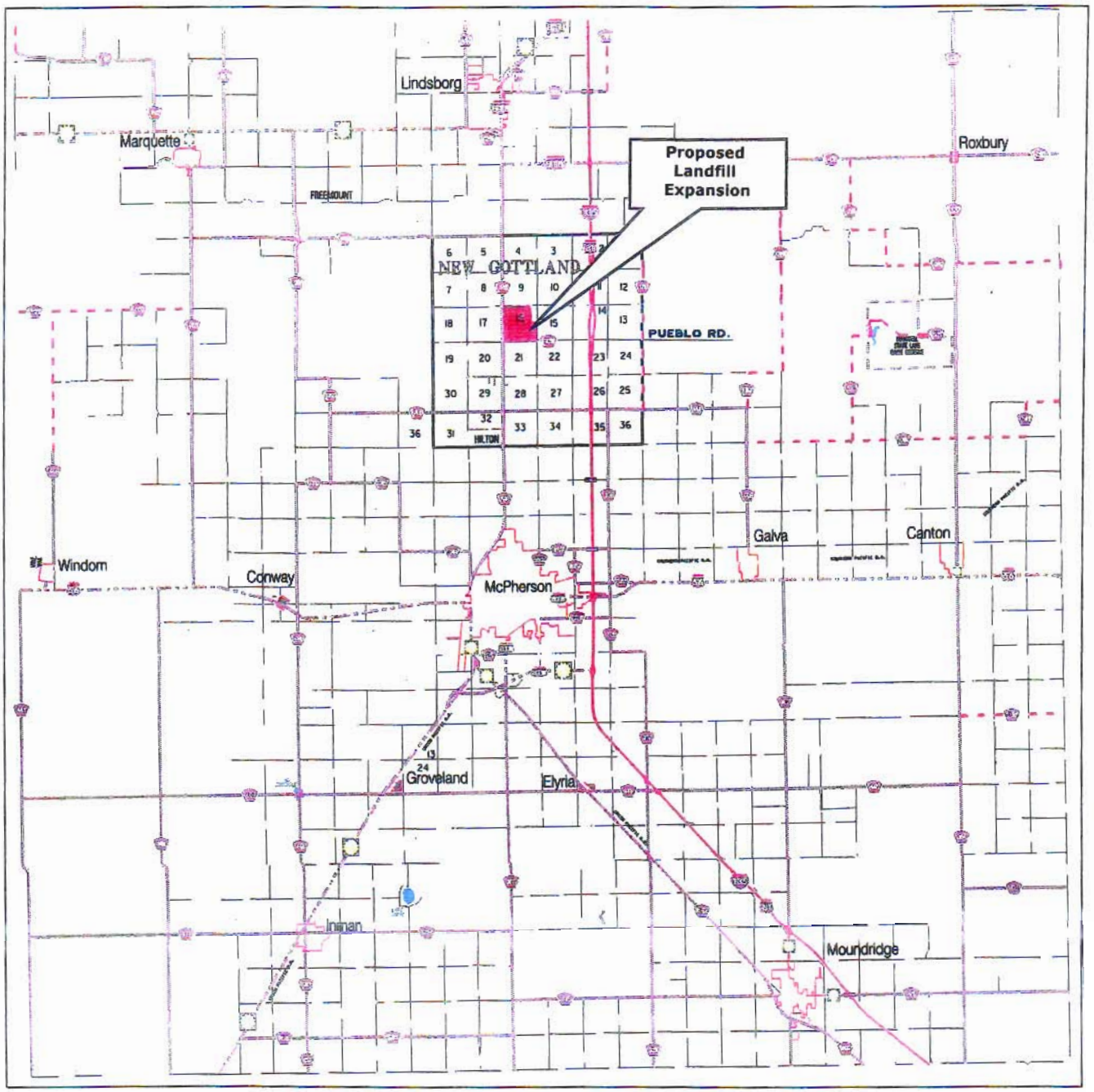


Figure 1. Location Map