



CITRUS COUNTY

DEPARTMENT OF TECHNICAL SERVICES

1300 South Lecanto Highway • P.O. Box 440
Lecanto, Florida 34460-0440
(904) 746-2694 • FAX (904) 746-3368

Reply To:

CERTIFIED MAIL
RETURN RECEIPT
P 666 664 020

WACS ID # 39859
4009 C008 b

Division Solid Waste
Management
P. O. Box 440
Lecanto, FL 34460-0440
(904) 746-5000
FAX (904) 527-1204

December 14, 1992

D. E. R.

Robert J. Butera, P.E.
Solid Waste Manager
Division of Waste Management
Dept. of Environmental Regulation
Southwest District
3804 Coconut Palm Drive
Tampa, FL 33619-8318

DEC 18 1992

SOUTHWEST DISTRICT
TAMPA

**RE: PENDING MODIFICATION OF CONDITIONS - PERMIT NO. S009-187229
CITRUS COUNTY CENTRAL LANDFILL - CITRUS COUNTY**

Dear Mr. Butera:

This letter is in reply to your November 18, 1992 request for additional information. A response will be given for each of your comments.

RECIRCULATION SYSTEM

1. The recirculating and sprayfield schematic submitted shall be signed and sealed by a Florida registered professional engineer. In addition, this plan shall include at a minimum the following information:
 - a. Time, date and all other information in title block.
 - b. Header system specifications and list of materials as noted in your response letter to the Department dated September 28, 1992 in Para. 1.(d).
 - c. Pump size and specifications.
 - d. Filters and/or strainers and maintenance schedule.
 - e. Anticipated hours of operation and estimated leachate volume to be circulated and evaporated in a typical year for all winter and summer months. Calculations shall be submitted for the aforementioned as well as sizing the system.

James W. Pinkerton, P.E.
County Engineer and Director

 Printed on
Recycled Paper.

December 14, 1992
Mr. Robert J. Butera, P.E.
Page 2

As we discussed in our December 4, 1992 meeting, a redesign of the recirculation system is needed to allow the upper cell (Phase 1A) to be graded, and capped to allow discharge of uncontaminated stormwater from this area. Signed and sealed drawings of the revised plan are enclosed, as are system specifications and maintenance schedules for cleaning of the strainers.

Leachate will be recirculated and evaporated at the leachate recirculation reservoir. Hours of operation will be restricted to the landfill operation hours to ensure that operators will be present to prevent contamination of adjacent areas should high winds or other problems arise.

Calculations for leachate evaporation from this system and system sizing calculations will be provided by January 15, 1993.

2. What is the County's intent for aeration at the leachate pond?

Aeration at the leachate pond will be accomplished by spray nozzles as the leachate is recirculated. Refer to the enclosed plans and details sheets Four and Five.

3. The Department requests the relocation of the sprayheads by extending them a minimum of 36" down the liner slope and 18" away from the liner to allow for improved evaporation prior to liner contact. (An alternate method may be acceptable but nozzle spray patterns shall be indicated.)

Construction details for the proposed sprayheads at the leachate pond are enclosed. Refer to plan sheet Four.

4. Due to increased treatment of 60,000 gallons per day with the Batch PACT, treated leachate shall be sampled prior to discharge to the percolation pond in accordance with specific condition #13 as modified in April 16, 1992 as a modification of permit number S009-187229. (Please submit these results as soon as possible.) Within the submittal letter for sampling and analysis results, all parameters above maximum contaminant levels shall be identified by circling those parameters on these reports. Submit a summary report comparing values to values of contaminant levels when 30,000 gallons were recirculated.

Samples of treated leachate were taken on November 18, 1992, November 24, 1992, and December 2, 1992. The December 2, 1992 results may be the most representative because 60,000 gallons were treated on December 1, 1992 and December 2, 1992. Results of these sample analyses and a report will be submitted as requested when they are completed.

December 14, 1992
Mr. Robert J. Butera, P.E.
Page 3

The Department's Groundwater Cleanup Section can not review this data until the following information is submitted:

1. Specific location of the groundwater monitoring well, the proposed depth of the well and all associated installation details and soil and hydrology data. This technical information must be signed and sealed by a professional geologist.

A map showing the proposed location of the well will be provided with the reply to Mary Yeargan's November 20, 1992 memorandum. The depth of the well is proposed to be 150', however, the final depth, will not be known until after installation. The well will be installed by a contractor who will be required to submit data including the construction details, soil and hydrology data, and well logs. The contractor will be required to employ a professional geologist for certification of this technical information.

2. A letter of authorization for monitoring well installation from the State Forestry Division if the proposed well is sited within the Withlacoochee State Forest.

Following approval of the monitor well location by the FDER, the Withlacoochee State Forest will be contacted for their authorization. Well construction can begin only after this authorization has been granted.

3. A comprehensive proposal shall be submitted by the County utilizing a geotechnical engineering service.

A comprehensive proposal will be submitted to the FDER by Citrus County prior to well construction. The proposal will include the name of the registered geologist responsible for construction of the well, documentation of the construction techniques, and providing records of geotechnical data including well logs and soils information. This proposal will follow acceptance of the proposed well location by the FDER.

SITE OPERATION

RE: Site Sequencing, Operational and Control Plan dated 9/92 - Project #89-615.

1. If Phase 1-A is capped and covered; is the intent of the County not to use this cell for disposal beyond 180 days?

When the Cell (Phase 1A) is capped, it will not be used until Phase 1-B is filled to that elevation (80' +/-).

2. If the County does not intend to use this cell within 180 days it shall be covered per 17-701.050(3)(n), FAC. Note: This cell has not been utilized for disposal for some time, therefore Citrus County may have been in violation of the noted regulation.

As you are aware, Phase 1-A has been used to store accumulated leachate for quite some time. It is our goal to drain all ponded leachate from this cell by January 1, 1993. This will be accomplished by pumping the leachate to the lined leachate reservoir and then to the treatment plant. The leachate was originally pumped to this location as an emergency measure and it is not possible to comply with cover regulations until this leachate problem has been controlled. Citrus County is making a considerable effort to bring this site into compliance as quickly as possible. According to former operator, Mr. Rhodes, prior to closing Phase 1-A, a cap of 2' +/- thickness was applied. This cannot be verified at this time.

3. Submit permeability tests from samples to be used for cover of Phase 1-A.

Permeability samples and tests will be taken of the Phase 1-A cover material. These tests will be taken by January 15, 1993 and the results submitted to the DER.

4. Based on current daily volume reports project total phase-out of the currently permitted landfill. Be specific by plotting tonnage vs. projected dates. Note each cell as it becomes filled on this plot. Consider a projected increase of waste based on estimates of the County's population growth and/or solid waste increase.

The requested volume/time projections are enclosed. Refer to the cell closure schedule (Sheet Six) and the calculation sheets.

5. As each cell is closed and initially on cell 1-B a conveyance ditch running east to west should be constructed in soil that is separated a minimum of 24" from the waste to allow stormwater runoff from the slopes to be carried to the stormwater area.

This requirement is acceptable at unlined swale locations. Please refer to Sheet Two of the enclosed plans for proposed swale locations.

December 14, 1992
Mr. Robert J. Butera, P.E.
Page 5

6. Phase 1-A and 1-B Profile - The County is indicating a 2:1 slope on the north side of all proposed cells. This Department requests a minimum of 4:1 slopes to minimize erosion of the side slopes as well as reduce the surge of stormwater runoff to the berms.

A 4:1 slope is acceptable above elevation 50'. Below 50', a steeper slope may be needed to maintain optimum stormwater storage. Please refer to Plan Sheet Three.

As you are aware, we have already installed much of the system shown in these plans. One of the re-occurring problems has been a failure of the portable pump. To rectify this problem, we have ordered a back-up pump identical to the first pump. Because this leachate system will be needed for the remaining life of Phase 1, the system will be up-graded with electrically powered pumps at the leachate pond to increase efficiency of operation and reliability. Plans for this up-grade will be completed by March 1, 1993 and will be submitted to DER for approval.

Our goal is to complete the grading of the site and the installation of stormwater system by March 1, 1993. This will ensure that the leachate problems of the past will not re-occur. If you have any questions, do not hesitate to call me.

Sincerely,

Michael D. Moore

Michael D. Moore. P.E., Interim Director
Division of Solid Waste Management

Enclosures: Plan Sheets 1 through 7
Cell Closure Calculations

MDM:cms

cc: Anthony L. Shoemaker, County Administrator
James W. Pinkerton, Dir. Dept. Technical Services
Tom Fears, P.E., Engineer III
Ron Donadio, Engineering Technician III
Cathleen J. Winter, Solid Waste Technician

CELL CLOSURE PROJECTIONS

Citrus County's 80 acre landfill was first opened in January, 1991 and has, at this time, been operating for 2 years. During the first year of operation, recycling was in its infancy, and a variety of materials that could have been recycled found their way into the trench. In the past year, much has changed; yard waste is being recycled and the creation of "Recycle Alley" has aided in keeping aluminum, plastic, glass and newspaper out of the wastestream. As a result of this change in operation of the solid waste facility, the tonnage of waste entering the landfill has decreased. While this development should be considered desirable, it does make cell closure projections difficult. Estimations of tonnages must be based on data gathered during the previous 12 months, and projections of the future waste accumulations can only be estimated and later verified or adjusted. Current data suggests that an annual total of 59,850 tons per year is entering the trench. A further assumption must be made, that the waste will be compacted to a density of 1,000 lbs. per cubic yard. Also, the waste will be covered at intervals with earth; and therefore, it is assumed that the waste volume will increase by a factor of 1.25. Finally, it is reasonable to assume that, during Phase 1-C and D, the waste volume could increase as a result of growth within Citrus County. This growth factor has been estimated at 3% average for these phases.

It should be noted that these assumptions may need adjustment, and that the progress at the landfill, as well as waste quantities, must be monitored. This monitoring will provide the data needed to refine the closure schedule.

LANDFILL VOLUME/CELL CLOSURE PROJECTIONS

Estimated Tonnage 1992 - 1993: 59,850 $\frac{\text{TONS}}{\text{YR}}$

Factor for Earth Cover: 1.25

$$(59,850 \text{ Tons/Year}) \left(\frac{\text{CUBIC YARD}}{.5 \text{ TON}} \right) (1.25) = 149,625 \text{ YD}^3/\text{YR}$$

1. Volume of Cell: $245 \times 7.5 \times 280 \div 27 = 19,056 \text{ YD}^3$

Life: $19,056 \div 149,625 \times 365 \frac{\text{DAY}}{\text{YR}} = 46.5 \text{ Days}$

Use 47 Days

Begin Cell 1 on December 2, 1992

Fill Cell by January 19, 1993

2. Volume of Cell 2: $250 \times 7.5 \times 280 \div 27 = 19,444.4 \text{ YD}^3$

Life: $19,444 \div 149,625 \times 365 = 47 \text{ Days}$

Begin Cell 2 on January 19, 1993

Fill Cell by March 7, 1993

3. Volume of Cell 3: $250 \times 7.5 \times 240 \div 27 = 16,666.6 \text{ YD}^3$

Life: $16,667 \div 149,625 \times 365 = 40.6 \text{ Days}$

Begin Cell 3 on March 8, 1993

Fill Cell 3 by April 17, 1993

4. Volume of Cell 4: $250 \times 7.5 \times 250 \div 27 = 17,361 \text{ YD}^3$
 Life: $17,361 \div 149,625 \times 365 = 42.4 \text{ Days}$
 Begin Cell 4 on April 18, 1993
 Fill Cell 4 by May 29, 1993
5. Volume of Cell 5: $270 \times 7.5 \times 210 \div 27 = 15,750 \text{ YD}^3$
 Life: $15,750 \div 149,625 \times 365 = 38.4 \text{ Days}$
 Begin Cell 5 on May 30, 1993
 Fill Cell 5 by July 7, 1993
6. Volume of Cell 6: $160 \times 7.5 \times 270 \div 27 = 12,000 \text{ YD}^3$
 Life: $12,000 \div 149,625 \times 365 = 29.3 \text{ Days}$
 Begin Cell 6 on July 8, 1993
 Fill Cell 6 by August 5, 1993
7. Volume of Cell 7: $210 \times 7.5 \times 250 \div 27 = 14,583 \text{ YD}^3$
 Life: $14,583 \div 149,625 \times 365 = 35.6 \text{ Days}$
 Begin Cell 7 on August 6, 1993
 Fill Cell 7 by September 10, 1993

Close Phase 1B

Begin Phase 1C and D

Volume: Bottom Area = $375 \times 890 = 333,750$
 Top Area = $250 \times 1,035 = 258,750$

$$\text{Volume} = \left(\frac{333,750 + 258,750}{2} \right) \frac{40}{27} = 438,888.9 \text{ YD}^3$$

Assume a 3% increase in volume for Phase 1C and D

Annual Volume: $149,625(1.03) = 154,114 \text{ YD}^3/\text{YR}$

Life: $438,889 \div 154,114 = 2.85 \text{ Years or } 2 \text{ Years, } 10 \text{ Months, } 5 \text{ Days}$

Close Phase 1C and D on August 17, 1996

Total Volume Remaining in Phase 1 $566,943 \text{ YD}^3$

Volume of Phase 1:

Bottom Area: $450 \times 800 = 360,000 \text{ FT}^2$
 Top Area: $258,750 \text{ FT}^2$

$$\text{Volume} = \left(\frac{360,000 + 258,750}{2} \right) \frac{80}{27} = 916,667 \text{ YD}^3$$

Percent Remaining = $\frac{566,943}{916,667} = 62\%$

Percent Full = $100 - 62 = 38\%$