

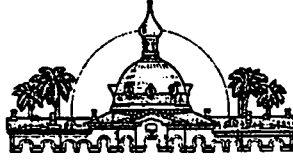
HILLSBOROUGH COUNTY

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December 15, 1994

Department of Environmental Protection
SOUTHWEST DISTRICT
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Mr. Steven G. Morgan
Section Supervisor
Solid Waste Compliance/Enforcement
Florida Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

RE: Southeast County Landfill - DEP December 2, 1994 Correspondence Regarding
Leachate Management

Dear Mr. Morgan:

This correspondence is presented as the Hillsborough County Department of Solid Waste's (DSW) response to the Florida Department of Environmental Protection's (DEP) referenced letter concerning leachate management at the County's Southeast County Landfill (Landfill).

Background Information

As previously indicated in the DSW's October 17, 1994 letter to the DEP, the County is pursuing an alternative leachate level as part of the pending permit renewal application for the Landfill. Specifically, the DSW has requested that the DEP allow leachate depths of up to 3.6 feet over the liner. Current State regulations allow up to 12 inches of hydraulic head over the liner. Due to the Landfill's unique liner system, 4.6 feet of leachate within the Landfill is equal to 12 inches or less of hydraulic head over the liner (with 3.6 feet being equilibrium). While the leachate levels within the Landfill are currently in excess of the one foot depth over the liner limit as specified in the existing permit for the Landfill, the DSW believes that the 3.6 feet of leachate is the target maximum level that should be established for this Landfill. The DSW and its landfill engineering consultant's, SCS Engineers, have requested the opportunity to meet with the DEP to discuss the alternative leachate level issue and will continue to pursue this effort.

However, the DSW recognizes that, due to delays in the operation of the on-site Leachate Treatment and Reclamation Facility (LTRF), high annual precipitation, and restrictions in leachate off-site disposal, leachate levels within the Landfill currently exceed even the 3.6 feet of leachate depth. Therefore, this response provides the DSW's proposed comprehensive plan of action for additional leachate management at the Landfill. Due to the short time frame available to evaluate and develop this Leachate Management Plan, the Plan must still be reviewed and approved by County Administration and the Board of County Commissioners (BOCC) prior to the County committing additional funds and resources to this effort.

Evaluation of Leachate Removal Potential

In order to evaluate the feasibility of removing additional leachate from the Landfill, the DSW requested that SCS Engineers assess the Landfill's leachate collection system sump pump rate, leachate recovery rate at the sump, hauling times, and the impact on the LTRF. SCS Engineers have determined that the maximum leachate removal rate from the Landfill is 150,000 gallons per day (gpd). This determination is based on SCS Engineers' analysis of the following factors which govern the amount of leachate which can be removed from the Landfill over any given timeframe.

1. **The rate at which the Landfill's leachate collection system can recharge leachate to the leachate sump (Pump Station No. 3).** The rate of recharge to the sump will vary with the depth of the leachate. As the leachate levels are reduced, the recharge rate also will decrease. Currently, it appears that the flow rate into the sump is in excess of 280,000 gpd based on field observations. Design calculations by SCS Engineers indicates that at fully saturated conditions in the leachate drainage layer (i.e., 2-foot depth), the recharge flow rates into the sump should decrease to approximately 84,000 gpd.
2. **The flow rate of the pump in Pump Station No. 3.** The flow rate of the pump is 125 gallons per minute (gpm), resulting in a maximum pump rate of approximately 150,000 gpd.
3. **The quantity of leachate that can be treated by the recently constructed Leachate Treatment and Reclamation Facility (LTRF).** Since the LTRF has not yet achieved substantial completion, effluent is being hauled off-site rather than spray irrigated. Once in full operation, the LTRF will have an average processing rate of 60,000 gpd, with approximately 50,000 gpd of the effluent being treated through spray irrigation, leaving approximately 10,000 gpd for off-site management.
4. **The rate at which transport vehicles can load, transport and dispose of leachate and effluent at the County's wastewater treatment facilities.** Based on the time required for the loading, hauling and off-loading of leachate at County wastewater treatment facilities, an average of two hours is required per round trip. Based on the utilization of three 6000 gallon tanker trucks, the County is able to remove 36 loads of leachate totalling 192,000 gpd over a 24 hour period.

5. **The quantity of leachate and effluent that the County's Public Utilities Department (PUD) will permit into the County's wastewater treatment facilities.** In order to implement a more aggressive leachate removal rate from the Landfill, the DSW requested that the PUD evaluate and present to the DSW the maximum disposal capacity available for the Landfill's leachate at County wastewater treatment facilities. The DSW has successfully negotiated an increase in the Landfill's leachate disposal capacity from 76,000 gpd to 200,000 gpd, with 160,000 gpd available capacity at the Falkenburg Advanced Wastewater Treatment (AWT) facility and 40,000 gpd available capacity at the Valrico AWT facility. In addition, the PUD has agreed to provide the DSW 24 hour access to the facilities to accommodate the increased truck hauling.

The controlling factor in the removal of leachate from the Landfill is the pump rate within Pump Station No. 3 and the leachate recharge rate of the collection system. Since the Landfill currently has leachate storage, recharge should not be a problem. Therefore, the pump rate establishes the leachate removal rate of 150,000 gpd. This rate would result in the removal of an additional 74,000 gpd over the current off-site removal rate of 76,000 gpd.

At a constant withdrawal rate of 150,000 gpd, SCS Engineers has estimated that the excess leachate stored within the Landfill should be removed within 6 months, resulting in a leachate depth of 3.6 feet over the liner. In order to achieve a leachate depth of 12 inches over the liner, a pumping rate of 150,000 gpd would be required for approximately 15 months.

Leachate Management Plan

1. To accommodate the increased leachate removal rate of 150,000 gpd, the DSW will direct its leachate hauling contractor to immediately increase hauling from 10 to 13 loads per day, six days per week. In order to continue leachate removal at this increased rate, at the first meeting in January 1995, the DSW proposes to recommend to the BOCC a contract modification to the leachate hauling contract for increased funding and a contract time extension. Should the Board approve Staff's recommendation, the DSW will be able to continue increased leachate off-site disposal through September 1995. The DSW also proposes to seek Board approval for additional funding to accommodate the increased interdepartmental charges from the PUD for the additional leachate disposal capacity at County wastewater treatment facilities. In addition, prior to the expiration of the proposed September 1995 leachate hauling contract extension, the DSW will evaluate the possibility of obtaining a new hauling contract to continue to provide off-site leachate disposal as necessary through Fiscal Year 1996.

2. Another component of the Landfill's leachate management plan includes the on-site LTRF. The LTRF is constructed and is undergoing start-up and shake down with the contracted operator. It is anticipated that the LTRF will be in full operation around the first of the year. At that time, off-site leachate disposal will be reduced to 90,000 gpd, so as not to exceed the 150,000 pump flow rate. Once the excess leachate has been removed from the Landfill, SCS Engineers has calculated that the expected leachate generation rate will be less than the 60,000 gpd process rate of the LTRF, at which point off-site leachate disposal will continue to serve as a backup to the LTRF's operation during periods of maintenance, downtime, or extended wet weather periods.
3. In addition, the DSW and its Landfill contractor, Waste Management Inc. of Florida (WMI) will ensure that stormwater is more aggressively managed to limit the amount of stormwater which must be managed as leachate. While stormwater management has always been a very high priority for the DSW and WMI at the Landfill, the DSW believes that the system can be further improved with additional diversion berms, further limiting the active working face and following the cover requirements outlined in Permit Modification #260901 to the existing Landfill permit.
4. The DSW has initiated a more aggressive monitoring program to assess the leachate levels within the Landfill. The DSW will continue to conduct daily monitoring of the leachate levels at the Landfill sump. However, the reports will be sent to the Landfill Services Section Manager on a daily basis for review and, if necessary, appropriate action will be taken by the DSW. This monitoring program will continue after the excess leachate is removed from the Landfill.

To summarize, the DSW's Leachate Management Plan consists of the following:

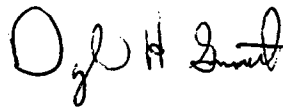
- increased off-site disposal at County wastewater treatment facilities;
- full operation of the LTRF;
- aggressive management of landfill stormwater control measures; and
- aggressive leachate level monitoring.

The DSW would appreciate any comments or questions that the DEP may have concerning the County's proposed Leachate Management Plan. While the DSW will immediately implement increased off-site hauling for the short term, both the County Administration and the BOCC must approve the resources and funding for the Leachate Management Plan prior to the DSW being able to commit to its full implementation. In addition, the DSW requests that a meeting be scheduled with the DEP and the Hillsborough County Environmental Protection Commission to discuss the rationale for the alternative leachate level proposed in the pending permit renewal application for the Landfill.

Mr. Steven Morgan
December 15, 1994
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Should you have any questions regarding this correspondence or require additional information, please contact me at 276-2900.

Sincerely,

A handwritten signature in black ink, appearing to read "Daryl H. Smith". The signature is written in a cursive style with a large initial "D".

Daryl H. Smith
Director
Department of Solid Waste

xc: Patricia V. Berry, DSW
Kim Ford, DEP
Steve Hamilton, SCS
Paul Schipfer, EPC