

APPENDIX C
DESKTOP GEOTECHNICAL ASSESSMENT

21 June 2007

Carter & Burgess
2705 Bee Cave Road, Suite 300
Austin, Texas 78746

Attn: Mr. Glenn Bridges, Senior Project Manager

Re: Brushy Creek Regional Utility Authority (BCRUA)
Regional Water System
Desk Top Geotechnical Assessment
Cedar Park, Texas

File No.: 06-30707

Dear Glenn:

As per the authorization of Mr. John Lindner, we are providing a Preliminary Geological Assessment of the preferred pipeline route at the above referenced project site. It is our understanding a water line will be installed approximately 5 feet below existing grades. The purpose of the assessment is to characterize area soil conditions and make recommendations for the location and spacing of future design related soil borings and testing parameters.

Based on the "Geologic Map of the Austin Area, Texas, Plate VII, published by the Bureau of Economic Geology – The University of Texas at Austin and reprinted in 1992, the proposed alignment is located primarily in four geological formations; 1) Edwards Formation (Ked); 2) Commanche Peak Formation (Kcp); 3) Walnut Formation (Kwa) and; 4) Glen Rose Formation (Kgr). These formation are comprised of Cretaceous limestone rock. The Edwards formation consists of light gray to tan limestone and dolomite that ranges from thin to thick bedded. Solution collapse zones (voids) are found near the middle. The Commanche Peak formation consists of gray to tan marly nodular limestone. The Walnut formation consists of limestone, marl and marly limestone that is gray to tan in color and soft to hard. The rock is thick to thin bedded, massive to nodular and fine to medium grained. The Glen Rose formation is made up of gray to tan limestone, dolomite and marl. The limestone rock ranges from soft to very hard. Alluvial deposits consisting of varying amounts of clays, silts, sands and gravel overlie the bedrock and are generally found near creeks and lakes.

Numerous borings drilled by our firm in the area confirm the above descriptions. Generally one foot to 6 foot of brown and tan silty clays, clayey silts and tan silts are found overlying the limestone rock. In developed areas along the roadways and in some low areas varying amounts of fill material is not uncommon. The fill generally consists of silty clays and clayey silts with small to large rock.

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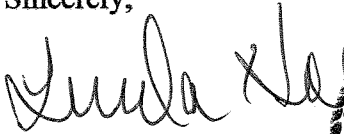
At shallow depths, the limestone formations are not known to produce large amounts of groundwater. Groundwater migrates through the fractures, seams and joints in the limestone rock and between the rock and fine-grained soils above. Some seepage of groundwater should be expected during trenching and excavation. Dewatering can generally be accomplished with pumps placed in the excavations. Perched water or saturated zones within the limestone formation may also produce groundwater. The amount of water will vary with rainfall conditions in the weeks and months prior to installation.

Excavation for the utility line may become difficult because of the hard rock layers. A rock saw or hoe ram may be needed for excavation and trenching. The thickness of the hard rock varies and may be found at most any depth.

Based on the anticipated soil and rock conditions, we would recommend borings along the alignment be spaced on approximately 1,000 foot centers. Borings are generally drilled to 5 feet below flow lines. If unexpected soil conditions are encountered, additional borings may be required.

If we can answer any questions regarding the above, please do not hesitate to call.

Sincerely,



Linda D. Holt, P.E.
Principal Engineer

