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July 6, 1981

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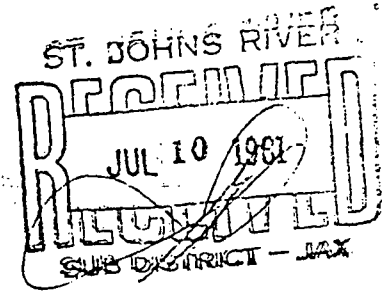
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Ms. Cathy Farmer  
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**BRANFORD SANITARY LANDFILL SITE**

Cathy, this letter pertains to the hydrogeological investigation of the proposed Branford sanitary landfill site. Due to the thickness and characteristics of the overburden, I do not recommend the site to be used as a sanitary landfill.

When you and I visited the limestone quarry southwest of the spray irrigation site I interpreted the overburden as consisting of eight to ten feet of sand and clayey sand. The consulting engineers responsible for the establishment of the spray irrigation site drilled several bore holes. The engineering report (Law Engineering Testing Company report for Job Number J-2312, pp. 21 and 22) indicated that, except for the western third of the site, approximately ten feet of sand, clayey sand, and sandy clay overlies calcareous, silty sand. A telephone conversation with personnel at Law Engineering confirmed that the calcareous, silty sand at the site could be interpreted as limestone. A local well driller constructed a water well for the spray irrigation site. The completion form (enclosed) indicated that limestone was present nine feet below land surface.

The problem is that I do not believe that enough overburden exists at the site to adequately protect the local groundwater resources. A landfill trench is often eight feet or greater in depth. If the thickness of the overburden in the eastern two-thirds of the proposed landfill site averages ten feet, then an average of only two feet of sands and clays separate the limestone bedrock from the

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bottom of the proposed landfill trenches. Leachate could easily find its way to the fractured limestone bedrock. Acidic leachate would cause dissolution of the limestone, thus this leachate would find its way to the aquifer.

The engineering report (pp. 21 and 22) indicated that the thickness of the overburden in the western third of the site reaches a thickness of 15 feet or more. However, the report also indicated that the overburden in this area is more sandy than in other portions of the site. Sandy soils are more permeable than clayey soils; and, therefore, landfill leachate could easily percolate downward to the aquifer.

In other aspects of hydrogeology the site is acceptable for use as a sanitary landfill. The site is not prone to flooding. The bedrock is composed of limestone. The Floridan Aquifer is the only aquifer in the vicinity of the proposed landfill. SRWMD data indicates that the depth to the potentiometric surface of the Floridan Aquifer is between 20 and 30 feet below land surface. The Floridan Aquifer is under water table conditions. Therefore, by definition the depth to the top of the aquifer is identical to the depth to the potentiometric surface of the Floridan Aquifer. The direction of ground-water flow is southwest toward the Suwannee River. The quality of ground water in the region around Branford is generally considered "good". The SRWMD has a ground-water quality monitor well located on SR-247 within two miles of the proposed site. Enclosed are the historical water quality data and other pertinent information for the monitor well.

If I can be of further assistance, please let me know.

*Rick Copeland*

RICK COPELAND - HYDROGEOLOGIST

RC/cn  
Enclosure