APPLICATION TRACKING SYSTEM 02/09/96

APPL NO:277526
APPL RECVD:09/15/95 TYPE CODE:SO SUBCODE:MM LAST UPDATE:02/07/96
DER OFFICE RECVD:TPA DER OFFICE TRANSFER TO:___ APPLICATION COMPLETE:11/13/96
DER PROCESSOR:FORD
APPL STATUS:WI DATE:02/02/96 (ACTIVE/DENIED/WITHDRAWN/EXEMPT/ISSUED/GENERAL)
RELIEF:__ (SSAC/EXEMPTIONS/VARIANCE)
(Y/N) N MANUAL TRACKING DISTRICT:40 COUNTY:09
(Y/N) N OGC HEARING REQUESTED LAT/LONG:28.51.08/82.26.38
(Y/N) N PUBLIC NOTICE REQD? BASIN-SEGMENT:__.___
(Y/N) N GOV BODY LOCAL APPROVAL REQD? COE #:_____
(Y/N) Y LETTER OF INTENT REQD? _ (I/ISSUE D/DENY) ALT#:___-_____

PROJECT SOURCE NAME:CITRUS CO. CENTRAL LANDFILL (MOD)
STREET:SR 44 CITY:NA
STATE:FL ZIP:_____ PHONE:___-___-____
APPLICATION NAME:CITRUS CO. DEPT. OF TECHNICAL SERVS
STREET:1300 S. LECANTO HWY. CITY:LECANTO
STATE:FL ZIP:32661 PHONE:___-___-____
AGENT NAME:_____
STREET:_____ CITY:_____
STATE:__ ZIP:_____ PHONE:___-___-____
FEE #1 DATE PAID:09/15/95 AMOUNT PAID:00250 RECEIPT NUMBER:00048325

B DATE APPLICANT INFORMED OF NEED FOR PUBLIC NOTICE - - - __/__/__
C DATE DER SENT DNR APPLICATION/SENT DNR INTENT - - - - - __/__/__--__/__/__
D DATE DER REQ. COMMENTS FROM GOV. BODY FOR LOCAL APP. -. __/__/__
E DATE #1 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - 10/10/95--11/13/95
E DATE #2 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #3 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #4 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #5 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
E DATE #6 ADDITIONAL INFO REQ--REC FROM APPLICANT - - - - __/__/__--__/__/__
F DATE LAST 45 DAY LETTER WAS SENT - - - - - - - - - - - __/__/__
G DATE FIELD REPORT WAS REQ--REC - - - - - - - - - - - - __/__/__--__/__/__
H DATE DNR REVIEW WAS COMPLETED - - - - - - - - - - - - __/__/__

I DATE APPLICATION WAS COMPLETE - - - - - - - - - - - - 11/13/96
J DATE GOVERNING BODY PROVIDED COMMENTS OR OBJECTIONS - - __/__/__
K DATE NOTICE OF INTENT WAS SENT--REC TO APPLICANT - - - - __/__/__--__/__/__
L DATE PUBLIC NOTICE WAS SENT TO APPLICANT - - - - - - - __/__/__
M DATE PROOF OF PUBLICATION OF PUBLIC NOTICE RECEIVED - - __/__/__
N WAIVER DATE BEGIN--END (DAY 90) - - - - - - - - - - - __/__/__--__/__/__

COMMENTS:THIS MODIFICATION NOT NEEDED FOR TEMPORARY IMPROVEMENTS AND FEATURES INCLUDED IN OTHER PERMITS.

AREA: SWD_____ Cash Receiving Applicatio_ CRAF006A
Collection Point Log Remittance Tot: _____$250.00

SYS$REMT: 67376___ Type: CP___ Recved Date: 15-SEP-1995 Status: RECEIVED
SYS$RCPT: 48325___ PNR: _____ Check #: 076429____ Amount: _____250.00
SSN/FEI#: _____ Name: CITRUS_CO_BD_OF_CO_COMM_____
First: _____ Middle: _____ Title:_____ Suf: _____
Address1: 110_N_APOPKA_AVE_____ Short Comments:
Address2: _____ S-CITRUS_CO_CENTRAL_LDFIL
City: INVERNESS_____ ST: FL Zip: 34450-4299 Country: _____

P A Y M E N T (S)

SYS$PAYT	Distr CL Area..	Object Code/Description.....:	Payment Amount.....	Reference#	Applic/ Fund	S T A CO
69164___	SWD___	002245 SOLID_WASTE-OPE	_____$250.00	SO09277526	___ PFTF__	
_____	_____	_____ _____	_____	_____	___ _____	__
_____	_____	_____ _____	_____	_____	___ _____	__
_____	_____	_____ _____	_____	_____	___ _____	__
_____	_____	_____ _____	_____	_____	___ _____	__

COMMIT FREQUENTLY _____$250.00 Payment total
Press_<TAB>_to_accept_Collection_Point_or_enter_F&A._____
Count: *1 <Replace>

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

DATE: 1/24/96

TIME: 10 AM -

SUBJECT: Citrus LF Renewal Appl

ATTENDEES

Name	Affiliation	Telephone
Tim Todd	DEP	(813) 744-6100 (382)
GARY PANOZZO	CH2M HILL	874-0777
John Wood	CH2M Hill	305/426-4008
Susan Metcalfe	Citrus County	352-746-5000
Allison Hamram	DEP	813/744-6100 x 336

TPA-02
06/93

Citrus County permit meeting 1/28/96
Renewal Permit (SO) p1/1

Kim requested this meeting to expedite the permit renewal process. Previous incomp. letter asked for genl info, last one asked for construction-level detail. Reviewed that letter, last Co. submittal

John – Don't like to submit such detail to minimize change orders w/ contract. Example: fill plan – will be based on vol. waste, wet/dry conditions, etc.

Kim – Wants to make sure the operator can understand sequence, construction, ongoing operations.

Susie – Training employees to understand permit requirements, compliance goals

John – Asked for SO permit-level detail

Kim – SE Hills – looked at plans/x-sects for fill sequence, drainage

Comment #1

Gary – No permanent drainage features in current cell – all installed.

Kim – What about temporary? PBS&J did some plans Confusion w/ CH2M Hills cross sections w/ elev. ref. plans that are "typicals" w/ no elev. – Looking for consistency.

Kim
- Requested detail for anchor trench (Went through Kim's notes on all figures)
- Access roads should be shown
- Vegetation - Co. had not plan to seed/mulch top @ ~2% - not worried about erosion here. Plan to return to area in ~6 months. No traffic in meantime. Kim also concerned about sediment in stormwater ditches. Discussed transition areas - erosion prevention, cover
- Soil types - Kim would like Co. to give operating personnel guidance on what types of soil to use where (ie - more permeable vs. less).
- Lining proposed ditches - Kim would like to see more detail - how much overlap, installation instructions.
- Drainage/protective layer - add to x-sects of liner to help op. personnel w/ waste placement.
- Stormwater - how to connect existing system to new cell - up to the contractor. Kim wants assurance for Phase IA that the gutters will be functioning as designed. Contract leaves this up to contractor to do performance-based connections. Kim worried about leachate going out of liner - Cliff Hill will have oversight over construction - can only tell contractor that it won't work or

no problem. They can't make suggestions to contractor. DEP will not be able to review contractor's work -- time a factor, Co./engineer can tell contractor to change something only if it's clear that a violation will occur. Kim wants some text describing how contractor errors will be prevented/corrected.

- Comment 2 - Previously discussed
- " 3 - Video HDPE lines - Co. has black, 6" pipe - won't be able to see much w/ the light from a minicam. Proposed jetting of lines -- if water goes thru, line is clear. Susie will give Kim schedule, details; Kim expects this will remain on incompleteness items until all lines jetted, results submitted to DEP
- Comment 4 - Gas monitoring will be incorporated into SO permit. Kim had some problems w/ some text - Susie anticipates changing gas plan to include new cell. Explosimeter - direct reading - no math conversion required.
- Changing from well clusters to continuous screen through vadose zone. Bottom will coincide w/ bottom of landfill. If problems

occur, will evaluate zones of gas generation.

- Continuous gas monitors - audio + visible alarm - checked daily, alarm goes off when gas > 25% LEL. Co. will provide text.
- Frequency - Tom Fears plan has monthly mon. for all wells -- Susie will check. Plan will be revamped for entire site. Kim requested 8½ x 11" drawing of all gas monitoring locations.

Kim requested opinion on 2:1 side slopes for next 30' height. John Wood - if filling across the bottom, lowering stress on liner, increasing stability. Filling along edges will increase stress. Kim wanted to make sure liner stays in anchor trench. Liner under some tension when weather is cool; slack in summer.

- King requested note on how protective cover for the liner is placed. Asked if Geogrid necessary to protect liner. CH2M Hill/Co. thinks it's probably a greater risk to disturb anchor trench.

conti

- Continuous igniters (solar-powered) installed on flares - Working well

Expansion Application - Phase 1A

Kim handed out draft comment letter, will be finalized today.

1. Needs statement - no H2O supply wells in radius, except CF well (Not potable)
2, 3 - Construction app. only - will need permit mod. fee to go to op. of Phase 1A. Current SO renewal is for Phase 1 SC09-282375 is for construction of Phase 1A, then will need $250 for Permit mod. after construction is certified complete. Constr. permit will authorize "phase-in" period. DEP has op plan for Phase 1 + 1A. Stormwater system is replacing old system -- will be effective as soon as built.
Kim does not necessarily need a response to item 2+3.
4 - publication notice attached
5 - Co. can reference when lab QA documentation sent w/ GW mon. reports.
6+7 - Plans show 2:1; text state 2½:1 slopes on liner. Safety factors not always >2.

7. Kim wants a friction test for 60 mil textured liner to show that it will work. Wants to know why this liner was selected. (manufacturer info on liner specs is fine to use)
8. Kim will change wording - How will leachate buildup along N. slope be prevented?
9. Co. talking w/ Tall - DEP - alt procedure not sent yet. Kim requested a copy of their APP.
10. All geonet is paired w/ geotextile - shown on plans, specs ~~&~~ show installation w/ + w/o geotextile.
11. Seam strength - application needs to show that all seams >90% of liner yield strength. 90% required by 62-701.
12. Requesting CQA + specs be consistent
13. Conformance testing - Kim wants C. to test liner materials when they arrive on-site. Mfg tests materials (by batch) prior to shipping - Co. wants to use this test as assurance that liner material meets specs. May document mfg tests w/ chain-of-custody. Kim wants entire X-sec. of liner system tested (soil, geofabrics, load on top). CH2M Hill will investigate.
14. Subbase testing - in rule for composite liner, not double-liner. Kim wants subbase tested to same specs as in rule. Kim asked

Tallahassee for an opinion on this - (Richard T., Chris McG.) Response was "Rule does not distinguish." Co./CH2M Hill will investigate. Kim will look for correspondence.

15. Gravel pack specs

16. Kim needs copy of reference. Kim wants further assurance on biological clogging & sustained load deformation.
John - Bio-clogging not really known - have to dig out landfill to view.

17. No forms submitted for CQA items. Kim wants to see the forms, not just a description of them.

18 - Ref. back to #14

19 - financial

20 - WQM concerns -
- leachate from Phase I + IA will be piped together prior to the Master Lift Station. Leachate from closed area will also go to this Master Lift Station.
- Requested WQM point map w/ fill areas shown - will be attached to the permit

Review of plans.

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

January 17, 1996

Ms. Susan Metcalfe, P.G.
Citrus County
Solid Waste Management
Post Office Box 340
Lecanto, FL 34460-0340

Re: Central Landfill, Phase 1 Operation
Pending Permit No.: SO09-274381, Citrus County

Dear Ms. Metcalfe:

This is to acknowledge receipt of the additional information received December 22, 1995 in support of your permit application to operate the solid waste management facility referred to as the Central Landfill.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit remains incomplete. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the solid waste application [Chapter 62-701, Florida Administrative Code (F.A.C.)]. Please provide:

1. Revised drawings for sequence of filling and access roads across previously filled areas which show top slopes that promote drainage and allow runoff to enter existing and proposed stormwater conveyances, including:

   a. revised cross-sections drawn to scale which show the proposed 2% minimum top slope (and note for % maximum top slope), with elevations of the top slope at each cross-section where connections are made to existing or proposed ditches; and

b. revised typical sections drawn to scale for connections to existing and proposed lined ditches, which show existing landfill liner anchor trench, depth of cover, erosion control, location of waste, and construction notes for:

1. % maximum top slope,
2. limits of waste in vicinity of lined ditches,
3. type of soil cover,
4. depth of cover,
5. erosion control,
6. lining proposed ditches,
7. removing existing ditch liner,
8. placement of drainage and protective layer on landfill liner sideslopes,
9. construction over and/or around temporary hard-piping for leachate.

c. revised typical sections for each type of temporary and permanent, existing and proposed stormwater conveyances for above and below grade filling with the same level of detail and construction notes requested in 1.b.

2. Description of methods used to minimize ponding in stormwater conveyances and the subsequent infiltration of stormwater into waste filled areas, including but not limited to the type of cover and depth of cover over the waste in the conveyances, as well as erosion control and maintenance.

3. The results of the proposed inspection and cleaning with a performance evaluation for the existing LCRS piping to verify that the LCRS system is not clogged and is functioning properly. A procedure to clean the LCRS system shall be included with the performance evaluation.

4. Revised comprehensive gas monitoring program that describes in detail all on-site gas monitoring, and specific protective measures and equipment, including but not limited to a comprehensive drawing that shows all specific sampling and testing locations and the recommendations in Citrus County's March 1, 1994 Gas Migration Monitoring Report which may be referenced or resubmitted as an attachment, as well as clarification for:

a. the statement in the third paragraph, second sentence on page 1 of Attachment C that migrating gas "will eventually escape to the atmosphere" since at least one explosion has occurred at the site,

b. the testing equipment that seems to require a mathematical conversion to % LEL after each test,

c. the fourth paragraph, second sentence on page 3 of Attachment C which reads in part "The is to first attach the hose...",

d. the need for two bentonite seals between each gas monitoring zone as shown on Figure 2 of Attachment C,

e. the method of "continuous monitoring" proposed in the last paragraph on page 5 of Attachment C.

Please provide all responses that relate to engineering required for operation, signed and sealed by a professional engineer. If some information has been previously submitted, please reference it specifically rather than resubmit.

"NOTICE! Pursuant to the provisions of Section 120.600, F.S. and Chapter 62-12.070(5), F.A.C., if the Department does not receive a complete response to this request for information within 30 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you received this letter, responding to all of the information requests and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of a timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant may reapply as soon as the requested information is available."

You are requested to arrange a meeting with DEP staff to discuss the items in this letter prior to responding. You are requested to submit your response to this letter as one complete package. On all future correspondence to the Department, please include Robert Butera on distribution. If there are points which must be discussed and resolved, please contact me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.
Solid Waste Section
Division of Waste Management

KBF/ab

cc: Gary Kuhl, P.E., Citrus County Public Works
Gary Panozzo, P.E., CH2M Hill
Robert Butera, P.E., FDEP Tampa

Florida Department of

Memorandum — Environmental Protection

TO: Kim Ford, P.E.

FROM: Allison Amram, P.G. AAmram

SUBJECT: Citrus County Central Landfill
Operation Permit Renewal, Pending Permit No. SO09-274381

DATE: January 17, 1996

CC: Bob Butera, P.E.

==========

I have reviewed the Citrus Central Landfill permit renewal application response submittal dated December 22, 1995, prepared by CH_2M Hill. No response to the groundwater issues was provided, or was necessary. The groundwater monitoring plan as proposed is acceptable, however, there is one issue pending. Citrus County is evaluating potential groundwater impacts of sodium from the leachate treatment plant effluent. They will be submitting a solute transport model in February 1996 to demonstrate if the existing zone of discharge is adequate for mixing of the high-sodium effluent that is discharged to groundwater through the percolation ponds. If the modeling shows that sodium will eventually exceed the groundwater standard at the edge of the zone of discharge, alternate treatment or disposal of the leachate will be initiated by Citrus County.

aa

WASTE MANAGEMENT TECHNICAL SUPPORT
ROUTING FORM

PERMITTED FACILITIES

To: Allison Amram, P.G.
Solid Waste Program

From: [illegible]

Date: 1/12/96

Subject: Closure Operations Request

Document Name: _____

Revision Number _____ County: Lucas

Facility Name: _____

Type of Facility: LF

Permit Number: _____ Issue Date: _____

Copy of Permit attached: _____

Document submitted in compliance with permit condition. _____

Document subject to permit timeclock. ✓

Day 1: 12/22

Day 30: 1/20

PATS sheet attached: _____

Enforcement Case/CO/NOV/ associated with this site: _____

Files and related documents can be found: Attached files

Please review and comment on the technical aspects of the attached document as you deem appropriate. In order to maintain progress with the permit review, please provide comments within 30 days or by 1/18/96.

Comments: Looks like your issues are resolved. Please confirm in writing. TA

Module _____

Attachments

Florida Department of

Memorandum — Environmental Protection

TO: Kim Ford, P.E.

FROM: Allison Amram, P.G.

SUBJECT: Citrus County Central Landfill
Operation Permit Renewal, Pending Permit No. SO09-274381

DATE: November 20, 1995

CC: Bob Butera, P.E.

==========

I have reviewed the Citrus Central Landfill permit renewal application response submittals dated September 18, 1995 and October 16, 1995 for water quality monitoring concerns. The following comments are referenced by Section of the Groundwater Monitoring Plan, and numbers correspond to the comment numbers in the August 15, 1995 permit incompleteness memorandum.

1. Section 3.6.2.2 The County's plans for revising the Zone of Discharge (ZOD) for the leachate effluent percolation ponds stated in the October 16, 1995 letter to the FDEP are acceptable. The ZOD for these ponds will be the same as the ZOD for the on-site landfills. This is acceptable due to the location of the landfill adjacent to the ponds on the downgradient edge. The sodium solute/transport model to be submitted to the FDEP in February 1996 will evaluate the future use of the ponds based on potential sodium impacts to the groundwater. This issue will be addressed at that time. The improvements to the leachate treatment system appear to have significantly reduced the nitrate concentrations in the leachate effluent, but nitrate concentrations will continue to be monitored in intermediate detection well MW-6 near the disposal ponds.

2. Section 4.1 Prior to collecting field-filtered groundwater samples, the FDEP must approve the filtering. A site-specific request, following the criteria in Department's Technical Document Determining Representative Ground Water Samples, Filtered or Unfiltered, dated January 1994 is necessary to obtain approval. These criteria are listed in Section III, Demonstrations. From prior submittals, it appears that the permittee has adequately addressed all criteria except No. 3 and 6. Number 3 requires a sealed request for filtering and certification of proper well construction, and number 6 requires submittal of both filtered and unfiltered groundwater samples for comparison. Please note that only metals and radionuclides groundwater samples may be field-filtered, and only if the field turbidity of the raw groundwater sample is measured to be more that 5 NTUs.

3. Section 4.2 All site groundwater monitoring activities will be incorporated into the landfill's operational permit, and deleted from the long-term care permit.

4. Section 4.2(7) No response required.

5. Section 4.4 After discussion with Citrus County (Susan Metcalfe, P.G.) it was agreed that leachate sampling shall take place at the Master Lift Station, to be constructed and operational in approximately 6 months. Until the lift station is operational, leachate will be sampled from the inlet to Tank 2.

6. Sections 4.5.1 and 4.5.3 The Department will require the new site wells to be sampled initially for all parameters listed in F.A.C. Rule 62-701.510(8)(a) and (d), and then semi-annually for the parameters listed in F.A.C. Rule 62-701.510(8)(a). The water quality monitoring plan states that the wells will be sampled semi-annually for the parameters listed in F.A.C. Rule 62-701.510(8)(a) and (d), which is not required.

7. Section 4.7(2) This comment has been adequately addressed.

If the applicant should have any questions concerning these comments, they may contact me directly at 813/744-6100, ext. 336.

aa

WASTE MANAGEMENT TECHNICAL SUPPORT
ROUTING FORM

PERMITTED FACILITIES

To: Allison Amram, P.G.
Solid Waste Program

From: [illegible]

Date: 1/12/96

Subject: Closure Operations Request

Document Name: _____

Revision Number _____ County: Citrus

Facility Name: _____

Type of Facility: LC

Permit Number: _____ Issue Date: _____

Copy of Permit attached: _____

Document submitted in compliance with permit condition. _____

Document subject to permit timeclock. ✓

Day 1: 12/22

Day 30: 1/20

PATS sheet attached: _____

Enforcement Case/CO/NOV/ associated with this site: _____

Files and related documents can be found Attach files

Please review and comment on the technical aspects of the attached document as you deem appropriate. In order to maintain progress with the permit review, please provide comments within 30 days or by 1/18/96.

Comments: Looks like your issues are resolved. Please confirm in writing. TAA

Module _____

Attachments

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 1/9/95 Subject Leachate Pump Failure

Time 4:45 Permit No. _____

County Citrus

M Susie Metcalfe Telephone No. 352/746-5000

Representing Citrus

[X] Phoned Me [ ] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting _____

Summary of Conversation/Meeting

Electrical failure w/ the leachate pumps from 80-acre landfill lift station down for about a day, now fixed. Leachate probably didn't fill up the lift station during that time - leachate contained w/in leachate collection/removal system.

She will note this in her monthly leachate report.

(continue on another sheet, if necessary)

Signature A Amman

Title PG/

PA-01
1/93
hjs

Citrus S.O. permit file

FDEP	3804 Coconut Palm Drive, Tampa, FL 33619-8318

FAX

Date: 1/3/96

Number of pages including cover sheet: 2

To:
Susie Metcalfe
Citrus Co. Solid Waste Mgt

Phone: 904/746-5000
Fax phone: 352/746-3368
CC:

From:
Allison Amram

Phone: (813) 744-6100 x336
Fax phone: (813) 744-6125

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Re:
Leachate treatment plant upset

Department of
Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

January 3, 1996 **VIA FAX**

Ms. Susan Metcalfe, P.G., Director
Division of Solid Waste Management
P.O. Box 167
Lecanto, Florida 34460

Subject: Leachate Treatment Plant Upset
Citrus County Central Landfill, Permit No. SO09-187229

Dear Ms. Metcalfe:

As we discussed on the telephone today, the leachate treatment plant for the Citrus County Central landfill has suffered an upset due to cold weather. Apparently the organisms used in the biological treatment process were killed. Until the County repairs the damage and can demonstrate that adequate nitrate removal is occurring (nitrate less than 12 milligrams per liter), the treated leachate effluent may *not* be disposed of in the site's percolation ponds. As soon as test results support this nitrate concentration, please fax them to my attention at 813/744-6125. Once this has been received by the FDEP, the percolation ponds can be used for the effluent.

If you have any questions, please contact me at 813/744-6100, ext. 336.

Sincerely,

Allison Amram

Allison Amram, P.G.
Solid Waste Section

cc: Gary Kuhl, Director, Citrus County Dept. of Public Works
Bob Butera, P.E., FDEP
Kim Ford, P.E., FDEP

Transmit Confirmation Report

No.	:	007
Receiver	:	813527463368
Transmitter	:	WASTE MGT TAMPA SWDIST
Date	:	Jan 03 96 ~~18:08~~ 17:08
Time	:	01'52
Mode	:	Fine
Pages	:	02
Result	:	OK

Department of
Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

January 3, 1996 **VIA FAX**

Ms. Susan Metcalfe, P.G., Director
Division of Solid Waste Management
P.O. Box 167
Lecanto, Florida 34460

Subject: Leachate Treatment Plant Upset
Citrus County Central Landfill, Permit No. SO09-187229

Dear Ms. Metcalfe:

As we discussed on the telephone today, the leachate treatment plant for the Citrus County Central landfill has suffered an upset due to cold weather. Apparently the organisms used in the biological treatment process were killed. Until the County repairs the damage and can demonstrate that adequate nitrate removal is occurring (nitrate less than 12 milligrams per liter), the treated leachate effluent may *not* be disposed of in the site's percolation ponds. As soon as test results support this nitrate concentration, please fax them to my attention at 813/744-6125. Once this has been received by the FDEP, the percolation ponds can be used for the effluent.

If you have any questions, please contact me at 813/744-6100, ext. 336.

Sincerely,

Allison Amram

Allison Amram, P.G.
Solid Waste Section

cc: Gary Kuhl, Director, Citrus County Dept. of Public Works
Bob Butera, P.E., FDEP
Kim Ford, P.E., FDEP

SO permit file
Citrus Landfill

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 1/3/96 Subject Leachate Treat. Plant Problems

Time 4:20 Permit No.

County Citrus

M Susie Metcalfe Telephone No. 352/746-

Representing Citrus Co

[X] Phoned Me [ ] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting Cold weather killed CTP bugs. expected conc. in effluent: 20 - 30 mg/l Nitrate (methanol feed pump has failed; fixed now) BOD or COD may increase

She will delay the leachate quarterly sampling until the plant is fixed.

I told her that I would fax her a letter requiring the leachate to be disposed elsewhere (not the perc ponds) until NO_3 treatment is effective.

(continue on another sheet, if necessary)

Signature A. Amram

Title PG I

PA-01
1/93
hjs

CH2M HILL
Engineers
Planners
Economists
Scientists

December 22, 1995

117956.28.01

Kim B. Ford, P.E.
Solid Waste Section
Florida Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

Dear Mr. Ford:

Subject: Citrus County Central Landfill
Phase 1 Operating Permit Renewal
Permit No.: SO09-274381

The purpose of this correspondence is to provide the additional requests in your letter dated November 20, 1995 to renew the Phase 1 operating permit for the Citrus County Central Landfill. Your requests for additional information are restated below with our response.

Request No. 1 *Revised drawings for sequence of filling with access roads across previously filled areas which show top and side slopes that promote drainage and allow runoff to enter existing and proposed stormwater conveyances.*

Response No. 1 Revised drawings for sequence of filling are provided in Attachment A.

Request No. 2 *Typical construction details for berms used to minimize leachate generation and the mixing of stormwater with leachate.*

Response No. 2 Berms used to minimize leachate generation and the mixing of stormwater with leachate are shown on the working face diagram shown in Attachment B.

Request No. 3 *A performance evaluation of the existing LCRS piping based on an inspection and verification that the LCRS is not clogged and is functioning properly. A procedure to clean the LCRS system shall be included in the performance evaluation.*

Response No. 3 Citrus County is making arrangements to have the Phase 1 leachate collection pipes visually inspected using video techniques. During this procedure, the

leachate pipes will also be cleaned. Results of the inspection and cleaning will be provided to your office upon completion. Completion is expected sometime in March.

Request No. 4 *Revised gas monitoring program that includes all on-site gas monitoring and protective measures which are necessary in response to gas migration from the closed landfill.*

Response No. 4 The Phase 1 gas monitoring program has been revised to include miscellaneous gas monitoring in response to the closed landfill. The Phase I routine gas monitoring program is included in Attachment C.

Request No. 5 *Typical construction details for each type of temporary and permanent storm water conveyance for above and below grade filling or a specific reference for each detail previously submitted.*

Response No. 5 Typical sections are included on Figure 12 in Attachment A.

Request No. 6 *A list of all site improvements which have not been completed including but not limited to the proposed temporary transfer station, hard piping for leachate, and stormwater conveyances, and a description of all related impacts from each on the proposed operations.*

Response No. 6 The temporary transfer station and hard piping for leachate are addressed in the existing Phase 1 minor permit modifications as referenced in Citrus County's letter to your office dated November 7, 1995. The transfer station is a possible future change to operations and no impact is expected to operations addressed in the Phase 1 permit renewal. The proposed leachate hard piping also has no impact on proposed operations as the hard piping will be installed outside the limits of the 0.5-year filling interval shown on Figure 1 in Attachment A. Stormwater conveyances are shown on the figures in Attachment A. These conveyances will be an integral part of landfill operations.

Request No. 7 *Please provide your response to Ms. Allison Amram's concerns in her November 20, 1995 memorandum attached. You may contact Ms. Amram at (813) 744-6100, extension 336.*

Response No. 7 No additional information is required by Ms. Amram's comments. Citrus County has been working with Ms. Amram's office and the subject groundwater monitoring plan which is part of the Phase 1 operations permit renewal has been accepted.

As you have requested in our previous conversations we are submitting three copies of this correspondence to your office and one copy to Mr. Robert Butera - FDEP Tampa. Please do not hesitate to contact me to discuss our application or if you need additional information.

Sincerely,

CH2M HILL

Gary L. Panozzo, P.E.
Geoenvironmental Engineer

LET010.DOC
c: Robert Butera, FDEP Tampa
Gary Kuhl, Citrus County
Susan Metcalfe, Citrus County

Attachment A

Sequence of Filling Drawings

117598.28.01 10/95 dd4.30

Temporary Stormwater Pond

2% MINIMUM
SEE TYPICAL SECTION ON FIGURE 12 FOR DITCHES ON NORTHERN FACE OF LANDFILL

NEW STANDPIPE PERMITTED AS A MINOR MODIFICATION TO EXISTING PHASE I PERMIT

INSTALL LINED DITCH AS SHOWN ON TYPICAL SECTION IN FIGURE 12

2% Min. (Typ.)

ELEVATION 100

GRADE TOP OF THIS FILLING INTERVAL TO EXISTING LINED DITCH IN THIS AREA. SEE TYPICAL SECTION ON FIGURE 12 FOR CONNECTION TO EXISTING LINED DITCH.

Permanent Stormwater Pond

A

A'

N 1642500

N 1642000

E 516000

E 516584

1641523.98

NOTES:

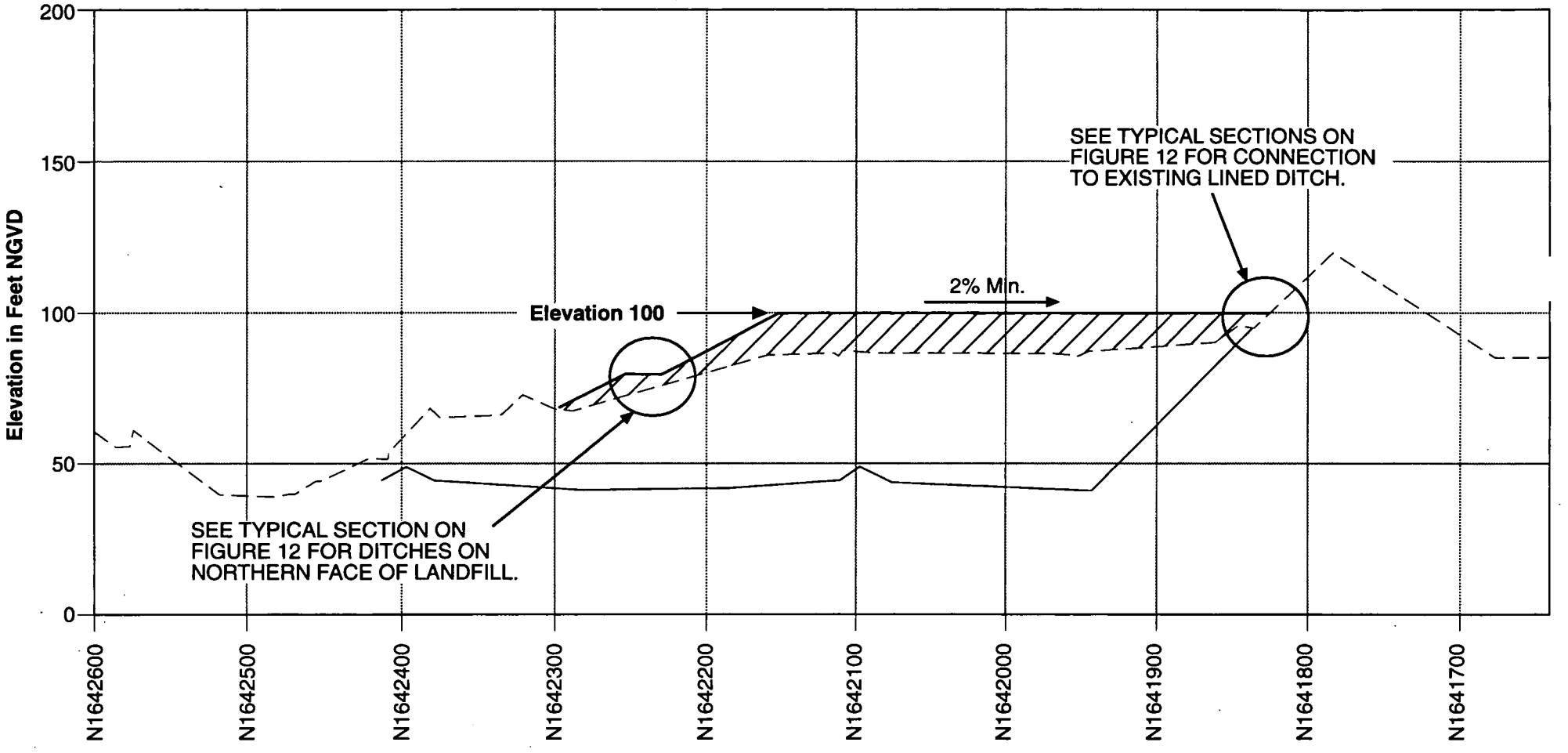
1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.

N

Scale in Feet
0 50 100
1" = 100'

FIGURE 1
0.5 - Year Interval Filling Plan

CH2M HILL



NOTES:

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Horizontal Scale
1" = 100'
Vertical Scale
1" = 50' NGVD

FIGURE 2

0.5 - Year Interval Filling Section A - A'

CH2M HILL

B

Temporary Stormwater Pond

2% MINIMUM (TYP.)
SEE TYPICAL SECTION ON FIGURE 12 FOR
DITCHES ON NORTHERN FACE OF LANDFILL

INSTALL LINED DITCH AS SHOWN
ON TYPICAL SECTION IN FIGURE 12

2% MIN (TYP.)

ELEVATION 107

ELEVATION 100

GRADE TOP OF THIS FILLING INTERVAL TO EXISTING LINED DITCH IN THIS AREA. SEE TYPICAL SECTION ON FIGURE 12 FOR CONNECTION TO EXISTING LINED DITCH.

B'

Permanent Stormwater Pond

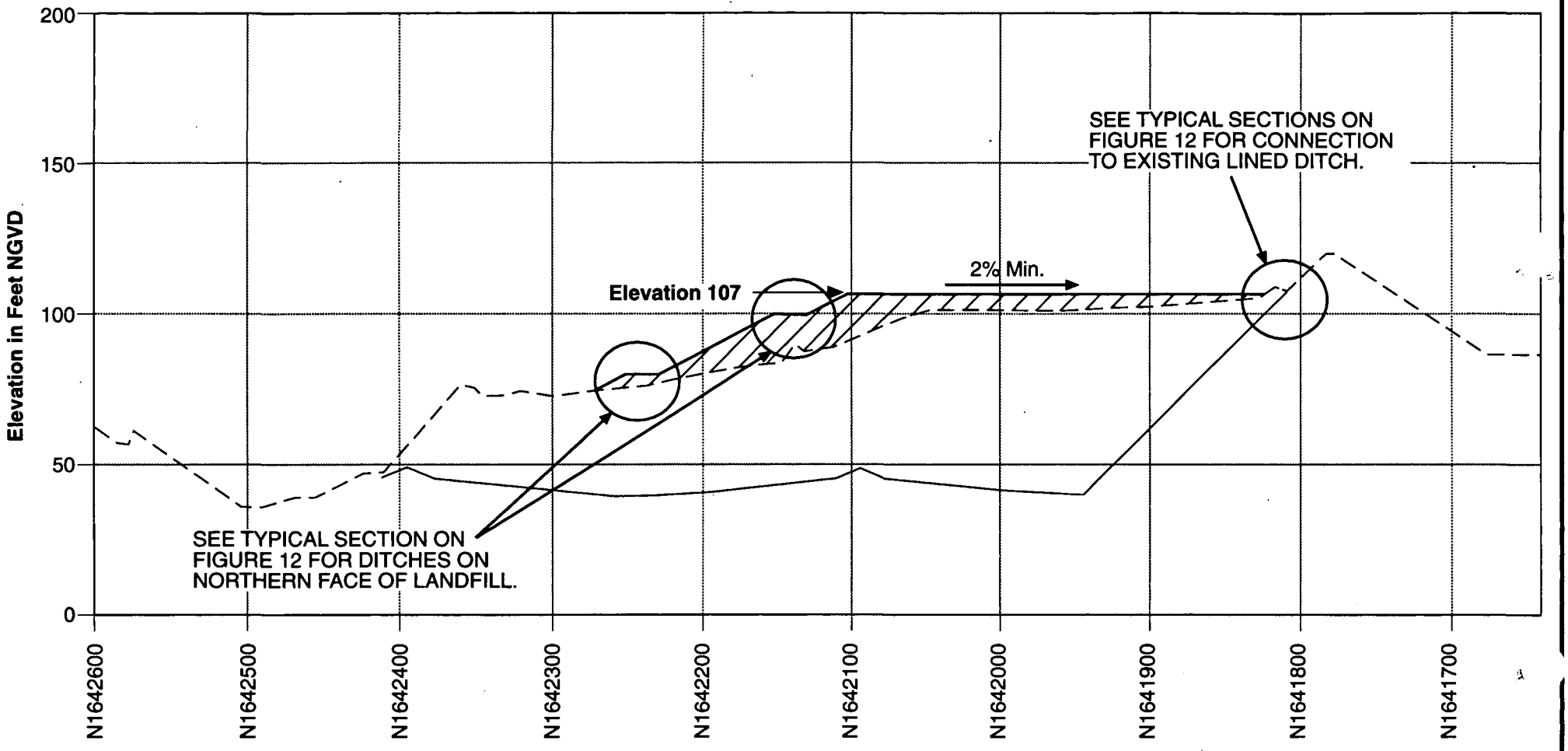
N

Scale in Feet
0 50 100
1" = 100'

NOTES:

1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.

FIGURE 3
1.0 - Year Interval Filling Plan



NOTES:

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Horizontal Scale
1" = 100'
Vertical Scale
1" = 50' NGVD

FIGURE 4
1.0 - Year Interval Filling Section B - B'

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117596.28.01 10/95 dsk 30

Temporary Stormwater Pond

2% MINIMUM
SEE TYPICAL SECTION ON FIGURE 12 FOR DITCHES ON NORTHERN FACE OF LANDFILL

ELEVATION 107

ELEVATION 115

2% Min. (Typ)

INSTALL LINED DITCH AS SHOWN ON TYPICAL SECTION IN FIGURE 12

Permanent Stormwater Pond

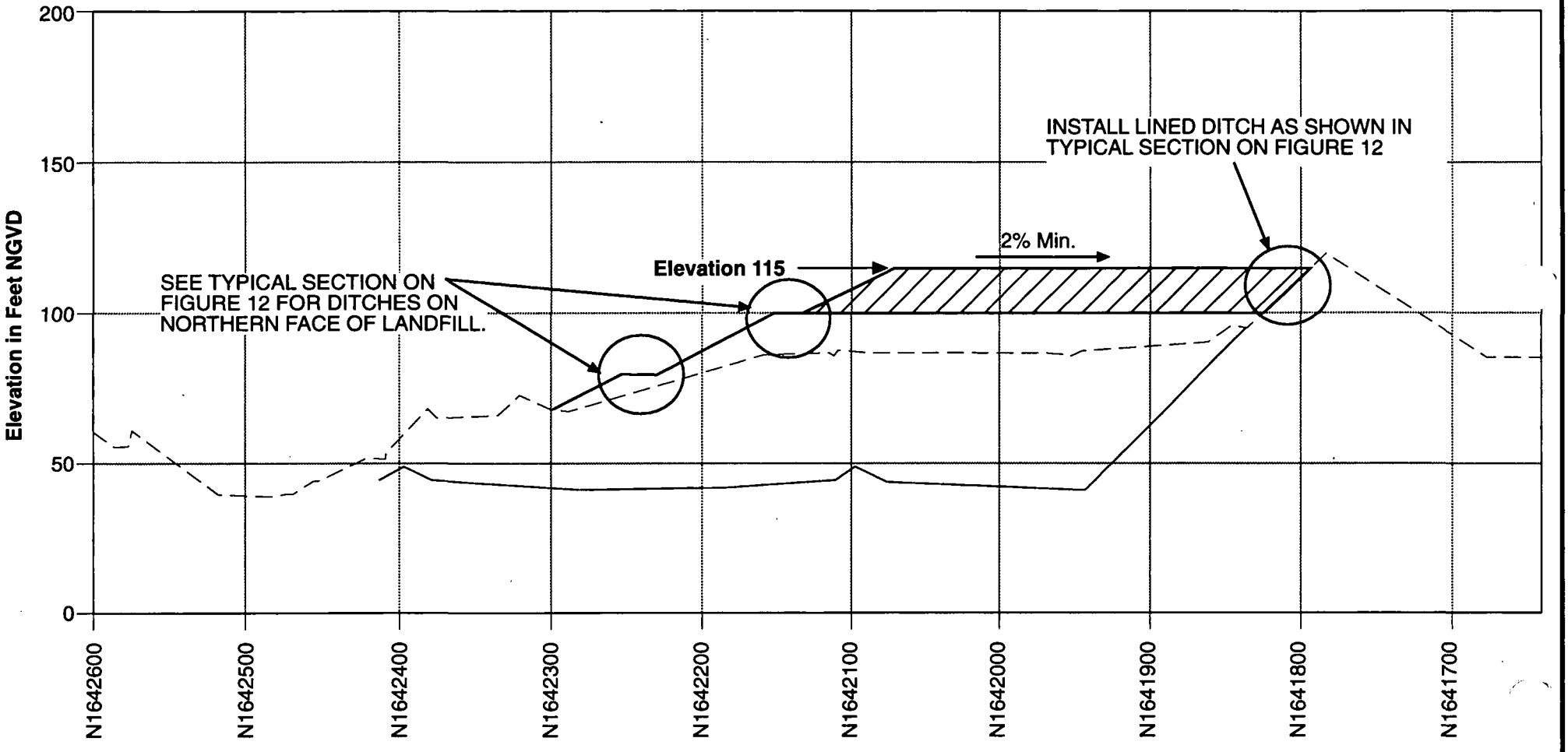
NOTES:

1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.

Scale in Feet
0 50 100
1" = 100'

FIGURE 5
1.5 - Year Interval Filling Plan

CH2MHILL



NOTES:

1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.

Horizontal Scale
1" = 100'
Vertical Scale
1" = 50' NGVD

FIGURE 6

1.5 - Year Interval Filling Section A - A'

CH2MHILL

117598.28.01 10/95 dsk 30

NOTES:

1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.

B

Temporary Stormwater Pond

B'

Permanent Stormwater Pond

2% Min. (Typ.)

ELEVATION 120

ELEVATION 115

INSTALL LINED DITCH AS SHOWN ON TYPICAL SECTION IN FIGURE 12

N 1642500

N 1642000

1641523.38

Scale in Feet

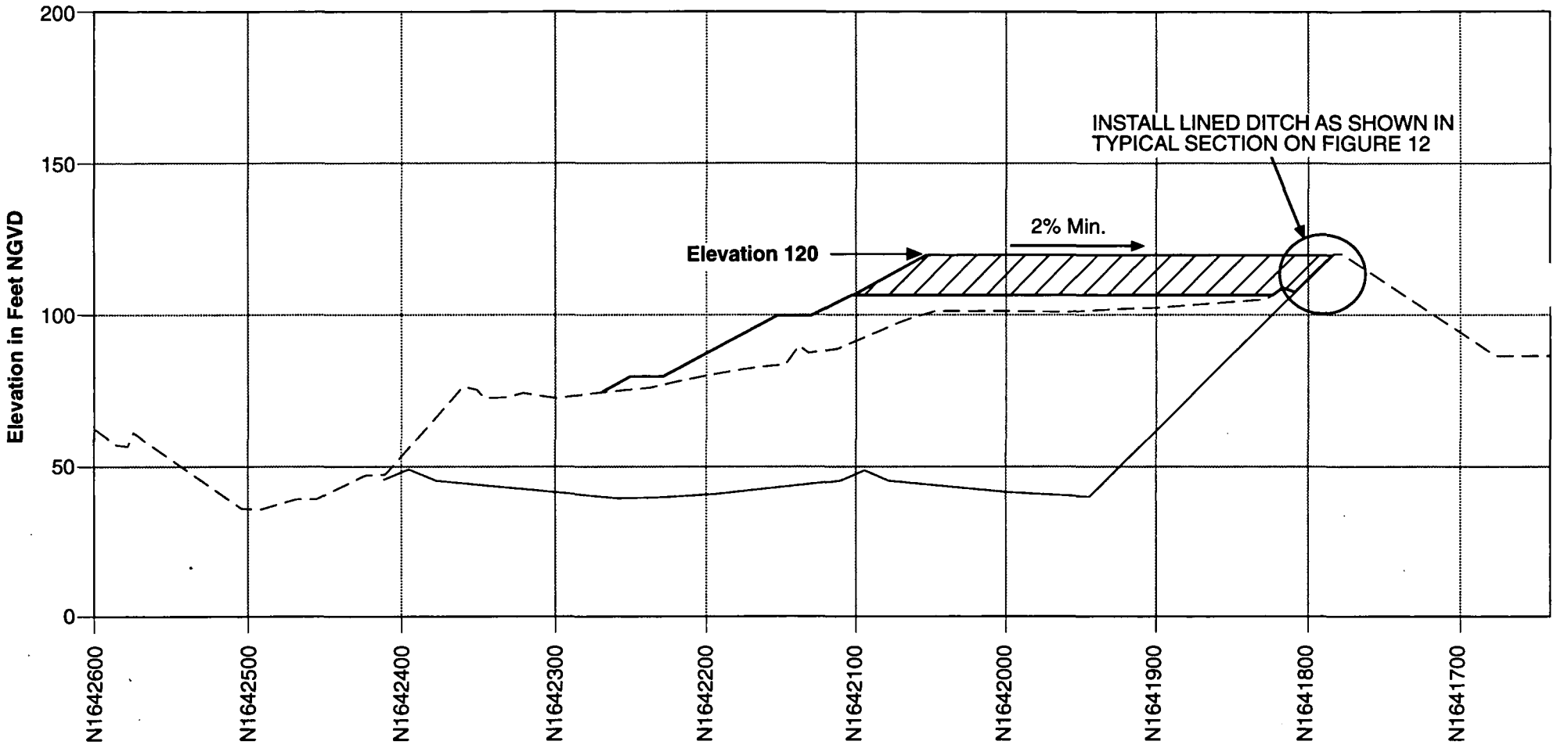
0 50 100

1" = 100'

FIGURE 7

2.0 - Year Interval Filling Plan

CH2MHILL



NOTES:

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Horizontal Scale
1" = 100'
Vertical Scale
1" = 50' NGVD

FIGURE 8

2.0 - Year Interval Filling Section B - B'

CH2MHILL

117596.28.01 10/95 dsk 30

NOTES:

1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.

B

A

Temporary Stormwater Pond

2% MINIMUM
SEE TYPICAL SECTION ON FIGURE 12 FOR DITCHES ON NORTHERN FACE OF LANDFILL

ELEVATION 130.3

B'

Permanent Stormwater Pond

A'

N 1642000

N 1642500

E 5160000

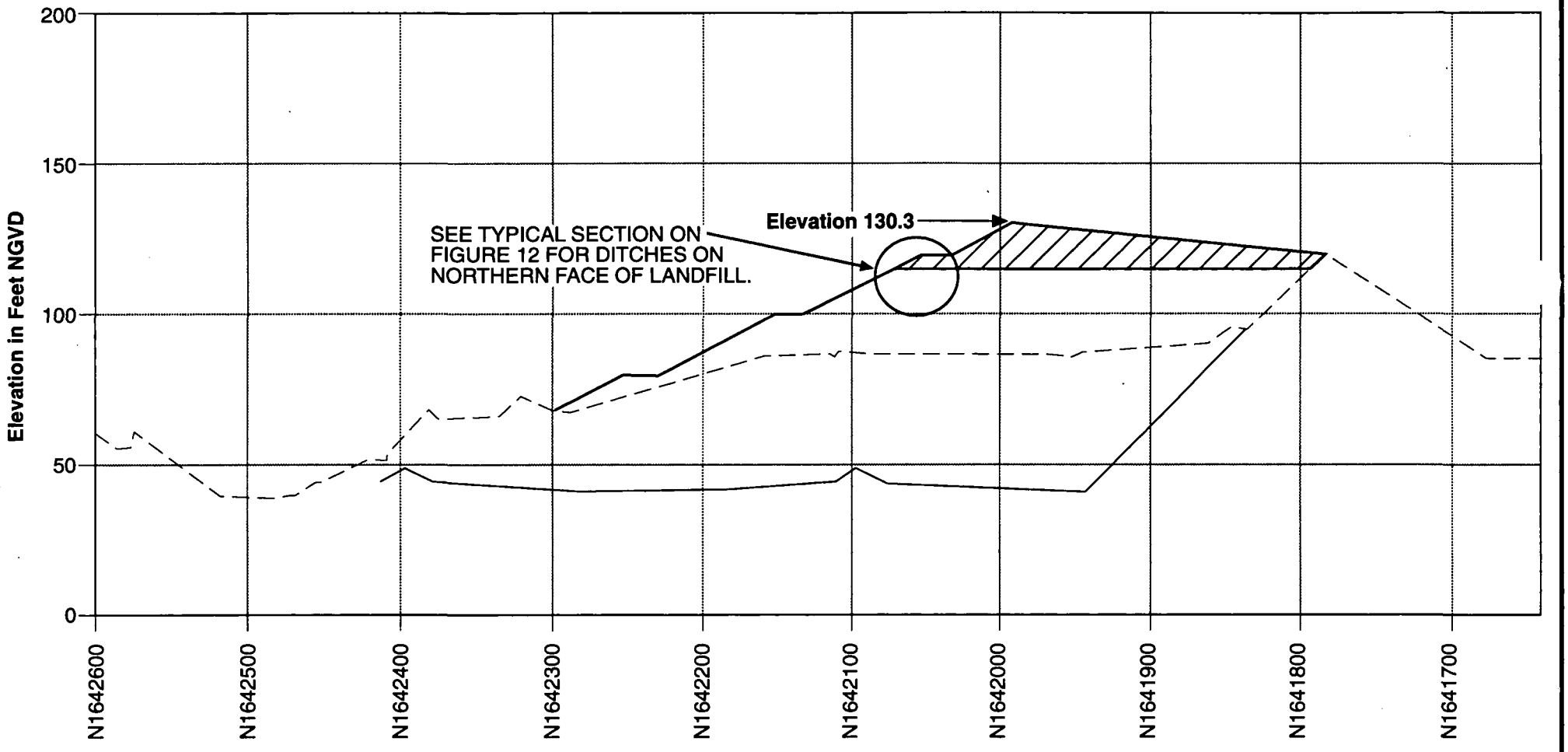
E 5165000

NOTE: Contours Show Final Surface of Intermediate Soil Cover

Scale in Feet
0 50 100
1" = 100'

FIGURE 9
2.5 - Year Interval Filling Plan

CH2M HILL



Horizontal Scale
1" = 100'
Vertical Scale
1" = 50' NGVD

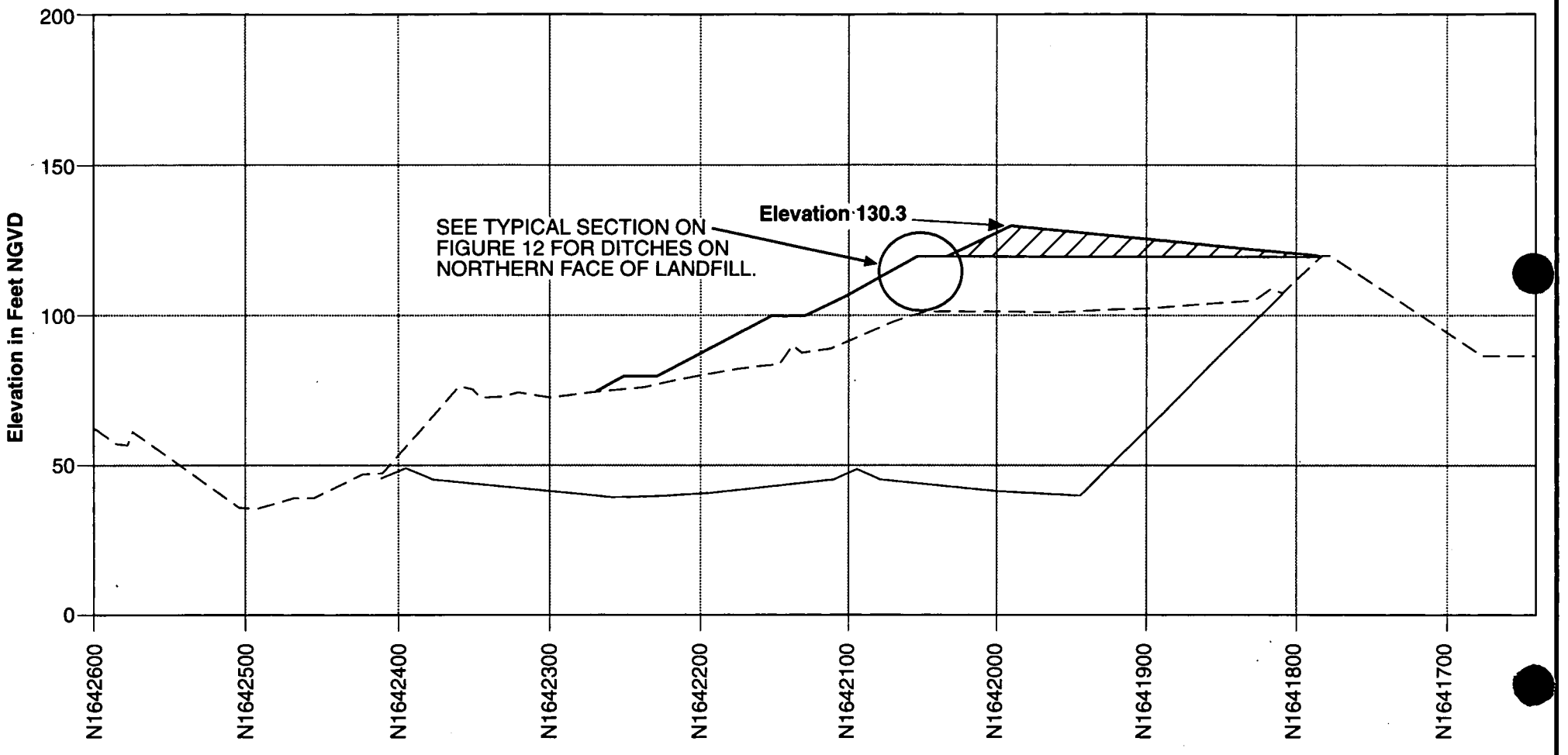
NOTES:

1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.
2. CONTOURS SHOW FINAL SURFACE OF INTERMEDIATE SOIL COVER.

FIGURE 10

2.5 - Year Interval Filling Section A - A'

CH2M HILL



Horizontal Scale
1" = 100'
Vertical Scale
1" = 50' NGVD

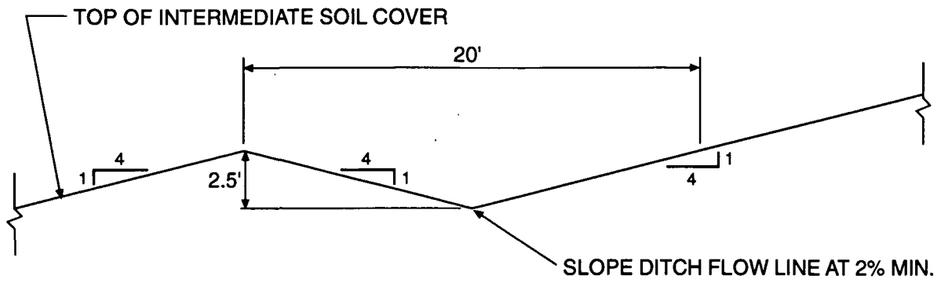
NOTES:

1. PROPOSED GRADES ARE APPROXIMATE ONLY. ACTUAL GRADES WILL DEPEND ON ACTUAL WASTE VOLUMES. GRADES WILL ALSO BE ADJUSTED DURING OPERATIONS TO PROVIDE FOR DITCHES AND SURFACE SLOPES CONSISTENT WITH THE FLOWLINES SHOWN ON THIS DRAWING AND REFERENCED TYPICAL SECTIONS.
2. CONTOURS SHOW FINAL SURFACE OF INTERMEDIATE SOIL COVER.

FIGURE 11

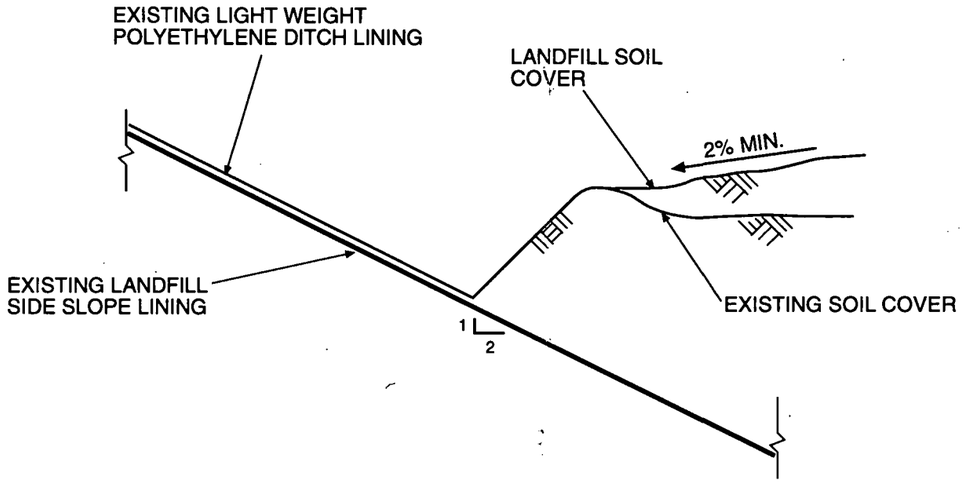
3.0 - Year Interval Filling Section B - B'

CH2M HILL



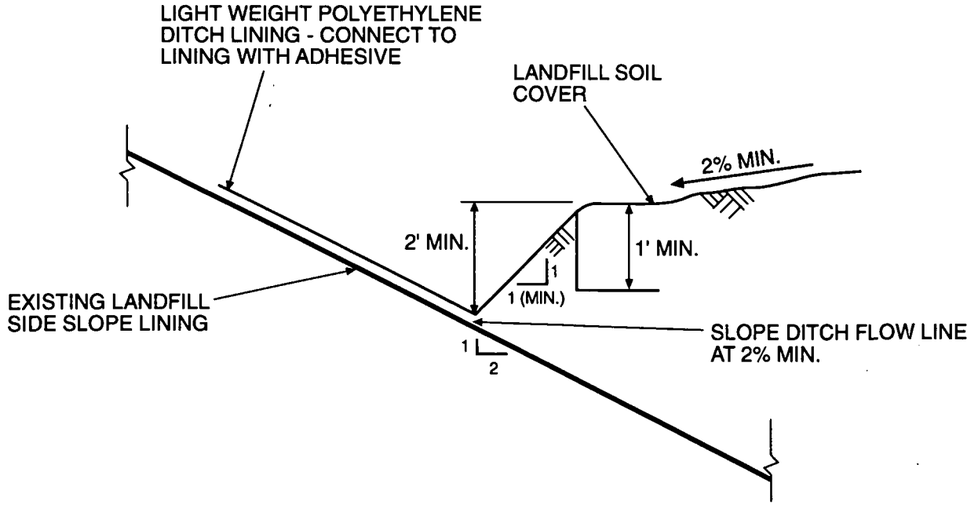
DITCHES ON NORTHERN FACE

NOT TO SCALE



CONNECTION TO EXISTING LINED DITCH

NOT TO SCALE



NEW LINED DITCH

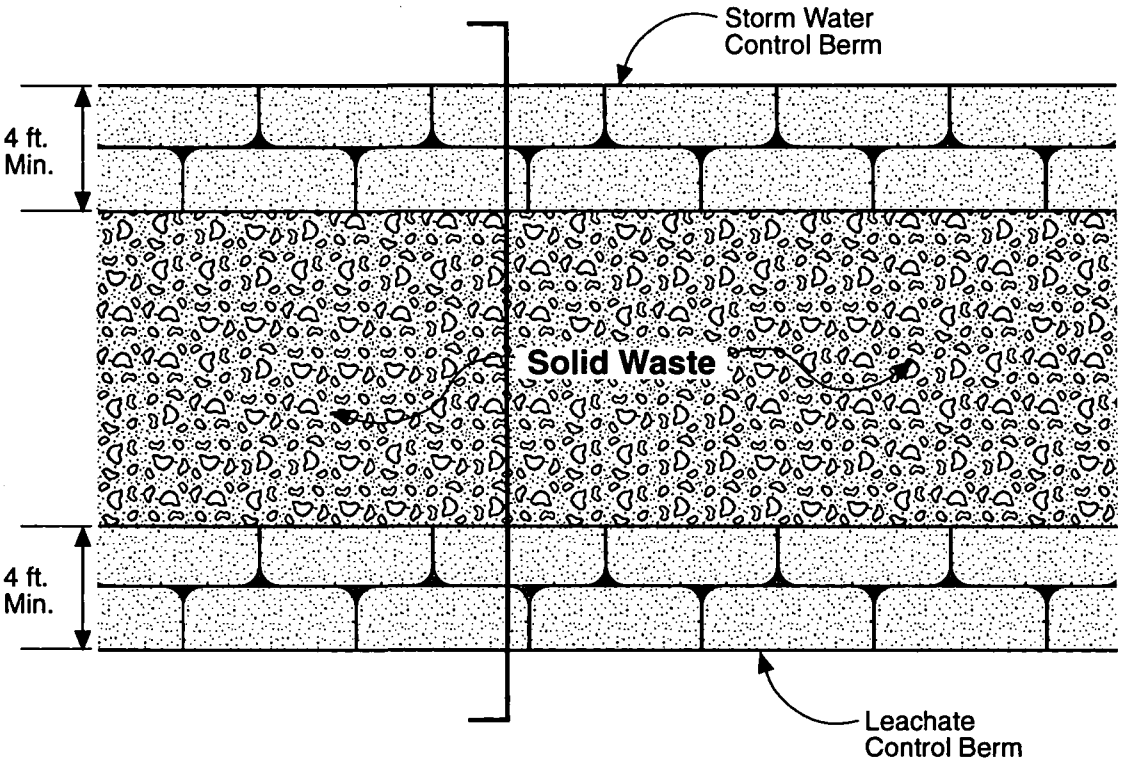
NOT TO SCALE

Figure 12
Typical Sections

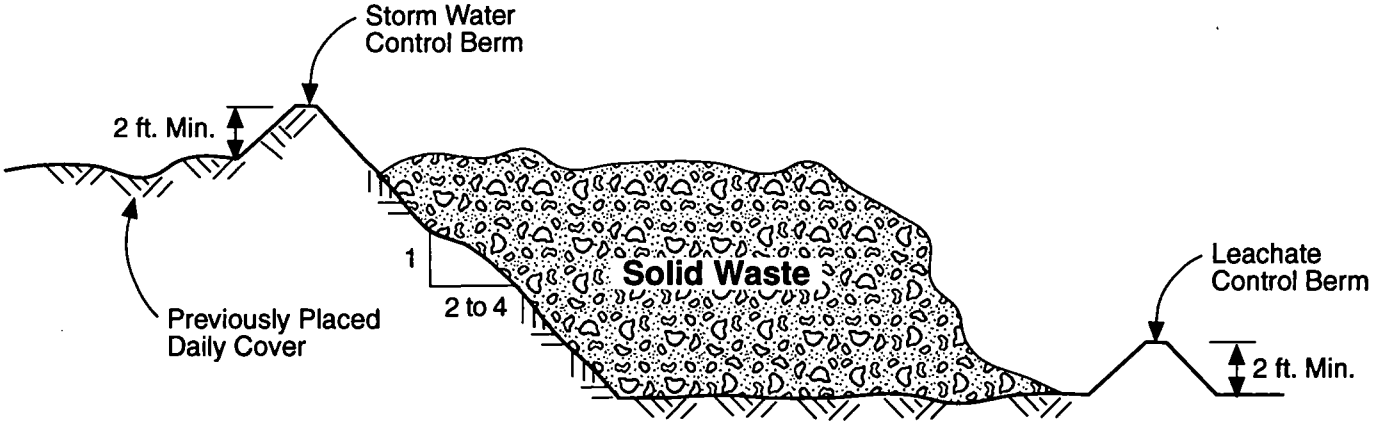
CH2M HILL

Attachment B

Working Face Diagram



Plan
N.T.S.



Section
N.T.S.

Typical Working Face

CH2M HILL

Attachment C

Phase 1 Routine Gas Monitoring Program

Gas Monitoring Program
Phase 1 of the Citrus County Central Landfill

Introduction

Background

This landfill gas (LFG) monitoring program for Phase 1 of the Citrus County Central Landfill has been prepared in accordance with the provisions of Rule 62-701.400(10), FAC. The landfill has a geomembrane bottom lining. Based on experience with other landfills, the geomembrane lining can be expected to serve as an effective barrier and prevent LFG from migrating into the adjacent soils. Therefore LFG migration is not anticipated at this site.

The bottom depth of refuse is approximately 80 feet below ground surface. Groundwater is approximately 100 feet from the surface. The soil at the site is primarily silty and clayey sand.

Landfill Gas Generation

Landfill gas is generated by the bacterial decomposition of organic refuse in an anaerobic environment within a landfill. LFG is typically composed of 55 percent methane and 45 percent carbon dioxide. Landfill gas is dangerous because it is explosive at methane concentrations between 5 and 15 percent, it is an asphyxiant, and it contains trace contaminants that are often malodorous and sometimes toxic.

Landfill Gas Migration

LFG movement occurs primarily due to the pressure gradient produced by the continuous generation of LFG within a landfill. If the LFG is uncollected, it will eventually escape to the atmosphere, either directly through the landfill surface or after migrating laterally through the surrounding soil. Lateral LFG movement is influenced by several factors: the pressure gradient described above, the permeability of the landfill lining and cover, and the permeability of the surrounding soils.

Landfill Gas Monitoring Probes

Landfill gas monitoring probes will be installed on the east and south sides of the facility where the landfill is in close proximity to the property line as shown in Figure 1. A probe will not be installed on the west side of Phase 1 because the closed 60-acre landfill is located between the Phase 1 landfill and the west property boundary. A probe will not be installed on the north side because the north property boundary is approximately 1,700 feet from Phase 1 and future landfill expansion is planned in this area. The probes will be installed in

117596.28.01 10/95 dsk 30

E516000

E515000

E517000

Closed
60-Acre
Landfill

Phase I of the Citrus County Central Landfill

N1642000

Proposed
Leachate Storage
Tank Site

Stormwater Pond

Property Line

N

Scale in Feet
0 50 100
1" = 100'

LEGEND
Proposed Gas
Probe Location

FIGURE 1
Proposed Gas Monitoring Probe Locations

CH2MHILL

borings drilled to a depth which approximates the depth of the refuse (80 feet). The probe will consist of three monitoring zones, one located near the surface, and the second at approximately the midpoint, and the third near the probe bottom.

The "triple completion" probes will be constructed with 1/2 inch diameter PVC pipe which will utilize 10 feet long lengths of slotted PVC pipe at the measuring zones with solid pipe in between and to the surface (Figure 2). The annular space in the slotted zones will be filled with pea gravel and the remaining boring will be filled with soil. A bentonite seal will be installed above the gravel above each zone and at the surface. A vault box will be installed at the surface of each probe to protect the PVC sampling pipes. Labcock sampling valves will be installed at the top of each PVC pipe to allow for a direct connection to the instruments.

Monitoring

The probes will be monitored for concentrations of methane, oxygen, carbon dioxide, and static pressure. Methane concentration will be monitored using an instrument with a percent by volume scale and a lower explosive limit (LEL) scale. The percent scale measures from 1 to 100 percent by volume and the LEL scale measures from 1 to 5 percent by volume (5 percent by volume is equal to 100 percent LEL).

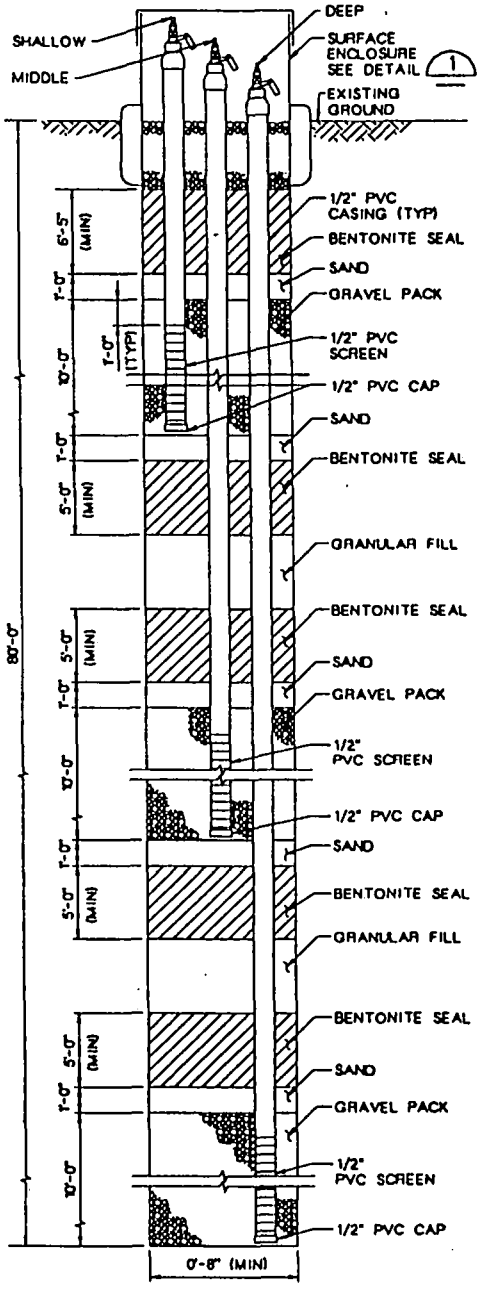
The gas instrument will be calibrated with calibration gas each day before monitoring is performed. The gas instrument will have a water filter upstream of the instrument to protect it from any water which might be pulled into the instrument from the probes.

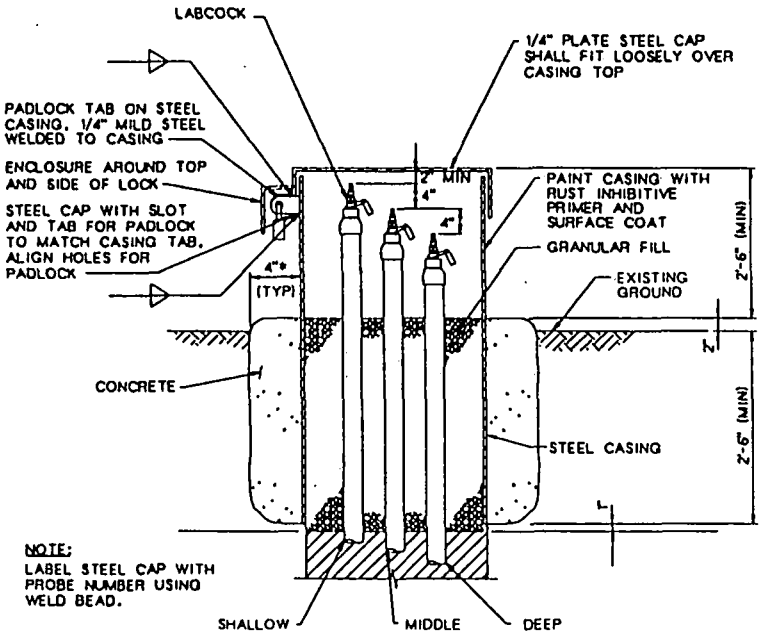
Pressure will be measured prior to the other parameters. The is to first attach the hose to the labcock valve and then open the valve and measure the pressure. Then close the valve and connect the gas instrument and measure the various gas concentrations. The valve should be kept closed when an instrument is not attached.

In addition to gas parameters, the time of day measurements will be taken and the barometric pressure at the beginning and end of the monitoring round will be recorded. The measurement of barometric pressure is important and an accurate, calibrated gauge should be used. Barometric pressures should be measured at the site; readings from remote weather stations are not acceptable.

Any problems encountered during monitoring, observations, or other pertinent information that could impact the interpretation of the data will be recorded. For example, if a probe is full of groundwater or suspected of being so, indicate in comments for the monitoring round.

The inside of all structures at the site will be monitored for methane using the percent scale and the LEL scale. The sampling hose of the instrument will be held above the floor and inserted into any conduit spaces or cracks which could act as conduits for LFG to enter into the structure.





DETAIL 1
NTS

NOTES:

(1) ACTUAL DIMENSIONS WILL DEPEND ON ACTUAL HYDROGEOLOGY ENCOUNTERED DURING DRILLING AND THE CORRESSPONDING ELEVATIONS OF CASING AND SCREEN PLACEMENT.

FIGURE 2
Gas Probe Construction Detail

37888d1.dgn

All monitoring will be performed quarterly and reports will be directly submitted to the Florida Department of Environmental Protection (FDEP).

Any odor complaints due to landfill gas at or beyond the property boundary will be recorded and submitted in the quarterly reports. If methane gas is measured above the LEL in the probes, or above twenty-five percent of the LEL in any structures, the Citrus County will immediately take all necessary steps to ensure protection of human health and notify FDEP immediately.

In addition, within 7 days of detection, a remediation plan will be submitted FDEP for approval. The plan shall be completed within 60 days of detection and shall describe the nature and extent of the problem and the proposed remedy.

Miscellaneous Gas Monitoring

As previously discussed, LFG migration from the Phase 1 Landfill is not anticipated at the site. However, a closed, unlined 60-acre landfill is located on the adjacent property to the west of Phase 1. Therefore, the following miscellaneous gas monitoring will be performed in response to the closed landfill:

- Continuous monitoring of methane gas levels within closed in structures adjacent to the closed landfill, including the Phase 1 scale house and leachate plant electrical building

- Monthly monitoring of methane gas levels inside and under the site administrative offices

Florida Department of Environmental Protection

Southwest District • 3804 Coconut Palm Dr. • Tampa, Florida 33619
Lawton Chiles, Governor 813-744-6100 Virginia Wetherell, Secretary

DATE: 12/20/95

TIME: 2 pm

SUBJECT: HST3D Model for Sodium Transport - Citrus Co Landfill

ATTENDEES

Name	Affiliation	Telephone
Allison Amram	FDEP-Solid Waste	813/744-6100 x336
Susie Metcalfe	Citrus County	352-746-5000
STEVE TSANGARIS	CH2M HILL	(813) 874-0777
Marty Clasen	CH2M Hill	(813) 874-0777
Stevie Roberti	CH2M Hill	(813) 874-0777

TPA-02
04/93

Meeting Agenda: Citrus County Landfill Solute Transport Modeling

Date: December 20, 1995

Time: 2:00 pm

Place: FDEP Tampa

Attendees: Allison Amram/FDEP; Susan Metcalfe/Citrus County; Marty Clasen/CH2M HILL; Steve Tsangaris/CH2M HILL; Steve Roberti/CH2M HILL

1. Introduction, purpose of model — Using TDS $\bar{x}$ = 1200 mg/l will include stormwater pond infiltration

2. Discuss Site Information

- Uneven limestone surface (Attachment A) plan to use 2 zones, - saturated unconsolidated & LS } will have to assign thickness value
- Irregular well completion (Attachment B)
- Water Table:
  - Before perc pond influence; sloping towards West (Attachment C)
  - After Perc Pond; mounding beneath pond (Attachment D)

3. Discuss CH2M HILL's Conceptual Hydrogeologic Model of Site

- Two significant permeability zones:
  - low permeability surficial ~~aquifer~~
  - high permeability limestone ~~aquifer~~
- In absence of outside stress (perc pond), water levels in surficial aquifer reflect water levels in the lower limestone aquifer
- Recharge from the perc pond causes mounding of the water table in the surficial aquifer resulting in a downward gradient toward the limestone aquifer.
- Solute Transport is influenced by Advection and Dispersion, but not by retardation. May be some retardation by clays of Na. Cl should not retard

4. Discuss CH2M HILL's Solute Transport Modeling Plan

- Flow Modeling with Modflow: — to get heads
  - two layer model; low permeability upper layer, high permeability lower layer (Attachment E)
  - westward gradient established by constant head cells in the lower layer to the East and to the West of the landfill (Attachment F)
  - simulation of perc pond and stormwater pond effects by direct recharge to the model cells directly below the ponds (leachate applied @ 33,000 gpd)
  - Adjust vertical and horizontal permeability to approximate the observed pattern of mounding in the surficial aquifer.
- Solute transport modeling with MT3D: ← Method of characteristics
  - Use flowfield determined by MODFLOW simulation
  - Introduce solute to the cells directly below the perc pond

- Observe arrival of solute at downgradient site boundary, both in layer one and layer two at 5, 10, 15, and 20 years.

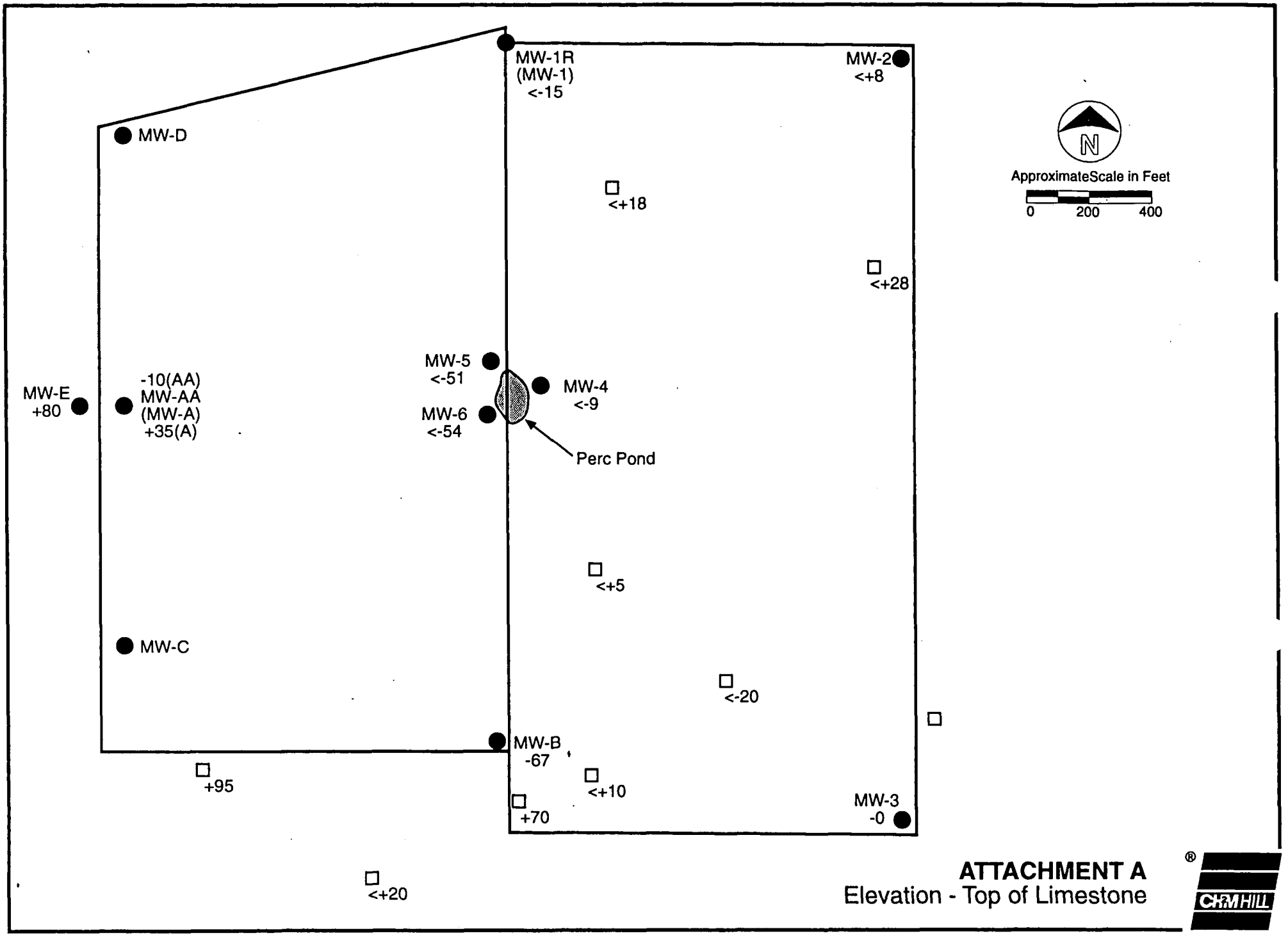
Questions and Further Discussion

Discussed 2 sets of conditions –
① Operating @ 33K gal per day @ 1200 TDS
② Closed @ < " > "

Model will include stormwater areas - they will tell me how they derived those infiltration #s

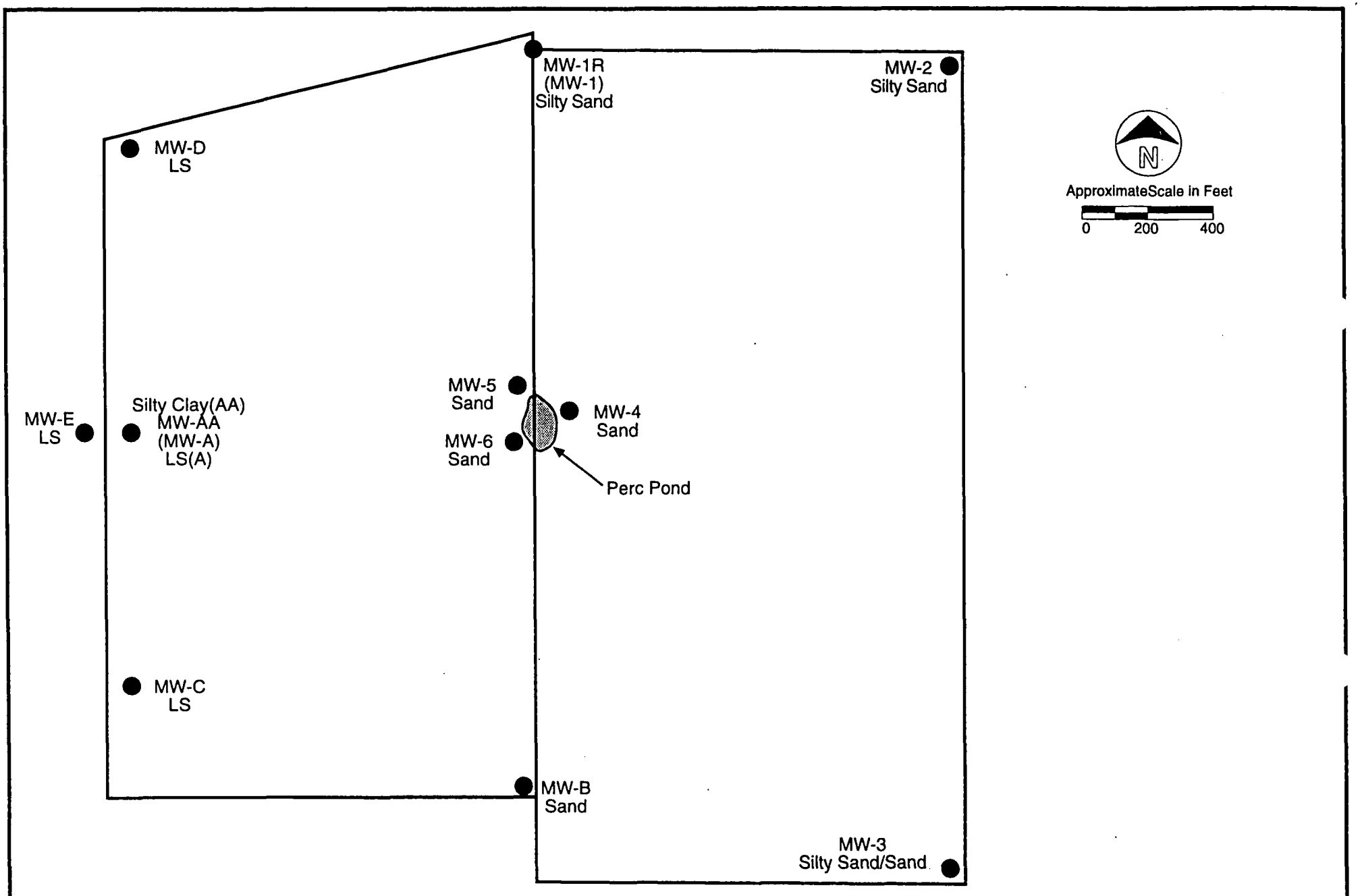
When were perc ponds put in use? Late 1990?

Citrus County Central Landfill Solute Transport Model			
Well No.	Screened Interval (ft msl)	Completion Lithology	Hydraulic Conductivity (ft/d)
MW-1B	(-5 ft to 5 ft)	Silty Sand	0.06 ft/day
MW-2	(11 ft to 26 ft)	Silty Sand	N/A
MW-3	(1 ft to 16 ft)	Silty Sand/Sand	0.37 ft/day
MW-4	(3 ft to 13 ft)	Sand	N/A
MW-5	(1 to 11 ft)	Sand	N/A
MW-6	(-2 ft to 8 ft)	Sand	N/A
MW-AA	(-7 ft to 3 ft)	Silty Clay**	2.83 ft/day
MW-B	(-16 to 4 ft)	Sand	N/A
MW-C	(-84 ft to -77 ft)	Limestone	N/A
MW-D	(-98 ft to -78 ft)	Limestone	548 ft/day
MW-E	(-5 ft to 15 ft)	Limestone	59.7 ft/day
MW-1*	(-12 ft to 3 ft)	Silty Sand	N/A
MW-A*	(-30 ft to 0 ft)	Limestone	N/A
* Abandoned			
** MW-AA boring log lacking in detail. At this same depth, Limestone was found at MW-A.			



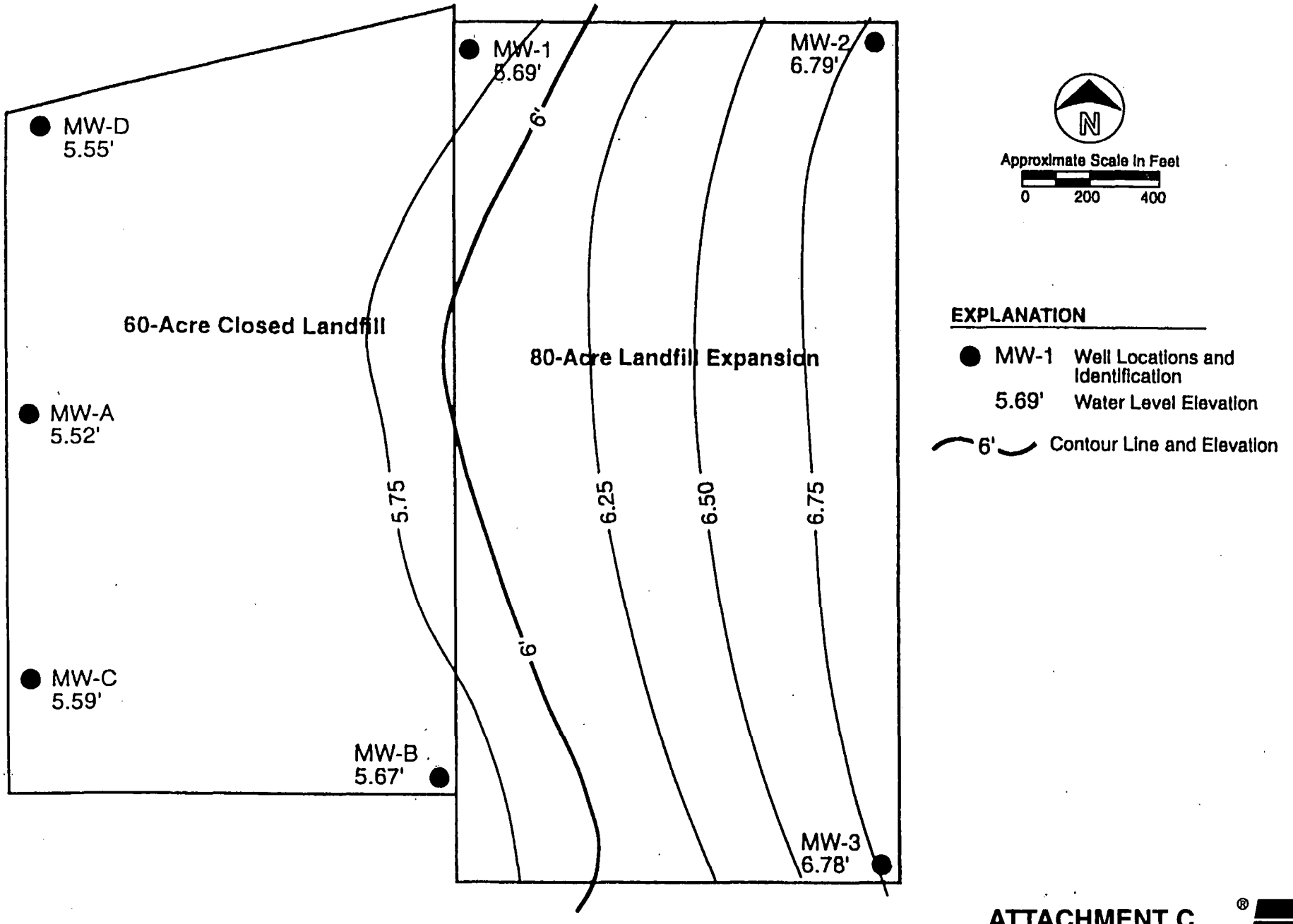
ATTACHMENT A
Elevation - Top of Limestone

CH2MHILL



ATTACHMENT B
Monitor Well Completion Lithology

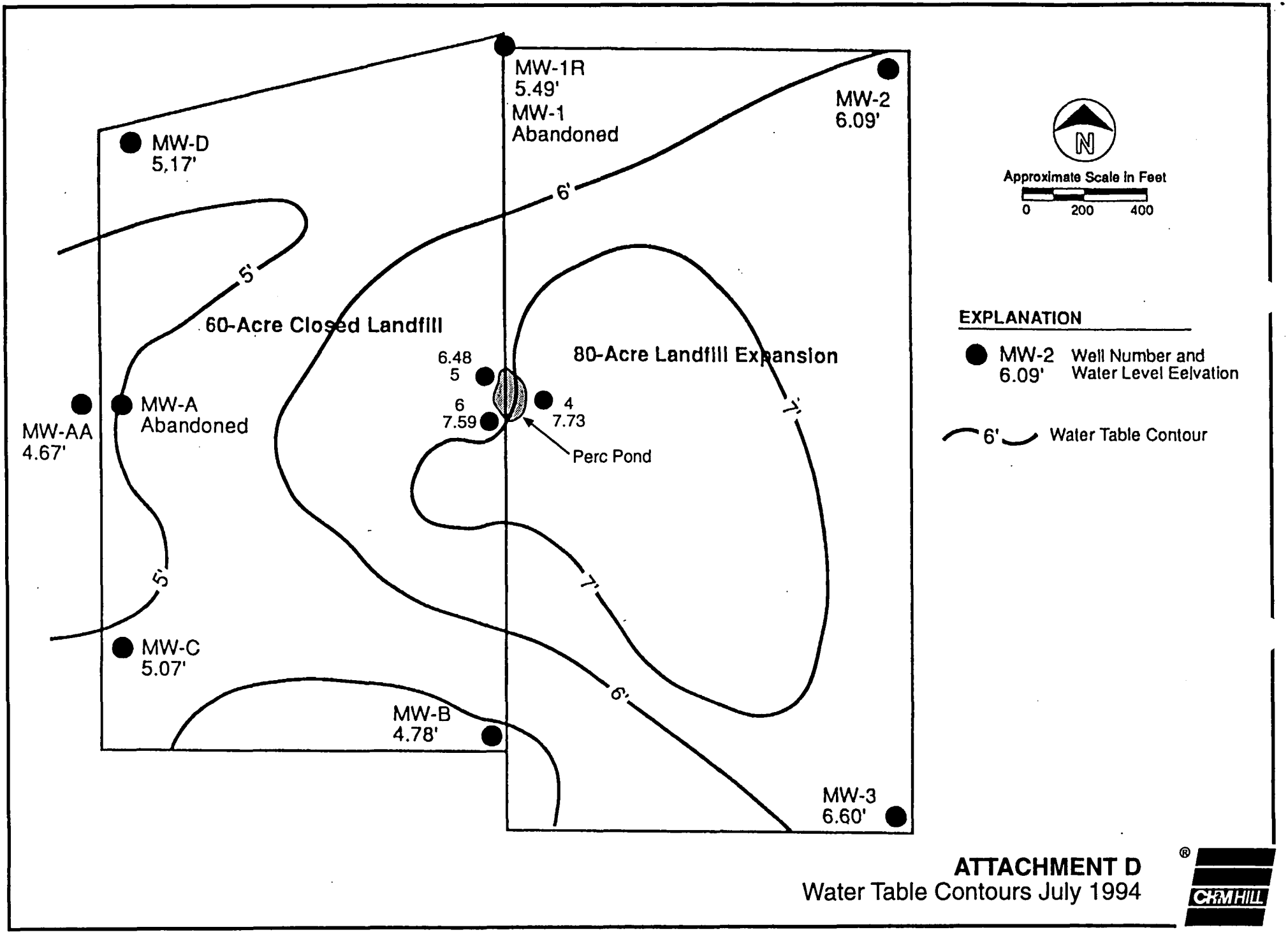
CH2MHILL



ATTACHMENT C
Water Table Map for September 1993

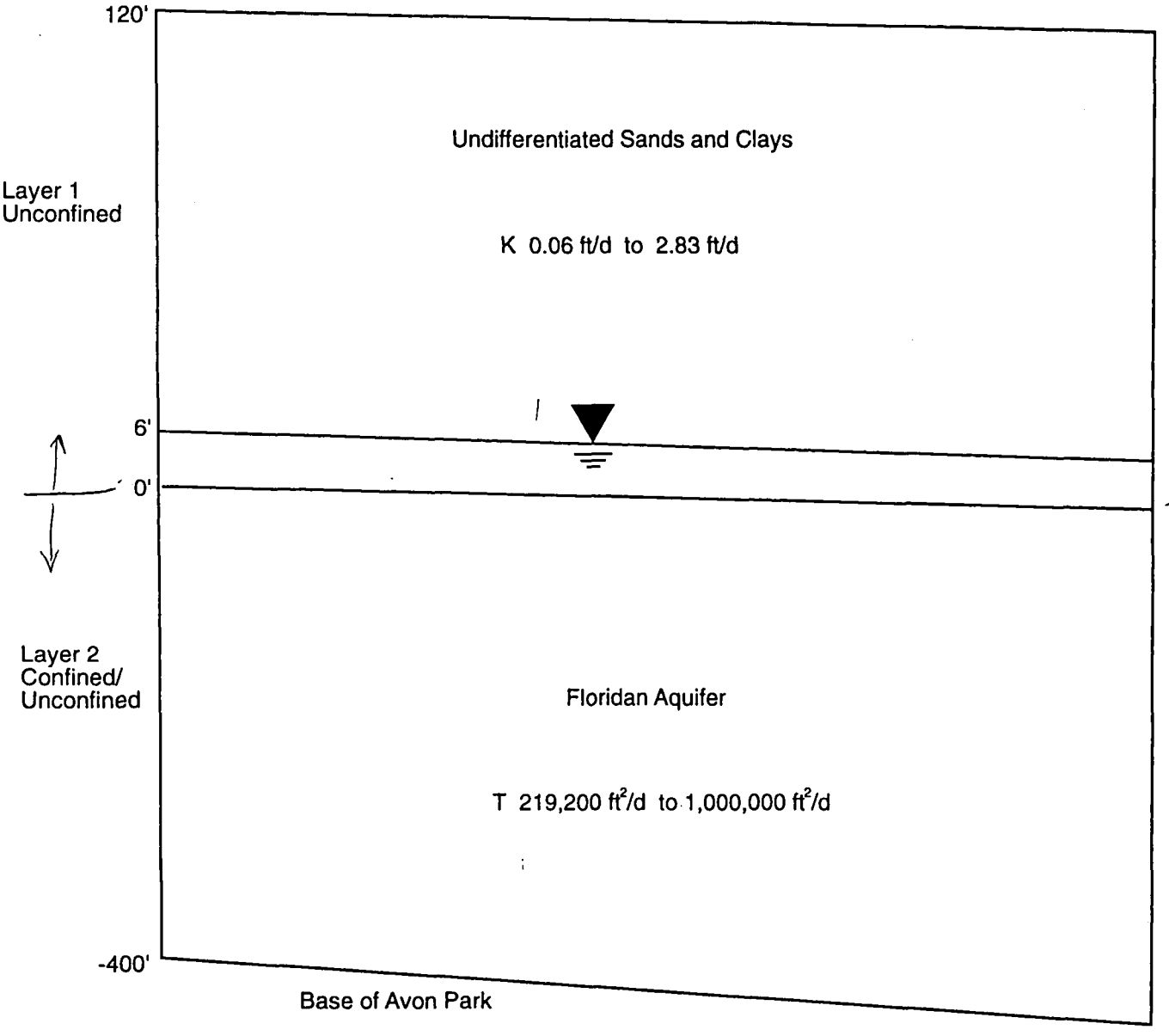
CH2M HILL

pre-petc pond.



ATTACHMENT D
Water Table Contours July 1994

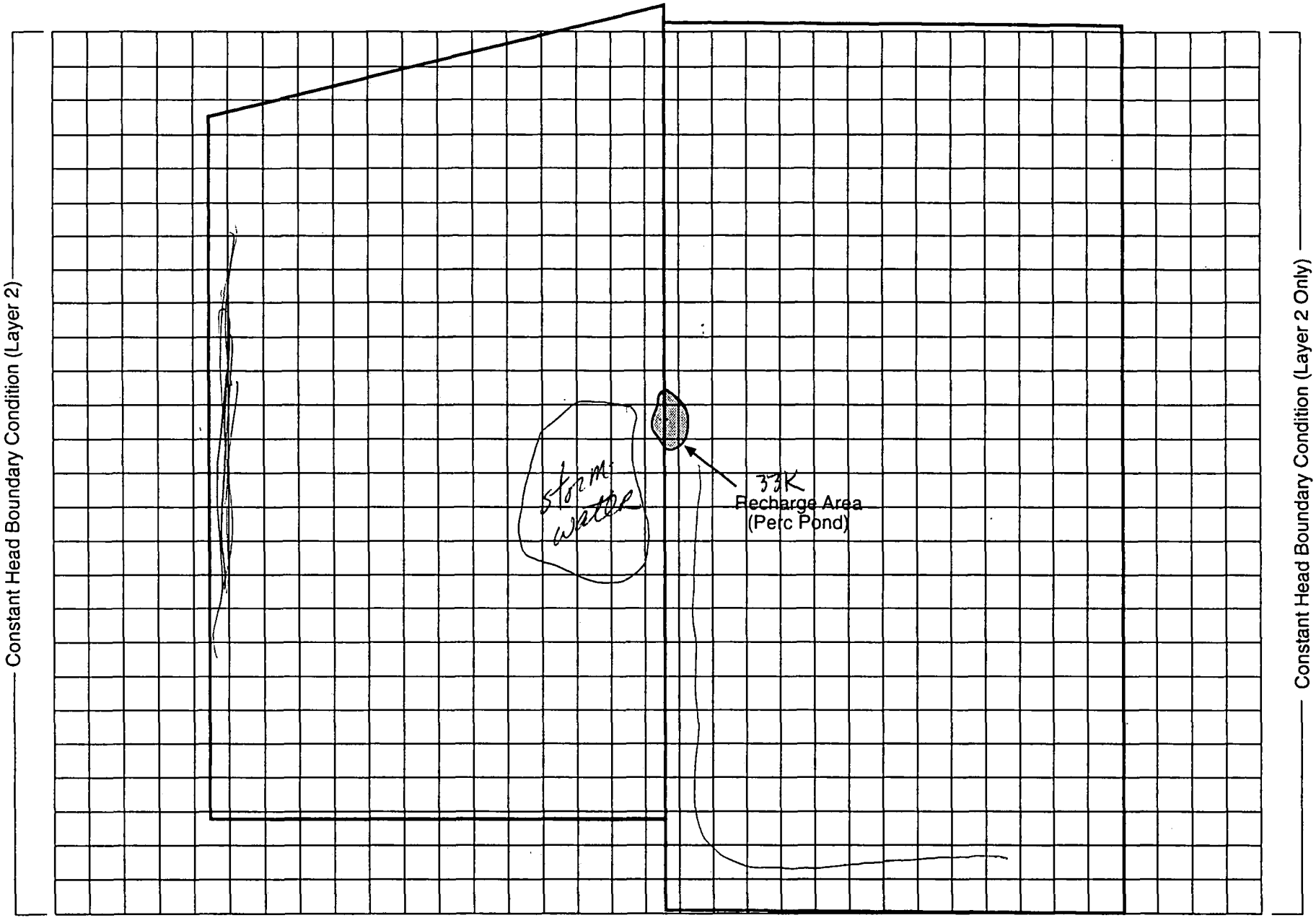
CH2MHILL



- unconsol'd/CS contact will be level surface -- may be deeper than 0

ATTACHMENT E
Conceptual Model Cross Section

CH2MHILL



Will look at other stormwater ponds, recharge

- Plan constant grid

ATTACHMENT F
Tentative Grid Layout

CH2MHILL

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO:
Solid Waste Management
P.O. Box 340
Lecanto, Florida 34460

December 8, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Citrus County Central Landfill
Permit No. SO09-187229
Modification No. 277526

Dear Mr. Ford:

As a followup to our phone conversation this week on the referenced permit modification request, I would like to withdraw the permit modification request and treat each item as described below. Each item is referred to with the same number designation as in your letter of October 10.

1) The permission for construction of the new access road from the Division of Forestry was previously provided. When it is executed, the sublease will be provided for your files. Construction is under way at this time.

2) It is my understanding that since the temporary transfer station will be implemented on a contingency basis only at some unknown time that a permit modification will not be required. Instead, the temporary transfer station will be included as part of the operating permit renewal as a concept for a temporary feature. If and when we need to implement this contingency, we would provide the following information in a request for an approval letter: details as to location, height, access, and time of expected use.

3) Previously resolved in my letter of November 7th.

4) Plan sheets with cross sections for fill sequences and drainage features are being prepared by CH2M HILL as part of the operating permit renewal and will be submitted by December 22.

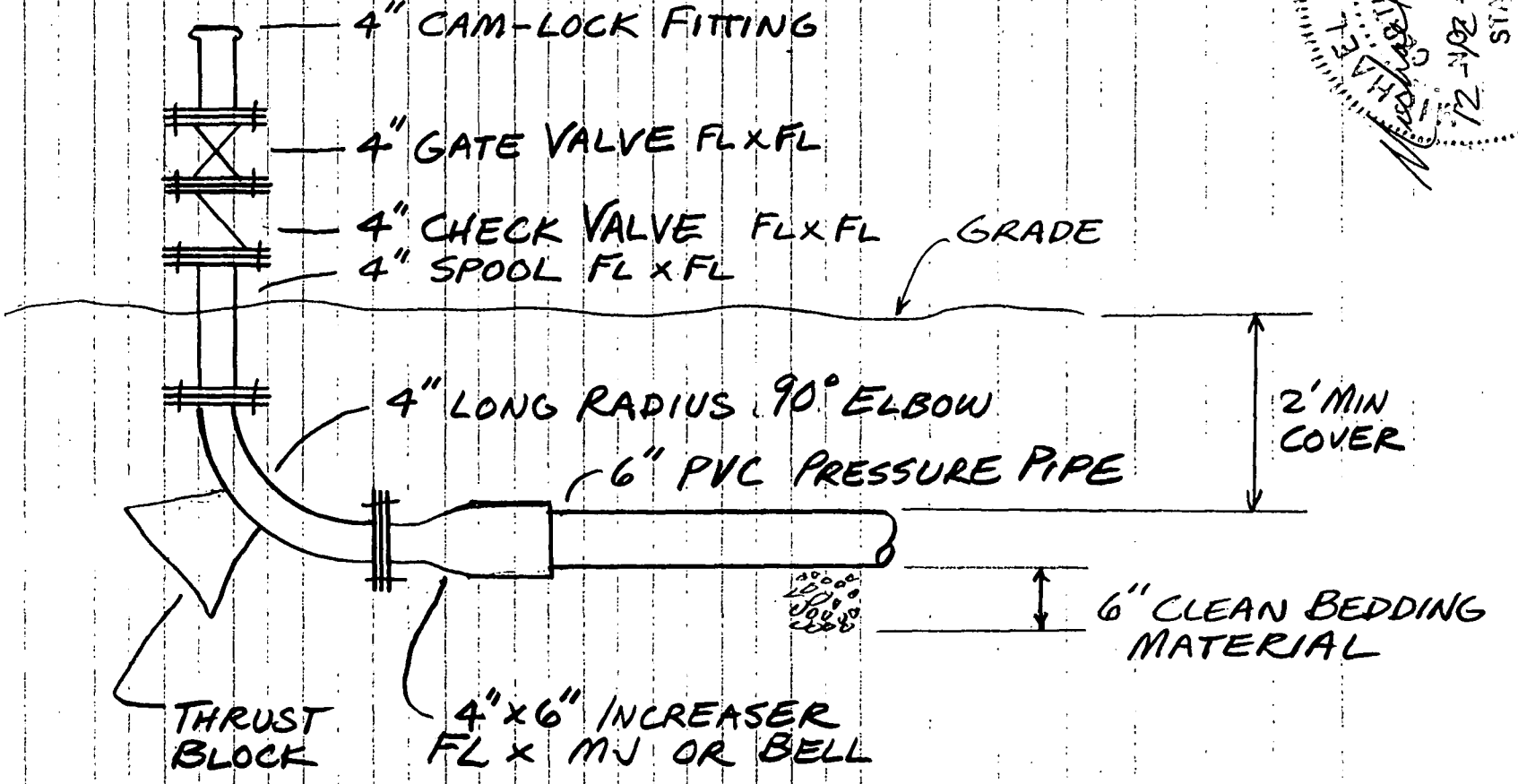
5) The only additional site improvement proposed is the installation of hard piping with a standpipe for transfer of surface leachate to the leachate plant. This will also be a temporary improvement as it will be replaced when construction of Phase 1A is started. Therefore we are requesting a letter of approval for that installation based upon the drawing previously submitted, which was prepared by Michael D. Moore, and the following additional information which is attached. The additional information is a cross-section showing the piping placement down the slope and details for the connections at both ends of the new piping.

Please contact me if you have any further questions before acting on these requests. Thank you.

Yours truly,

Susan J. Metcalfe, Director
Division of Solid Waste Management

cc: Gary Kuhl, Dir. Dept. of Public Works



CONTAMINATED STORMWATER LINE DETAIL

permit file

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(352) 746-4107 FAX (352) 746-1203

RECEIVED
JAN - 8 1996
Department of Environmental Protection
SOUTHWEST DISTRICT
BY _____

REPLY TO:
Solid Waste Management
P.O. Box 340
Lecanto, Florida 34460

January 5, 1996

Allison Amram, P.G.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Citrus County Central Landfill
Permit No.SO09-187229

Dear Ms. Amram:

As we discussed on the phone January 3, the leachate treatment plant is not operating under the limitations set in our permit for nitrate. We believe that cold weather is the cause and that bacterial culture reduction is the problem.

We have discontinued disposal onsite. Beginning today we are trucking treated effluent to the County-owned domestic wastewater plant at Brentwood. The recent average flow rates have been about 6,000 gallons per day. AAA Whites is our contracted hauler. They will use their 6,000 gallon tanker to take one load per day to Brentwood where it will be introduced in the sludge receiving facility and treated before disposal. We will continue with regular onsite treatment and analysis and will forward results to you at such time as the results of analysis indicate the plant is producing effluent with nitrate levels less than 12 mg/l.

We are consulting with ZIMPRO and our Utilities Division to work out the best procedure to return the plant to proper performance.

Three unrelated incidents recently resulted in irregularities in leachate system function. One was a flow meter malfunction. The flow meter from the 80-acre lift station did not work for two days. A small stick was found to have lodged in the meter vanes, which was removed. Performance has been satisfactory since then. The second item was a lift station malfunction. The 7-acre lift station did not pump for two days. The problem was a tripped electrical circuit breaker; the station is back in service. The third was a malfunction of the methanol pumping equipment. The cause was probably the aftermath of an electrical outage. A circuit breaker had tripped and was not noticed for

one day. The pump is back in service. Since the pump normally operates at night, we have installed an elapsed time meter so its functioning can be checked by the operator on a daily basis. In addition we have installed measuring marks on the methanol tank level sight gage which will be checked daily.

Please let me know if you need additional information.

Yours truly,

Susan J. Metcalfe, Director
Division of Solid Waste Management

cc: Gary Kuhl, Dir. Dept. of Public Works
Bob Merkle, Utilities Division

Kim — file

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 12/14/95 Subject Leachate

Time 10:35 Permit No.

County Citrus

M Susie Metcalfe Telephone No.

Representing Citrus

[X] Phoned Me [ ] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

- Leachate sampling - new location not ready Will sample at old spot

- Leachate plant - NO_3^- >12 mg/l; had a high NH_4^+ one week influent Nov 30th week 500 NH_4^+ → 15 NO_3^- effluent

- 80-acre cell flowmeter has been down 5-1/2 days - will be replacing it w/ their spare this afternoon

(continue on another sheet, if necessary)

Signature Allison Amram

Title PG I

PA-01
1/93
hjs

Citrus SO
permit #16

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 12/6/95 Subject Citrus Op. Permit - Sodium Transport Model

Time 1:50 Permit No.

County Citrus

M Marty Claeys Telephone No.

Representing CH2M Hill

[X] Phoned Me [ ] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

Steve Roberti - modeler - in Gainesville

Dec 20 - 2pm - telecon/ to discuss Na - transport modeling He will have Steve send everyone figures

Well Completion figure - Will casing length 15 or 17'?

(continue on another sheet, if necessary)

Signature A Ammar

Title PG

PA-01
1/93
hjs

SO Permit file

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 11-20-95 Subject Leachate Sampling Location

Time 1:45 Permit No.

County Citrus

M Susie Metcalfe Telephone No. 904/746-5000

Representing Citrus Co

[ ] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting Discussed leachate sampling point - currently sample from the open top of Tank I not leachate from both old & operating cells. I. has already been pumped. Master lift station - can sample from that once installed - will receive leachate from operating cell and future cells. content to closure just published - this lift station should be built + operational in 6 months

(continue on another sheet, if necessary)

Signature Allison Amram

Title PGI

PA-01
1/93
hjs

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

November 20, 1995

Ms. Susan Metcalfe, P.G.
Citrus County
Solid Waste Management
Post Office Box 340
Lecanto, FL 34460-0340

Re: Central Landfill, Phase 1 Operation
Pending Permit No.: SO09-274381, Citrus County

Dear Ms. Metcalfe:

This is to acknowledge receipt of the additional information received October 27, 1995 in support of your permit application to operate the solid waste management facility referred to as the Central Landfill.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit remains incomplete. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the solid waste application [Chapter 62-701, Florida Administrative Code (F.A.C.)]. Please provide:

1. Revised drawings for sequence of filling with access roads across previously filled areas which show top and side slopes that promote drainage and allow runoff to enter existing and proposed stormwater conveyances.

2. Typical construction details for berms used to minimize leachate generation and the mixing of stormwater with leachate.

3. A performance evaluation of the existing LCRS piping based on an inspection and verification that the LCRS system is not clogged and is functioning properly. A procedure to clean the LCRS system shall be included in the performance evaluation.

4. Revised gas monitoring program that includes all on-site gas monitoring and protective measures which are necessary in response to gas migration from the closed landfill.

5. Typical construction details for each type of temporary and permanent stormwater conveyance for above and below grade filling or a specific reference for each detail previously submitted.

6. A list of all site improvements which have not been completed including but not limited to the proposed temporary transfer station, hard piping for leachate, and stormwater conveyances, and a description of all related impacts from each on the proposed operation.

7. Please provide your response to Ms. Allison Amram's concerns in her November 20, 1995 memorandum attached. You may contact Ms. Amram at (813) 744-6100, extension 336.

Please provide all responses that relate to engineering required for operation, signed and sealed by a professional engineer. If some information has been previously submitted, please reference it specifically rather than resubmit.

"NOTICE! Pursuant to the provisions of Section 120.600, F.S. and Chapter 62-12.070(5), F.A.C., if the Department does not receive a complete response to this request for information within 30 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you received this letter, responding to all of the information requests and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of a timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant may reapply as soon as the requested information is available."

You are requested to submit your response to this letter as one complete package. On all future correspondence to the Department, please include Robert Butera on distribution. If there are points which must be discussed and resolved, please contact me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.
Solid Waste Section
Division of Waste Management

KBF/ab
Attachment

cc: Gary Kuhl, P.E., Citrus County Public Works
Gary Panozzo, P.E., CH2M Hill
Robert Butera, P.E., FDEP Tampa
Allison Amram, P.G., FDEP Tampa

Florida Department of

Memorandum — Environmental Protection

TO: Kim Ford, P.E.

FROM: Allison Amram, P.G.

SUBJECT: Citrus County Central Landfill
Operation Permit Renewal, Pending Permit No. SO09-274381

DATE: November 20, 1995

CC: Bob Butera, P.E.

==========

I have reviewed the Citrus Central Landfill permit renewal application response submittals dated September 18, 1995 and October 16, 1995 for water quality monitoring concerns. The following comments are referenced by Section of the Groundwater Monitoring Plan, and numbers correspond to the comment numbers in the August 15, 1995 permit incompleteness memorandum.

1. Section 3.6.2.2 The County's plans for revising the Zone of Discharge (ZOD) for the leachate effluent percolation ponds stated in the October 16, 1995 letter to the FDEP are acceptable. The ZOD for these ponds will be the same as the ZOD for the on-site landfills. This is acceptable due to the location of the landfill adjacent to the ponds on the downgradient edge. The sodium solute/transport model to be submitted to the FDEP in February 1996 will evaluate the future use of the ponds based on potential sodium impacts to the groundwater. This issue will be addressed at that time. The improvements to the leachate treatment system appear to have significantly reduced the nitrate concentrations in the leachate effluent, but nitrate concentrations will continue to be monitored in intermediate detection well MW-6 near the disposal ponds.

2. Section 4.1 Prior to collecting field-filtered groundwater samples, the FDEP must approve the filtering. A site-specific request, following the criteria in Department's Technical Document Determining Representative Ground Water Samples, Filtered or Unfiltered, dated January 1994 is necessary to obtain approval. These criteria are listed in Section III, Demonstrations. From prior submittals, it appears that the permittee has adequately addressed all criteria except No. 3 and 6. Number 3 requires a sealed request for filtering and certification of proper well construction, and number 6 requires submittal of both filtered and unfiltered groundwater samples for comparison. Please note that only metals and radionuclides groundwater samples may be field-filtered, and only if the field turbidity of the raw groundwater sample is measured to be more that 5 NTUs.

3. Section 4.2 All site groundwater monitoring activities will be incorporated into the landfill's operational permit, and deleted from the long-term care permit.

4. Section 4.2(7) No response required.

5. Section 4.4 After discussion with Citrus County (Susan Metcalfe, P.G.) it was agreed that leachate sampling shall take place at the Master Lift Station, to be constructed and operational in approximately 6 months. Until the lift station is operational, leachate will be sampled from the inlet to Tank 2.

6. Sections 4.5.1 and 4.5.3 The Department will require the new site wells to be sampled initially for all parameters listed in F.A.C. Rule 62-701.510(8)(a) and (d), and then semi-annually for the parameters listed in F.A.C. Rule 62-701.510(8)(a). The water quality monitoring plan states that the wells will be sampled semi-annually for the parameters listed in F.A.C. Rule 62-701.510(8)(a) and (d), which is not required.

7. Section 4.7(2) This comment has been adequately addressed.

If the applicant should have any questions concerning these comments, they may contact me directly at 813/744-6100, ext. 336.

aa

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

Ms. Susan J. Metcalfe, P.G., Director
Citrus County Solid Waste Division
PO Box 340
Lecanto, Fl. 34460-0340

November 16, 1995

RE: Citrus County Landfill Financial Assurance Cost Estimates
Permit Nos.: SO09-187229 and SF09-211030, Citrus County

Dear Ms. Metcalfe:

This letter is to acknowledge receipt of the revised estimates dated October 2, 1995 submitted by CH2M Hill, Inc. in support of cost estimates originally dated August 31, 1995, for closure and long-term care of the Citrus County Landfill and related facilities. The cost estimates, as revised October 2, 1995, are **APPROVED.** Since the County utilizes an escrow account, the next annual cost adjustment statement (updated estimates) shall be submitted no later than August 30, 1996.

A copy of these estimates will be forwarded to Mr. Fred Wick, Solid Waste Section, FDEP, 2600 Blair Stone Road, Tallahassee, Florida 32399-2407. Please work with him directly to assess the facility's compliance with the funding mechanism requirements of FAC 62-701.630.

If you have any questions, you may contact me at (813) 744-6100 ext. 386.

Sincerely,

Susan J. Pelz, E.I.
Solid Waste Section
Division of Waste Management

sjp
cc: R.J. Bruner III, P.E., CH2M Hill, 7201 NW 11th Place, Gainesville, Fl. 32605
Gary Kuhl, P.E., Director, Citrus Co. Dept. of Public Works
Fred Wick, FDEP, Tallahassee, w/attachment
Robert Butera, P.E., FDEP Tampa
Steve Morgan, FDEP Tampa
Kim Ford, P.E., FDEP Tampa

CH2M HILL TRANSMITTAL

TO: Solid Waste Section-FDEP
3804 Coconut Palm Drive
Tampa, FL 33619

FROM: John J. Wood, P.E.
CH2M HILL
800 Fairway Drive, Suite 350
Deerfield Beach, FL 33441

ATTN: Kim B. Ford

DATE: November 14, 1995

RE: Citrus County - Temporary Transfer Station

PROJECT NUMBER:

WE ARE SENDING YOU:

- ♦ ATTACHED — UNDER SEPARATE COVER VIA

SHOP DRAWINGS | DOCUMENTS | TRACINGS

PRINTS | SPECIFICATIONS | CATALOGS

COPY OF LETTER | OTHER:

QUANTITY	DESCRIPTION
1	Information pertaining to Temporary Transfer Station

IF MATERIAL RECEIVED IS NOT AS LISTED, PLEASE NOTIFY US AT ONCE

REMARKS:

COPY TO:

S. Metcalfe/Citrus County

John J. Wood, P.E.
CH2M HILL
800 Fairway Drive, Suite 350
Deerfield Beach, FL 33441

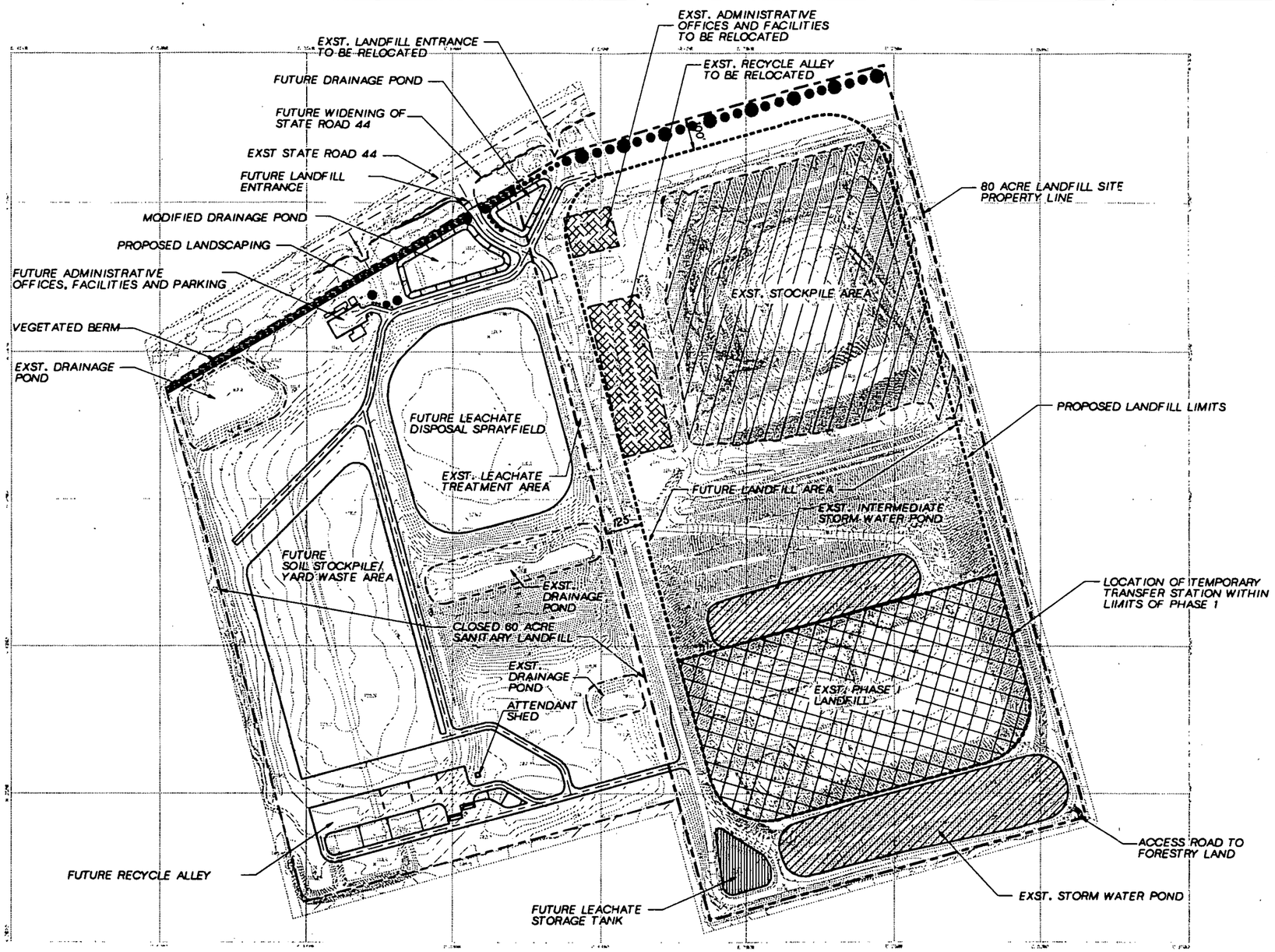
Voice: 305/426-4008 **FAX: 305/698-6010**

Temporary Transfer Station

Citrus County will implement a temporary transfer station ~~if the existing landfill~~ phase (Phase 1) reaches capacity prior to implementation of replacement capacity. This temporary transfer station will be located on top of the existing lined landfill (Figure 1–Site Plan).

The transfer station will be constructed as a split-grade facility as shown on Figures 2 and 3. Waste collection trucks will unload on the upper level. A front loader will lift the off-loaded waste and place into transfer vehicle located on the lower level. The transfer trucks will be weighed prior to leaving the site to ensure that they are legal for over-the-road transport.

Crushed concrete and asphalt will be used as an operating surface. This provides an area for trucks to unload. Drainage will be provided by sloping the area away from the dump area to a perimeter berm. This liquid will either be allowed to percolate into waste or be collected. Collected liquid will be pumped to the leachate treatment facility. Precipitation that falls outside the perimeter berm will be managed as stormwater . Litter fences will be placed around the facility to reduce the potential for blowing litter.



BASE MAPPING PREPARED BY:
KUCERA INTERNATIONAL - INC.
AERIAL PHOTOGRAPHY TAKEN 04-01-94

FIGURE 1
SITE MASTER PLAN

CITRUS COUNTY
CENTRAL LANDFILL
MASTER PLAN

DSGN	A. LACSAMANA, G.L. DELRIO
DR	G.L. DELRIO
CHK	A. LACSAMANA
APVD	JOHN WOOD

NO.	DATE	REVISION	BY	APVD
1	10/20/95	REVISED PER FORESTRY LEASE REQUEST	GLD	JJW

SHEET
DWG NO. C-1
DATE 10-21-95
PROJ NO. FLE 38450.14

PRELIMINARY

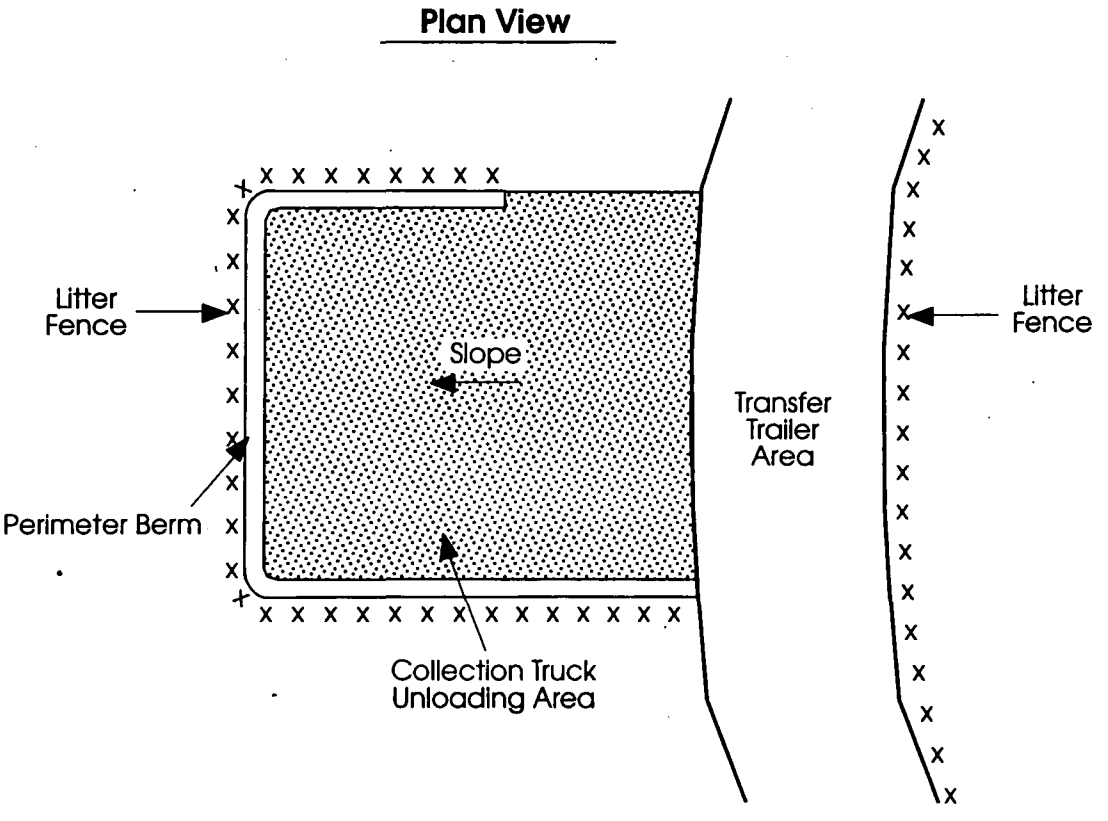


Figure 2. Plan View

Cross Section

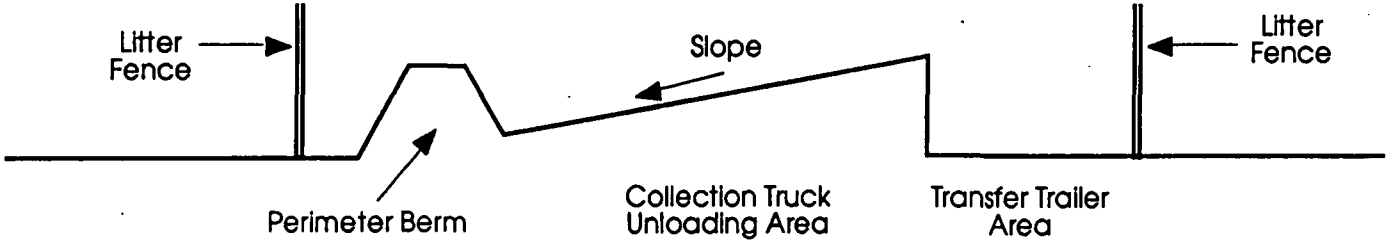


Figure 3. Cross-Section

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO: **Solid Waste Management**
P.O. Box 340
Lecanto, FL 34460

November 7, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

D.E.P.
NOV 13 1995
TAMPA

Re: Citrus County Central Landfill
Modification No. 277526
Permit No. SO09-187229

Dear Mr. Ford:

In response to your letter dated October 10 concerning the request for minor permit modifications to the referenced permit indicating incompleteness of the application, we offer the following responses. Your request is shown in bold type followed by our response.

1. Please provide proof of ownership or lease agreement for the old 60-acre site.
Discussion of the status of the lease was provided in letter dated October 27. When the lease is executed, a copy will be provided to your office. Thank you for attention to the entrance road realignment project as a separate item.

2. Please provide drawings and narrative for the temporary transfer station (Attachment C) as indicated in you September 14, 1995 letter.
That material was provided directly by CH2M HILL on two occasions.

3. Please describe how the County intends to comply with the above-ground closure criteria for the north slope which "shall not be steeper than three feet horizontal to one foot vertical rise" pursuant to F.A.C. 62-701.600(5)(e).
Review of the cited reference in the rule reveals that it applies to final closure side slope design for above ground units. The north slope of Phase 1 is below ground and is an intermediate slope. Therefore this portion of the rule is not applicable. Our previous submittal provided stablility calculations. Citrus County intends to establish vegetation on this intermediate slope within the next year to further stabilize the slope. This slope will be filled over at a more gradual slope after Phase 1A is constructed.

(4) Please provide plan sheets with cross-sections for Phase 1 operation.
Two copies of the permit drawing set dated September 1988 and the record drawing (construction drawing) set dated March 1989 by Post, Buckley, Schuh & Jernigan were provided at your visit to our site on October 23 with a cover letter dated the same. Fill sequence drawings prepared by CH2M HILL for the remainder of Phase 1 operation were provided in the submittal dated October 20.

5. Please include all proposed site improvements and permit revisions as part of this pending permit modification.
In addition to the items previously presented, we would like to add an item you suggested during your site visit on October 23 and repeated in your letter of October 24. Specifically, we propose to install hard piping from a new standpipe located as shown on the attached plan and cross section with specifications prepared by Michael D. Moore, P.E., to carry leachate from the flexible hose used in the surface leachate sump area to the previously approved connection to the leachate plant.
No other site improvements are anticipated at this time.

PERMIT TERMS
I have reviewed the permit terms and offer the following requests. These are primarily to remove requirements for short term actions which are now complete, however some relate to groundwater and leachate monitoring which information was presented in the Groundwater Monitoring Plan submitted earlier this year and modified in September.

Throughout - update rule numbers

SC 1 -
update: construction completion dates;
delete: soil excavation for the landfill expansion, requirement for offsite leachate disposal; fuel storage requirements (none provided)
add: any new construction activities allowed by this modification

SC 13 -
Delete: a. and b.
Modify: c. to show quarterly sampling

SC 14
Delete: relates to completed plant modifications

SC19
Add: all wells and related permit requirements from SF09- 211030
Delete: MW4 and MW5
Modify: designations on wells to comply with list from Table 3 of September 1995 submittal on groundwater monitoring
SC22

Please define the list of EPA Priority Pollutants and update reference for Primary and Secondary drinking water parameters.

SC23

Update form number and list any other required recipients of data.

SC40

Delete: Leachate recirculation is not proposed to be used as management technique.

SC41

Delete: Abandonment complete

SC42

Delete: Abandonment complete

SC43

Delete: facility abandoned

SC44

Work done.

SC45

Delete: slopes are all stabilized with vegetation

SC46

Remove contingency plan requirement

SC48

Make this less specific and it applies to any temporary stormwater conveyance to be removed as filling progresses

SC49

New operations manual is dated May 1995

SC50

Extend the ZOD for the perc ponds to west boundary of closed 60-acre site

SC51

Delete, installed and addressed in SC50

SC52

Delete, completed

Add groundwater monitoring requirements from SF09-211030 to SO09-187229 and its successors as suggested below:

SF-SC8 goes to SO-SC19
SF-SC9 goes to SO-SC25
SF-SC10 goes to SO-SC19
SF-SC11 delete: complete
SF-SC12 delete: complete
SF-SC13 delete: complete
SF-SC14 = SO-SC21
SF-SC15 = SO-SC26
SF-SC16 goes to SO-SC20 and made consistent with current rule
SF-SC17 = SO-SC24
SF-SC18 = SO-SC27
SF-SC19 = SO-SC25
SF-SC20 = SO-SC23
SF-SC21 = SO-SC28

SF-SC22 goes to SO-SC-18? and made consistent with current rule
SF-SC23 goes to ?

Delete groundwater monitoring requirements from SF09-211030
SC8 through SC23

Please contact me if you have any questions.

Yours Truly,

Susan J. Metcalfe

Susan J. Metcalfe
Director, Solid Waste Management

CC: Gary Kuhl, Director, Public Works
Michael Moore, Public Works Project Manager
John Wood, CH2M Hill

CONTROL POINT
ANTENNA TOWER
UTILITY POLES
TRAFFIC LIGHT
STREET LIGHT
MAN HOLE
DROP INLET
CATCH BASIN
SIGN
MISC. POST
FLAG POLE
INDIVIDUAL TREES
FIRE HYDRANT
MB MAIL BOX
SWAMP
W/S WATER SURFACE ELEVATION

LEACHATE PIPING MODIFICATION

0 100 200

IFR NO.: 5451 | DATE: 7-27-95
SCALE: 1" = 100' | CONT. INTERVAL: 1'
DRAWN BY: P-3 | CHK. BY: C.M.R.

CITRUS COUNTY
SOLID WASTE MANAGMENT

CENTRAL LANDFILL

SHEET 1 OF 1

REGISTERED ENGINEER No. 34759 STATE OF FLORIDA

11-2-95

LANDFILLS

Techniques Overcome Florida Landfill Erosion

The advent of modern lined landfills has brought an assortment of challenges, some familiar and some unique to today's facilities. Consequently, some of the most effective landfill management techniques have been developed by the old engineering method — trial and error. This has been true at Florida's Citrus County Landfill, where the challenge of erosion control has been aggravating operators since the facility opened in January 1990.

Citrus County Landfill is located in west-central Florida, approximately 15 miles east of the Gulf of Mexico. The landfill's current phase, a 17-acre plastic-lined cell, is the first of six phases designed to last 30 years. With a surface elevation of 120 feet above sea level and a depth of 80 feet, the landfill is unique in Florida where shallow water tables can limit excavation depths. Side slopes, three of which are lined, are a steep 2:1 (horizontal to vertical). The unlined side contains an entrance road extending diagonally down into the cell.

Although the unlined slope was benched at intervals with ditches to control erosion, maintenance was a continuous nightmare, according to officials. Attempts to hydroseed or mulch were foiled by Florida's sizable rainstorms which washed away the seed before it could take root and formed gullies which deepened with each storm. The landfill was kept open by periodically reconstructing the slopes by dozing and excavating eroded soils from the stormwater pond.

After a catastrophic 11-inch rainfall devastated slopes that had been restored only months before, stapled sod was installed over burlap cloth on all unlined slopes. Although a costly $4 per square yard installed, the solution has required only minor maintenance since installation two years ago. Ordinarily the county pays $1.05 per square yard for installed sod; the higher costs reflect the materials and additional labor involved with the landfill's steep slopes.

When the price of sod can't be justified, operators use seed and seaweed mulch on slopes that are angled at 4:1 or flatter. Citrus County used hydrilla and water hyacinth that had been removed from nearby canals. These plants enrich the soil and facilitate seed germination by retaining moisture.

First, operators grade slopes, then spread a four-inch layer of seaweed on the ground, seeding and tilling into the top soil. A light rain or watering will cause the seed to germinate within a week. The type and quantity of seed used will vary with local conditions. If aquatic weeds are unavailable, mulch from yard waste, hay or straw can be substituted. Seed can be applied by this method at a cost of $.50 per square yard (excluding mulch).

The liners required by law also have contributed to the landfill's erosion problems. Erosion tends to occur at the edge of liners, since the synthetic liner sheds nearly 100 percent of contacted stormwater. Sheet flow concentrates at the bottom of the liner and erosion occurs where flows become concentrated on steep slopes.

When the soil layer next to the liner is eroded away, solid waste can become exposed and can contaminate the stormwater. The exposed waste also may come into contact with the liner which increases the risk of a puncture. If no other method is available to alleviate erosion damage, continual maintenance is required.

Fortunately, erosion can be controlled at the liner edge by constructing a ditch lined with plastic sheeting. Costs for manpower and equipment are approximately $4.60 per linear foot of ditch.

The ditch is formed by constructing a small earthen berm next to the liner. Next, an eight-inch wide plastic adhesive joint is used to attach the ditch liner to the landfill liner. The thickness of the selected sheeting depends upon how long the ditch will remain in place; however, a minimum thickness of 16 mil is recommended.

Use a woven, coated, three-ply membrane of low density polyethylene (LDPE) with carbon black for ultraviolet light resistance, available for approximately $1.17 per square yard for 16 mils and $1.80 per square yard for 20 mils. Drape the LDPE over the ditch bottom and over the top of the berm. Secure the loose edge of the LDPE in an anchor trench.

LDPE sheets work well when applied in 60 foot sections or longer. Joints should be overlapped at least four feet and glued with a plastic adhesive. Pressure can be applied to the adhesive joint by placing sandbags over the sheet until the adhesive dries. Sand bags placed in intervals will secure lapped joints, keep the liner in place and control flow velocity. A loose wrinkle of LDPE material at the bottom of the ditch will allow for soil settlement.

The officials at the Citrus County landfill prefer a lined ditch to sod or staked sod with burlap, because it will stand up to almost any flow velocity. Lined ditches also will provide a barrier to leachate and do not have to be watered or mowed. If sediments accumulate in a lined ditch, they can be carefully removed with a straight-edged backhoe.

Discharge from a lined ditch may be directed to a retention area using rubble rip rap to dissipate flow velocities, or the flow can be transferred to a culvert using sand bags. Sand bag end walls also can be used to erect equipment crossings over the ditch.

As these techniques demonstrate, officials in Citrus County discovered that a little creativity can go a long way in erosion control.

— Michael D. Moore
Citrus County Landfill

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 11/14/95 Subject STORMWATER CONTROL & COVER

Time 12 noon Permit No.

County CITRUS

MS SUSAN METZLAFF Telephone No. (904) 746-5000

Representing CITRUS COUNTY LANDFILL

[ ] Phoned Me [ ] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting WE DISCUSSED HER ADEQ LETTER.
I EXPLAINED THAT THE SPEC CALLS ON 3" HIGH GRASS WILL PROBABLY BE DELETED AND ALL OTHER EROSION PROBLEMS WILL BE DEALT WITH AS SEPARATE ISSUES.
I EXPLAINED THAT THE INTERMEDIATE COVER & STORMWATER CONVEYANCES SHOULD BE FUNCTIONS SIMILAR TO A CLOSURE - NO PONDING, NO LEACHATE SEEPAGE.
I SUGGESTED A SMALLER DOZER FOR SPREADING 12" INTERMEDIATE COVER & SEE ABOVE. ALSO I ASKED HER TO PROBE ALL INTER COVER ON 100' GRID FOR DEPTH OF COVER.
I ASKED FOR CONVEYANCE DETAILS & SUGGESTED A 1% MIN SLOPE, BERM ON LOW SIDE - AND WASTE EXCAVATION.

(continue on another sheet, if necessary)

Signature

Title

PA-01
1/93
hjs

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO:
P. O. Box 340
Lecanto, FL 34460-0340

D.E.P.
NOV 13 1995
SOUTHWEST DISTRICT
TAMPA

November 8, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

RE: Citrus County Central Landfill
Permit No. SO09-187229

Dear Mr. Ford:

In response to your letter of October 24, 1995 on several items I have the following comments:

EROSION CONTROL

Concerning the vegetation established on the side slopes of the south DRA at the site, I recognize the condition does not comply with the language of Specific Condition #45 of the permit. However, I believe it does meet the intent of that condition. These slopes are now stabilized and vegetated. The use of mulch to provide immediate stabilization has been demonstrated to be very effective. Additionally, the mulch holds moisture which assists in establishing vegetative growth from seeds either planted or volunteers. A further advantage for the County is that this is a very cost effective means of establishing vegetation on steep slopes.

Because of this success, I requested, in my letter on permit modifications dated November 7, that the language of Specific Condition #45 be modified to require stabilization but not specify the method. We feel the use of mulch or mulch plus seed is an effective means for erosion control.

The control of the undesirable species, which are trees, has been undertaken at the request of, but not by, the Division of Forestry. The removal of the trees will not destabilize the slopes. Grasses which might be shaded out by the trees will continue to grow and hold soil on the slopes.

STORMWATER/LEACHATE

While some ponding of stormwater in small areas was visible during your October 23rd site visit and some minor leachate staining was visible, the slopes which were grassed had sufficient cover according to the requirements of 62-701.500(7)(f). After adequate daily and intermediate cover had been placed and mulch and seed placed in order to establish vegetation, there was erosion of some areas. When these areas were reworked to provide more cover and to rebury any exposed waste, some waste may have been mixed into the initial or intermediate cover. Some pieces of waste may then have had less than 18 inches of cover. If this then renders the entire watershed unfit to be considered stormwater, we may never be able to produce stormwater. A phenomenal amount of cover would be required to keep 18 inches of it above the uppermost waste. This is an unnecessary use of expensively constructed landfill volume.

Your comments on excavation of waste for drainage conveyances is acknowledged. Likewise, we recognize that ponding contributes to leachate production and both situations are to be avoided. Concerning the request for design details for ally stormwater conveyances, we have provided those as part of the operating permit application recently submitted. We would expect, given the temporary nature of most of those conveyances, that they could be permitted as a generic design with exact locations and dimensions provided after they are installed.

LEACHATE PIPING

The comment concerning leachate piping within the lined area has been noted. Application for permit modification has been prepared and was submitted in the correspondence dated November 7.

Please contact me if you have any further questions.

Yours truly,

Susan J. Metcalfe

Susan J. Metcalfe, Director,
Division of Solid Waste Management

SJM:cms

cc: Gary W. Kuhl, Dir. Dept. Public Works
Michael D. Moore, Public Works Project Coordinator
John Wood, CH2M Hill

11/2/95
9am
p 1/1

Citrus County - Solute Modeling Teleconference

Marty Clasen - CH2M Hill
Susie Metcalfe - Citrus Co
John Wood - CH2M Hill - Deerfield Beach - Citrus Co LF project mtg

October 24, 1995 letter FDEP → Citrus

- 2 layer model - ① unconsolidated, saturated ② rock, saturated
Will not model unsaturated

- Will try to calibrate model to heads, but don't feel that its of the most important looking at the dilution. Will calibrate Na conc.

HST-3D - USGS model (?) Marty will find out how I can get a copy

Will be meeting again after conceptual design

Will go to the Citrus Board Nov 14th for authorization

Began discharging thru the perc ponds 10/31/95

Allison Amram

SO permit file

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 10/1/95 Subject Citrus LF - Solute Mon.

Time 1 pm Permit No.

County Citrus

M Marty Clasen Telephone No. 874-6522 x 4307

Representing CH2M Hill

[X] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

Confirmed 9am - Thurs (11/2) teleconference for Citrus sodium modeling

(continue on another sheet, if necessary)

Signature Allison Amman

Title EGI

PA-01
1/93
hjs

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

D.E.P.

NOV - 1 1995

SOUTHWEST DISTRICT
TAMPA

REPLY TO: Solid Waste Management
P.O. Box 340
Lecanto, FL 34460

October 27, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Citrus County Central Landfill
Modification No. 277526
Permit No. SO09-187229

Dear Mr. Ford:

In response to your letter dated October 10 concerning the request for minor permit modifications to the referenced permit indicating incompleteness of the application, we would like to separate item number 1 for your prompt consideration. This involves the request for construction of a new entrance road across a corner of the closed 60-acre landfill. Your only written comment related to that item was "**Please provide proof of ownership or lease agreement for the old 60-acre site.**" In a phone call today you raised several other issues you wished to be addressed. That information is provided herein.

The proposed entrance road realignment shifts the entrance from the current location near the northwest corner of the 80-acre site to the northeast corner of the 60-acre site. The alignment does not disturb any previously filled area, specifically the 7-acre lined trench. No groundwater monitoring wells will be affected. One gas detection well (GSH3N) will be in the alignment. We propose to replace it approximately 15 to 20 feet to the east of its current location. SWFWMD has reviewed the plan and approved it as indicated in the attached letter. Although the roadway will go through the northeast drainage retention area on the 60-acre site, the volume of stormwater retention will not be reduced.

Citrus County has been negotiating with the Division of Forestry (DEP) and the Division of State Lands (DEP) related to acquiring a sublease of the old 60-acre for well over a year. The Land Management Advisory Council approved the sublease at their May 25, 1995 meeting. A copy of the agenda of that meeting is attached. We have been working with state staff (Jim Grubbs in Forestry Division and Ed Hachenberger in State Lands) since then to develop exact sublease language. I have confidence that this sublease will be executed, however I am not able to give an exact time. Within a very few weeks we expect to be in a position of not having a median cut for our entrance due to the actions of the FDOT contractor. Meanwhile we have the two letters which were attached to the original permit modification application allowing construction of the access road and use of that road for access to the landfill.

We feel it is very important to begin this construction as soon as possible. County crews will be performing the work. We have our local permit, SWFWMD permission and permission from Forestry. The DEP permit is the last permitting stop keeping us from proceeding. Citrus County currently seems to be in a Catch 22 among the four state agencies (DOT, DEP, Forestry and State Lands) if we must wait for the sublease to be executed. I would appreciate your assistance in expediting this review and granting permission for construction of the new entrance road. Thank you.

Yours Truly

Susan J. Metcalfe

Susan J. Metcalfe
Director
Solid Waste Management

CC: Gary Kuhl, Director, Public Works
Michael Moore, Public Works Project Manager

SJM/llw

File-Forestry

SN 4228
1/90

PERMIT NO. 49

STATE OF FLORIDA
DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES
DIVISION OF FORESTRY

STATE FOREST USE PERMIT

Citrus County
Name of Group

has permission to use the Entrance to the closed landfill for access to current landfill
Facilities and Location

on Withlacoochee State Forest

from December 1, 1995 to December 1, 1996.

Number in group NA

Person in charge of group Susan Metcalf, Director Citrus County Solid Waste
Name

Address 230 W. Gulf to Lake Hwy; P O Box 340

Lecanto Florida 34460-0340

Phone 904 746 5000

Special arrangements or accommodations Access is granted to all vehicles associated with operation of the landfill. This is a temporary permit in anticipation of successful completion of a lease currently being negotiated between Citrus County and the State of Florida. Access is limited to only those areas outlined on the attached map and is in no way granting the permittee the right to conduct activities other than simple access across the landfill.

Responsibility for damages: The person or group granted this permit will be responsible for any damages to the facilities and/or furnishings as a result of their use of these facilities. Use all State Forest lands and facilities at your own risk.

Jon Blanchard
Forest Officer

9/12/95
Date

RECEIVED
SEP 15 1995
SOLID WASTE MANAGEMENT DIV

95-617 | XX

PROPOSED ROAD

EXISTING ROAD

EXISTING GRADE

DATUM ELEV 100.00

From D.T.
AUG 18 1995
1:30 P.M.

"PRELIMINARY"
"FOR INFORMATION ONLY"

NOTE: REDUCED 50%

HORIZONTAL SCALE : 1"=50'
VERTICAL SCALE : "=5'

CITRUS COUNTY
DEPARTMENT OF TECHNICAL SERVICES
DIVISION OF ENGINEERING

LANDFILL
PROPOSED
ENTRANCE ROAD

PLAN AND PROFILE
SHEET

REGISTERED ENGINEER NO.
STATE OF FLORIDA
DATE

SCALE: 1"=XX'
DATE:
PLAN SET:
FILE NAME: XX-XXXX
SEC: XX TWP: XX RGE: XX

SHT X OF XX

Florida Department of Agriculture & Consumer Services
BOB CRAWFORD, Commissioner

Please Respond To:

Division of Forestry
3125 Conner Boulevard
Tallahassee, FL 32399-1650

FM/LANDS
WSF

August 28, 1995

Mr. Daniel Crabb, Chief
Bureau of Land Management Services
Division of State Lands
Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

Dear Mr. Crabb:

As you recall, the Land Management Advisory Council approved the concept of granting a sublease to Citrus County for utilizing a 60 acre former landfill site as a storage area to accommodate the expansion of the County's existing landfill. Enclosed are our recommendations for inclusion in the sublease to Citrus County.

Thank you for your attention to this matter. Please contact Jim Grubbs at 904/488-8180, if you have any questions.

Sincerely,

BOB CRAWFORD
COMMISSIONER OF AGRICULTURE

G. A. Allbritton

George A. Allbritton, Acting Chief
Forest Management

Enclosures (2)

cc: Jon Blanchard, w/enclosures

FYI
SUSAN -

Bill
Forestry
+ Road relocation

SPEED LETTER® 44-903

Wilson Jones Carbonless S-P-A-Way® forms

CITRUS COUNTY
D.T.S.

DATE 9-15-95

TO Mike Moore
Dept. of Public Works
Lecanto, FL.

SPEED LETTER®

DATE

FROM TOM FEARS
DEPT. OF TECHNICAL SERVICES
LECANTO, FL

SUBJECT Landfill Entrance (#95-11)

FOLD NO. 9 or 10

MESSAGE Jeff Ketteler has talked to Margaret Smith on the phone and determined that the landfill access they gave us at #43 was done for a reason per F.D.O.T.'s design staff. Thus it cannot be moved and further, no access permit will be required since it is part of the SR 44 contract.

FOLD FOR NO. 9

FOLD FOR NO. 10

SIGNED Tom Fears

cc: Jeff Ketteler

REPLY

it is straight but not quite straight Hills but access from Citrus Hills will be the same movement

RECEIVED
SEP 15 1995
CITRUS COUNTY DPW
SOLID WASTE MANAGEMENT DIV

Glen Bayer

SIGNED

Good news - no time $ spent

RECIPIENT: RETAIN WHITE COPY, RETURN PINK COPY

Wilson Jones · Carbonless · MADE IN U.S.A.
44-903 Tripicate 1-0 Wilsondale, 1992

Appreciate since today are requesting us to move our entrance

10-19-95
Susie - F.Y.I.
Tom Z.
file
permit need required

Southwest Florida Water Management District

2379 Broad Street • Brooksville, Florida 34609-6899 • 1-800-423-1476 (Florida Only) or
(904) 796-7211 • SUNCOM 628-4150 • T.D.D. Number Only (Florida Only): 1-800-231-6103

7601 Highway 301 North
Tampa, Florida 33637-6759
1-800-836-0797 or (813) 985-7481
SUNCOM 578-2070

170 Century Boulevard
Bartow, Florida 33830-7700
1-800-492-7862 or (941) 534-1448
SUNCOM 572-6200

115 Corporation Way
Venice, Florida 34292-3524
1-800-320-3503 or (941) 483-5970
SUNCOM 549-5970

2303 Highway 44 West
Inverness, Florida 34453-3809
(904) 637-1360

An Equal Opportunity Employer

October 12, 1995

Thomas E. Fears, P.E.
Citrus County Board of County Commissioners
1300 S Lecanto Highway
Lecanto, FL 34460-0440

Subject: **CONSTRUCTION AUTHORIZATION**
Project Name: Central Landfill Entrance Road Realignment
Permit No.: 402023.04
County: Citrus
Sec/Twp/Rge: 1/19S/18E

Reference: Chapter 40D-4, Florida Administrative Code (F.A.C.)
Section 40D-4.331(2)(b)1-6, F.A.C.

Dear Mr. Fears:

The Southwest Florida Water Management District is responsible for protecting the water resource and its related environment for the citizens of the District. The District Governing Board has adopted permitting requirements designed to conserve water resources, preserve water quality, protect wetlands and reduce flooding.

We have received your request for the proposed realignment of the existing Central Landfill entrance road with Highview Avenue on SR 44. We are pleased to notify you that your request has been granted.

Plans and information submitted will be kept on file in support of this opinion. Please be reminded that all practicable and necessary effort should be taken during construction to control and prevent erosion and transport of sediments downstream.

If I can be of further assistance, please contact David Z. Sua, P.E. at extension 4375.

Sincerely,

Wojciech M. Mroz, P.E.
Surface Water Regulation Manager
Brooksville Regulation Department

WMM:DZS:mlm138
cc: File of Record, C. Booth
S. Sebaali, P.E., Sr. Professional Engineer
Source: Letter
B15:4/95

Citrus SO permit file

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 10-27-95 Subject EDB testing

Time 8:55 Permit No.

County Citrus

M Susie Metcalfe Telephone No. 904/746-5000

Representing Citrus Co Solid Waste

[X] Phoned Me [ ] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

Left a message for her to call me

- Already d.d quarterly sampling yesterday — will sample for EDB next quarter if lab can't analyze from collected samples.
- She's looking at the permit (SO) for changes she'd like to see - rule references updated, EPA ref. for Priority Pollutants, ZOD change, add wells from SF permit, etc. cl told her that cl had quickly looked at the same items - we will need to change quite a bit in the SO, + then delete the gw monitoring references in the SF permit.

(continue on another sheet, if necessary)

Signature Allison Amram

Title PGI

PA-01
1/93
hjs

FDEP	3804 Coconut Palm Drive, Tampa, FL 33619-8318

FAX

Date: 10/27/95

Number of pages including cover sheet: 2

To: SUSAN METCALFE

Phone:

Fax phone: (904) 946-1203

CC:

From: KIM FORD

Phone: (813) 744-6100

Fax phone: (813) 744-6125

REMARKS: ☑ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

LETTER YOU REQUESTED ON LANDFILL ACCESS ROAD

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

October 27, 1995

Ms. Susan Metcalfe, P.G.
Citrus County
Solid Waste Management
P. O. Box 340
Lecanto, FL 34460-0340

Re: Landfill Entrance Road
Citrus County Central Landfill
Permit No.: SO09-187229

Dear Ms. Metcalfe:

The Department has no objection to construction of the proposed landfill access road as shown on the September 11, 1995 construction plans received on September 15, 1995 and as described in your October 27, 1995 letter.

If you have any questions, you may call me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.
Solid Waste Program
Division of Waste Management

KBF/ab

cc: Gary Kuhl, P.E., Citrus County
Robert Butera, P.E., FDEP Tampa

Transmit Confirmation Report

No.	:	005
Receiver	:	8-904-7461203
Transmitter	:	WASTE MGT TAMPA SWDIST
Date	:	Oct 27 95 15:45
Time	:	01'38
Mode	:	Fine
Pages	:	02
Result	:	OK

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460
(904) 746-4107 — Fax (904) 746-1203

Reply To:

Div. Solid Waste Mgmt.
Susan J. Metcalfe, Director
904/746-5000
FAX: 904/527-1204

TIME: 12:45

NO. PAGES: 9 including cover sheet

TO: Kim Ford
Department of Environmental Protection

FROM: Susan J. Metcalfe
Director, Solid Waste Management

RE: Attached

MESSAGE:

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO: Solid Waste Management
P.O. Box 340
Lecanto, FL 34460

October 27, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Citrus County Central Landfill
Modification No. 277526
Permit No. SO09-187229

Dear Mr. Ford:

In response to your letter dated October 10 concerning the request for minor permit modifications to the referenced permit indicating incompleteness of the application, we would like to separate item number 1 for your prompt consideration. This involves the request for construction of a new entrance road across a corner of the closed 60-acre landfill. Your only written comment related to that item was "**Please provide proof of ownership or lease agreement for the old 60-acre site.**" In a phone call today you raised several other issues you wished to be addressed. That information is provided herein.

The proposed entrance road realignment shifts the entrance from the current location near the northwest corner of the 80-acre site to the northeast corner of the 60-acre site. The alignment does not disturb any previously filled area, specifically the 7-acre lined trench. No groundwater monitoring wells will be affected. One gas detection well (GSH3N) will be in the alignment. We propose to replace it approximately 15 to 20 feet to the east of its current location. SWFWMD has reviewed the plan and approved it as indicated in the attached letter. Although the roadway will go through the northeast drainage retention area on the 60-acre site, the volume of stormwater retention will not be reduced.

Citrus County has been negotiating with the Division of Forestry (DEP) and the Division of State Lands (DEP) related to acquiring a sublease of the old 60-acre for well over a year. The Land Management Advisory Council approved the sublease at their May 25, 1995 meeting. A copy of the agenda of that meeting is attached. We have been working with state staff (Jim Grubbs in Forestry Division and Ed Hachenberger in State Lands) since then to develop exact sublease language. I have confidence that this sublease will be executed, however I am not able to give an exact time. Within a very few weeks we expect to be in a position of not having a median cut for our entrance due to the actions of the FDOT contractor. Meanwhile we have the two letters which were attached to the original permit modification application allowing construction of the access road and use of that road for access to the landfill.

We feel it is very important to begin this construction as soon as possible. County crews will be performing the work. We have our local permit, SWFWMD permission and permission from Forestry. The DEP permit is the last permitting stop keeping us from proceeding. Citrus County currently seems to be in a Catch 22 among the four state agencies (DOT, DEP, Forestry and State Lands) if we must wait for the sublease to be executed. I would appreciate your assistance in expediting this review and granting permission for construction of the new entrance road. Thank you.

Yours Truly

Susan J. Metcalfe

Susan J. Metcalfe
Director
Solid Waste Management

CC: Gary Kuhl, Director, Public Works
Michael Moore, Public Works Project Manager

SJM/lw

file - Jones

SN 4228
1/90

PERMIT NO. 49

STATE OF FLORIDA
DEPARTMENT OF AGRICULTURE & CONSUMER SERVICES
DIVISION OF FORESTRY

STATE FOREST USE PERMIT

Citrus County
Name of Group

has permission to use the Entrance to the closed landfill for access to
Facilities and Location

current landfill on Withlacoochee State Forest

from December 1, 1995 to December 1, 1996.

Number in group NA

Person in charge of group Susan Metcalf, Director Citrus County Solid Waste
Name

Address 230 W. Gulf to Lake Hwy; P O Box 340

Lecanto Florida 34460-0340

Phone 904 746 5000

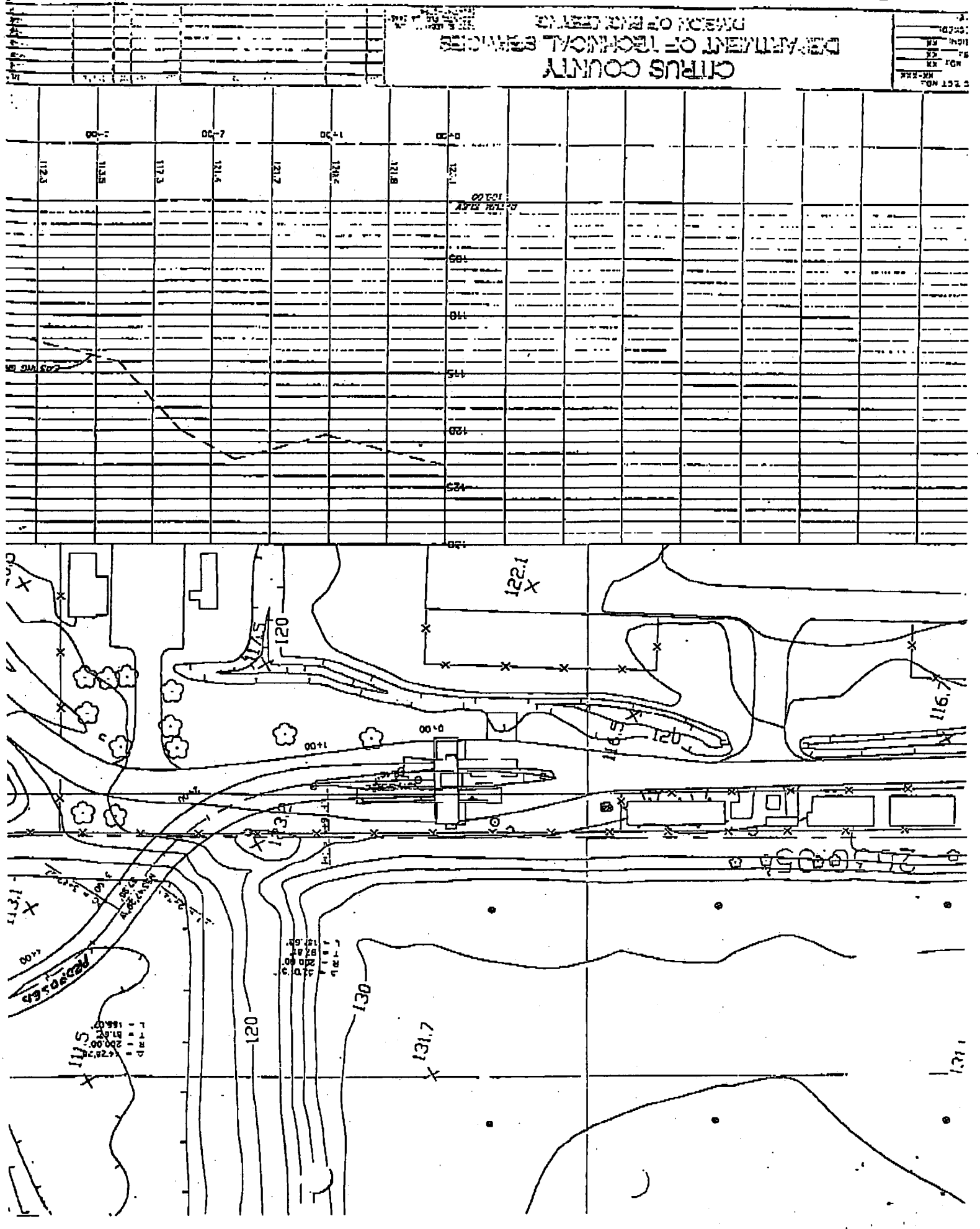
Special arrangements or accommodations Access is granted to all vehicles associated with operation of the landfill. This is a temporary permit in anticipation of successful completion of a lease currently being negotiated between Citrus County and the State of Florida. Access is limited to only those areas outlined on the attached map and is in no way granting the permittee the right to conduct activities other than simple access across the landfill.

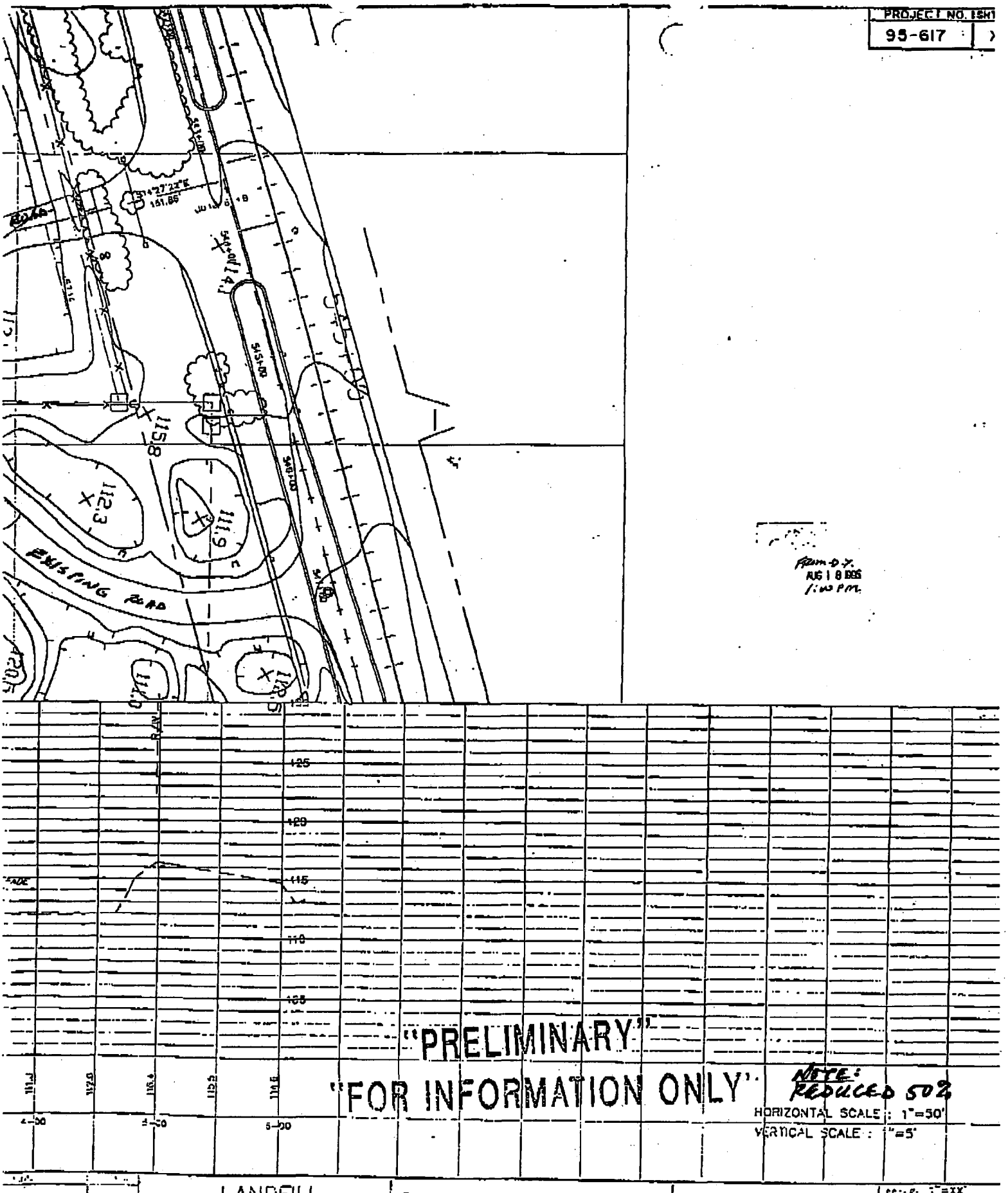
Responsibility for damages: The person or group granted this permit will be responsible for any damages to the facilities and/or furnishings as a result of their use of these facilities. Use all State Forest lands and facilities at your own risk.

Jon Blanchard
Forest Officer

9/12/95
Date

RECEIVED
SEP 15 1995
SW


CITRUS COUNTY
DEPARTMENT OF TECHNICAL SERVICES
DIVISION OF ENGINEERING
122.1
120
116.7
131.7
130
120



Florida Department of Agriculture & Consumer Services
BOB CRAWFORD, Commissioner

Please Respond To:
Division of Forestry
3125 Conner Boulevard
Tallahassee, FL 32399-1650

FM/LANDS
WSP

August 28, 1995

Mr. Daniel Crabb, Chief
Bureau of Land Management Services
Division of State Lands
Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

Dear Mr. Crabb:

As you recall, the Land Management Advisory Council approved the concept of granting a sublease to Citrus County for utilizing a 60 acre former landfill site as a storage area to accommodate the expansion of the County's existing landfill. Enclosed are our recommendations for inclusion in the sublease to Citrus County.

Thank you for your attention to this matter. Please contact Jim Grubbs at 904/488-8180, if you have any questions.

Sincerely,

BOB CRAWFORD
COMMISSIONER OF AGRICULTURE

G. A. Allbritton

George A. Allbritton, Acting Chief
Forest Management

Enclosures (2)

cc: Jon Blanchard, w/enclosures

FYI
SUSAN

Bill
Forestry
+ Road relocate

SPEED LETTER® 44-903

Carbonless Copy Form

CITRUS COUNTY D.T.S.

DATE 9-15-95

TO Mike Moore
Dept of Public Works
Legento, FL.

SUBJECT [illegible]

SPEED LETTER®

DATE

FROM TOM FEARS
DEPT. OF TECHNICAL SERVICES
LECANTO, FL

MESSAGE Jeff Ketteler has talked to Margaret Smith on the phone and determined that the landfill access they gave us at +73 was done for a reason per F.D.O.T.'s design staff. Thus it cannot be removed and further, no access permit will be required since it is part of the SR 44 contract.

SIGNED Tom Fears

cc: Jeff Ketteler

REPLY Not a great straight road from Citrus Hills but could be done in the same movement

SIGNED

RECEIVED
SEP 15 [illegible]
CITRUS COUNTY DPW
SOLID WASTE MANAGEMENT DIV

RECIPIENT: RETAIN WHITE COPY, RETURN PINK COPY

Good news - no land $ to spend. Senior Citizens are requesting us to move our entrance

10-19-95
Susie
F.Y.I.
Jon Z.
file
Permit need required

Southwest Florida Water Management District

2379 Broad Street • Brooksville, Florida 34609-6899 • 1-800-423-1476 (Florida Only) or (904) 796-7211 • SUNCOM 628-4150 • T.D.D. Number Only (Florida Only): 1-800-231-6103

7601 Highway 301 North, Tampa, Florida 33637-6759, 1-800-836-0797 or (813) 985-7481, SUNCOM 578-2070
170 Century Boulevard, Bartow, Florida 33830-7700, 1-800-492-7862 or (941) 534-1448, SUNCOM 572-6200
115 Corporation Way, Venice, Florida 34292-3524, 1-800-320-3503 or (941) 483-5970, SUNCOM 549-5970
2303 Highway 44 West, Inverness, Florida 34453-3809, 1-800-837-0360

An Equal Opportunity Employer

RECEIVED
Oct. 19 1995

October 12, 1995

Thomas E. Fears, P.E.
Citrus County Board of County Commissioners
1300 S Lecanto Highway
Lecanto, FL 34460-0440

Subject: CONSTRUCTION AUTHORIZATION
Project Name: Central Landfill Entrance Road Realignment
Permit No.: 402023.04
County: Citrus
Sec/Twp/Rge: 1/19S/18E

Reference: Chapter 40D-4, Florida Administrative Code (F.A.C.)
Section 40D-4.331(2)(b)1-6, F.A.C.

Dear Mr. Fears:

The Southwest Florida Water Management District is responsible for protecting the water resource and its related environment for the citizens of the District. The District Governing Board has adopted permitting requirements designed to conserve water resources, preserve water quality, protect wetlands and reduce flooding.

We have received your request for the proposed realignment of the existing Central Landfill entrance road with Highview Avenue on SR 44. We are pleased to notify you that your request has been granted.

Plans and information submitted will be kept on file in support of this opinion. Please be reminded that all practicable and necessary effort should be taken during construction to control and prevent erosion and transport of sediments downstream.

RECEIVED
OCT 19 1995
CITRUS COUNTY DPW
SOLID WASTE MANAGEMENT DIV

If I can be of further assistance, please contact David Z. Sua, P.E. at extension 4375.

Sincerely,

Wojciech M. Mroz, P.E.
Surface Water Regulation Manager
Brooksville Regulation Department

WMM:DZS:mlm138
cc: File of Record, C. Booth
S. Sebaali, P.E., Sr. Professional Engineer
Source: Letter
B15:4/95

Excellence Through Quality Service

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 10-25-95 Subject Citrus CAP

Time _____ Permit No. _____

County Citrus

M Marty Clasen Telephone No. 874-0777

Representing CH_2 MHill

[ ] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting _____

Summary of Conversation/Meeting _____

- Discussed well survey - SWFWMD database will not have wells older than 1970. They will need to do site work to see where wells are located.
- Solute modeling - were going to use SWFWMD Floridan model. CL want them to use site specific data. Plan to use HST (USGS model) Steve Roberty - did St Pete UIC model & worked w/ Joe May + Judy Richter. Plan a telecon before project starts - CL will be in the office next week

(continue on another sheet, if necessary)

Signature Allison Amman

Title PGI

PA-01
1/93
hjs

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619
813-744-6100

Virginia B. Wetherell
Secretary

FAXED

FAX TRANSMITTAL SHEET

10-25-95
Date

TO: Susie Metcalfe

DEPT.: Citrus Co - Solid Waste

FAX #: 904/527-1204

FROM: Allison Amram

DEPT.: D.E.P., Tampa Office Solid Waste

PHONE: 813-744-6100 or SunCom 542-6100 Ext. 336
FAX(local)744-6125 or (SunCom) 542-6125

SUBJECT: CTP Construction Completion

COMMENT: Use of perc ponds approved until Na-modeling study reviewed. Letter will be mailed today.

A

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 2

RECEIVED BY: _____

PHONE: _____

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

October 24, 1995

Ms. Susan Metcalfe, P.G.
Citrus County
Solid Waste Management
Post Office Box 340
Lecanto, FL 34460-0340

Re: Site Improvements
Permit No.: SO09-187229, Citrus County
Certification of Construction Completion

Dear Ms. Metcalfe:

On October 23, 1995, an inspection of the above referenced facility relative to construction completion and adherence to the permit issued by the Florida Department of Environmental Protection (FDEP) was made by Susan Metcalfe and David Chamblin (Citrus County) and Kim Ford (FDEP).

Certification of Construction Completion dated July 11, 1995 was received July 20, 1995 for the leachate treatment facility, and Certification of Construction Completion dated August 1, 1995 was received August 7, 1995 for the rainfall gutter system, landfill access ditch crossing, used oil collection center, and recycling and transfer site. Based on the information submitted and the site investigation, FDEP approves the related site improvements.

The FDEP has reviewed the treated leachate effluent analyses for the months of June, July, August and September, 1995. These results indicate that the leachate treatment system is functioning as designed. The treated leachate effluent may be discharged temporarily to the on-site percolation ponds until March 1, 1996, when use of the percolation ponds shall be re-evaluated with the results of the solute modeling study. The permittee shall conduct the sampling described in Specific Condition No. 13c of permit no. SO09-187229, with the deletion of total phosphorus sampling, and the addition of ethylene dibromide on a quarterly frequency.

If you have any questions please call Kim Ford at (813) 744-6100, extension 382 or Allison Amram at extension 336.

Sincerely,

Robert Butera

Robert Butera, P.E.
Solid Waste Manager
Division of Waste Management

KBF/ab

cc: Gary Kuhl, P.E., Citrus County
Mike Moore, P.E., Citrus County
Allison Amram, P.G., FDEP Tampa
Kim Ford, P.E., FDEP Tampa

FDEP-SWD (TAMPA) Fax:813-744-6084

** Transmit Conf. Report **

Oct 25 '95 10:21

FDEP-SWD (TAMPA) ---> 89045271204	
No.	0004
Mode	NORMAL
Time	0'39"
Pages	0 Page(s)
Result	T.4.1

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

October 24, 1995

Ms. Susan Metcalfe, P.G.
Citrus County
Solid Waste Management
Post Office Box 340
Lecanto, FL 34460-0340

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Sincerely,

Robert Butera

Robert Butera, P.E.
Solid Waste Manager
Division of Waste Management

KBF/ab

cc: Gary Kuhl, P.E., Citrus County
Mike Moore, P.E., Citrus County
Allison Amram, P.G., FDEP Tampa
Kim Ford, P.E., FDEP Tampa

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

October 24, 1995

Ms. Susan Metcalfe, P.G.
Citrus County
Solid Waste Management
Post Office Box 340
Lecanto, FL 34460-0340

Re: Site Improvements, Central Landfill
Erosion Control, Leachate and Stormwater Management
Permit No.: SO09-187229, Citrus County

Dear Ms. Metcalfe:

In response to your June 5, 1995 letter, the Department has no objection to the vegetated sideslopes of the south DRA at this time, however these sideslopes do not comply with specific condition #45 which requires 3 inches of "standing grass". The sideslopes which were initially covered with mulch are in part covered by dense brush and weeds. You have indicated the Forestry Service has begun spraying the undesirable species on these sideslopes which may eventually allow for erosion. The practice of spreading mulch on sideslopes as permanent erosion control is not approved for further use at Citrus County's Central Landfill. Citrus County continues to be responsible for erosion throughout the landfill site including all DRAs.

The Department has no objection to the temporary stormwater drainage conveyance as described in your October 23, 1995.

An October 23, 1995 site visit revealed stormwater ponding and leachate staining in existing stormwater conveyances and grass growing on internal sideslopes some of which did not appear to have adequate intermediate cover one foot in depth in addition to the six-inch initial cover, as required by FAC 62-701.500(7)(f). The Department requests Citrus County provide all design details for internal stormwater drainages conveyances prior to construction. Please be advised that the excavation of waste to construct stormwater swales may cause leachate seepage and discharge which should be prevented. All sideslopes which contribute to stormwater drainage conveyances must have no exposed waste. All ponding within the lined disposal area contributes to leachate and should be prevented.

The October 23, 1995 site visit revealed two hundred feet of flexible hose used for conveying leachate from the working area to the collection system. The hose is placed along sideslopes that discharge stormwater and crosses a lined stormwater conveyance swale. There exists the potential for leachate discharge outside of the lined disposal area due to leakage from the flexible hose. This is not an acceptable practice and should be replaced by a leachate pipeline or trucked from the working area. Construction of a leachate pipeline requires a permit modification according to FAC Rule 62-4.050(4)(q)5.

If you have any questions, you may call me (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.
Solid Waste Program
Division of Waste Management

KBF/ab

cc: Gary Kuhl, P.E., Citrus County
Mike Moore, P.E., Citrus County
Robert Butera, P.E., FDEP Tampa

FDEP	3804 Coconut Palm Drive, Tampa, FL 33619-8318

FAX

FAXED 11:45 AM

Date: 10/24/95

Number of pages including cover sheet: 2

To:
Susan Metcalfe, PG
Citrus Co - Div. of Solid Waste Mgt

Phone: 904/746-5000
Fax phone: 904/~~746~~ 527-1204
CC:

From:
Allison Amram
Solid Waste Section

Phone: (813) 744-6100
Fax phone: (813) 744-6125

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

Na Solute Transport Modeling
Susie -
I will be looking at the effluent quality this week + be in touch w/ you concerning use of the percponds. This letter does not authorize their use.
Talk w/ you soon.
Allison

DEPARTMENT OF ENVIRONMENTAL PROTECTION
FLORIDA

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

October 24, 1995

Ms. Susan Metcalfe, P.G., Director
Division of Solid Waste Management
P.O. Box 167
Lecanto, Florida 34460

Subject: Proposed Solute Transport Model for Sodium
Citrus County Central Landfill, Permit No. SO09-187229

Dear Ms. Metcalfe:

The Solid Waste Section has reviewed the proposed solute transport model study included as Attachment 3 of your October 16, 1995 letter. The purpose of this model is to estimate sodium and chloride concentrations in the groundwater at the downgradient property boundary of the Citrus County Central landfill.

The proposal states that a uniform hydraulic gradient will be used based on aquifer maps from May and September. Please note that the hydraulic head for the model shall account for the treated effluent discharge to the aquifer, and shall use existing site data. Hydraulic head calibration of the model shall match existing site conditions while the treated leachate was discharging to the percolation ponds.

The study report shall also include a copy of the documentation for the assumptions and methods used by the model. The County's consultant should contact me to determine if the FDEP already has documentation on the model used.

Please proceed immediately with the authorization of the proposed solute transport model. The long-term disposal plans for treated leachate will be partially based on the results of this model. The FDEP will expect the results of this study to be submitted by February 7, 1996, as stated in your letter.

The remaining items in your letter will be addressed separately. If you have any questions, please contact me at 813/744-6100, ext. 336.

Sincerely,

Allison Amram

Allison Amram, P.G.
Solid Waste Section

cc: Marty Clasen, CH2M Hill, P.O. Box 21647, Tampa, FL 33622-1647
Bob Butera, P.E., FDEP

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO:
P.O. Box 340
Lecanto, FL 34460-0340

October 18, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619-8318

RE: Citrus County Central Landfill
Notice of Application
Pending Permit No. S9009-274381

Dear Mr. Ford:

Enclosed please find a copy of the proof of publication dated October 8, 1995 announcing the receipt of an application for permit to operate the Citrus County Landfill. This proof of publication is submitted as part of the permitting requirements for this solid waste management facility.

Yours truly,

Susan J. Metcalfe

Susan J. Metcalfe, Director
Division of Solid Waste Management

SJM:cms

cc: Gary W. Kuhl, Dir. Dept. Public Works
John J. Wood, CH2M Hill

Proof Of Publication

from the
CITRUS COUNTY CHRONICLE
Crystal River, Citrus County, Florida

PUBLISHED DAILY

STATE OF FLORIDA
COUNTY OF CITRUS

Before the undersigned authority personally appeared Bradley R. Frazier who on oath says that he is the accounting manager of the Citrus County Chronicle, a newspaper published daily at Crystal River, in Citrus County, Florida, that the attached copy of advertisement being a public notice in the matter of the
Application Pending Permit # S9009-274381

Court, was published in said newspaper in the issues of
October 8, 1995

Affiant further says that the Citrus County Chronicle is a newspaper published at Crystal River in said Citrus County, Florida, and that the said newspaper has heretofore been continuously published in Citrus County, Florida, each week and has been entered as second class mail matter at the post office in Inverness in said Citrus County, Florida, for a period of one year next preceding the first publication of the attached copy of advertisement; and affiant further says that he/she neither paid nor promised any person, firm or corporation any discount, rebate, commission or refund for the purpose of securing this advertisement for publication in the said newspaper.

R Chris Ordway

The foregoing instrument was acknowledged before me this 8th day of October 1995
by R. CHRIS ORDWAY
who is personally known to me and who did take an oath

Jeanette A. Schmidt
Notary Public

Jeanette A. Schmidt
Notary Public, State of Florida
Commission No. CC 302632
My Commission Expires 8/16/97
Bonded Through Fla. Notary Service & Bonding Co.

D.E.P.
OCT 23 1995
Southwest District
TAMPA

3601008 SuCm
PUBLIC NOTICE
State of Florida
Department of
Environmental Protection
Notice of Application
Pending Permit
S9009-274381

The Department announces receipt of an application for permit from Ms. Susan Metcalfe, of Citrus County, to operate the Citrus County Landfill, (approximately N 20 acres) subject to Department rules, located on State Road 44 between Lecanto and Inverness, Citrus County, Florida.

This application is being processed and is available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the Southwest District Office, 3804 Coconut Palm Drive, Tampa, Florida 33619.

Published one (1) time in the Citrus County Chronicle, October 8, 1995.

RECEIVED
OCT 18 1995
CITRUS COUNTY DPW
SOLID WASTE MANAGEMENT DIV

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

SITE INSPECTION REPORT

NAME OF SITE: Cities Landfill DATE: 10/23/95

SITE ADDRESS/LOCATION: SR 44

CITY: Leesburg PERMIT #: _____

REASON FOR VISIT:

- COMPLIANCE INSPECTION ____
- PERMITTING INSPECTION ✓
- COMPLAINT INVESTIGATION ____

PERSONS PRESENT: Susan Metcalfe, David Chandler
Tom Ford (Mike Moore Later)

SUMMARY REPORT:

Observed Completed site improvements
- no problems
observed ponding and erosion
on some intermediately covered areas
Some leachate staining on internal
lined stormwater conveyance - adjacent side top.
Internal side slopes wet - Rye grass recently planted
in some areas, other areas erosion
Repaired recently. Some waste exposed.
Observed 200' of flexible hose used
for leachate collection located over
stormwater conveyance and side slopes.

VIOLATIONS NOTED: Leachate mixing w/ stormwater

DEP REPRESENTATIVE: _____

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO: Solid Waste Management
P.O. Box 340
Lecanto, FL 34460

D.E.P.
OCT 23 1995
TAMPA

October 23, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

Re: Citrus County Central Landfill
Permit No. SO09-187229

Dear Mr. Ford:

You recently requested that copies of the permit drawings for Phase 1 of the Citrus County Central Landfill be resubmitted to your office. Enclosed are two copies each of plans prepared by Post, Buckley, Schuh & Jernigan for the permit application (dated September 1988) and record drawings (construction drawings dated March 1989) for your use.

Yours truly,

Susan J. Metcalfe

Susan J. Metcalfe
Director, Solid Waste Management

CC: Gary Kuhl, Director, Public Works

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO: Solid Waste Management
P.O. Box 340
Lecanto, FL 34460

October 23, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619

DEP
OCT 23 1995

Re: Citrus County Central Landfill
Permit No. SO09-187229

Dear Mr. Ford:

During your visit to the site in early July of this year, Mike Moore and I discussed with you the idea of using a lined temporary stormwater conveyance on the large plateau on the east end of the landfill. You indicated that since this was a temporary feature, it would not require a permit modification and that you concurred with the proposal to construct the conveyance and provide you information for your files on its location and construction. I understand that you and Mike have discussed the work previously and we have included that information in this submittal. This includes one 8 1/2 x 11 inch plan sheet dated October 2, 1995.

The area in question was graded to slightly increase slopes to provide positive drainage. The plateau area is all covered with intermediate solid cover. Runoff is directed from the soil covered area to the lined conveyance and discharged as stormwater to our permitted drainage system exterior to the lined area.

The design includes use of 20-mil reinforced HDPE 36 feet wide to carry stormwater from the plateau area. The discharge of the plastic lined section is into a culvert whose position was set to continue use as long as possible. We over excavated some of the culvert alignment, removed waste and replaced it with dirt. The culvert joints are sealed. The discharge of the culvert is into the lined gutter system around the fill area edge.

The west end of the conveyance can be removed as filling progresses by pulling up the liner. As the regular filling sequence proceeds from west to east (upgradient to downgradient on

the lined ditch) this shortens the conveyance while still keeping the outlet active. We expect parts of the temporary drainage conveyance will serve for up to 6 more months. When filling reaches the east end, the culvert will be removed. Use of a similar setup at a higher elevations may be proposed in the future.

We expect you to observe the conveyance on Monday October 23. Please let me know if you have any questions.

Yours Truly,

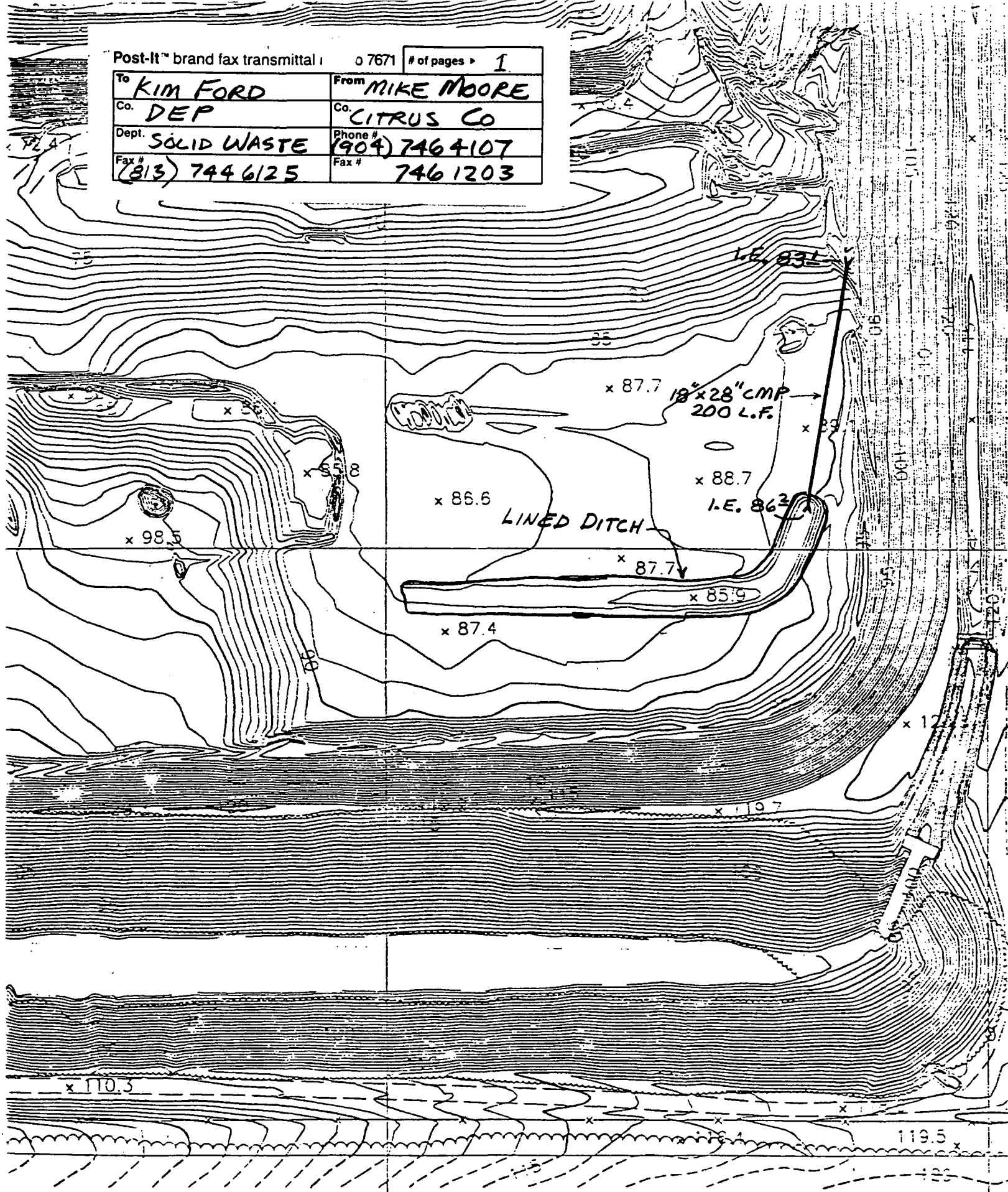
Susan J. Metcalfe

Susan J. Metcalfe
Director, Solid Waste Management

CC: Gary Kuhl, Director, Public Works
Michael Moore, Public Works Project Manager
David Chamblin, Section Chief

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 1

To	From
KIM FORD	MIKE MOORE
Co. DEP	Co. CITRUS CO
Dept. SOLID WASTE	Phone # (904) 746 4107
Fax # (813) 744 6125	Fax # 746 1203



CITRUS COUNTY CENTRAL LANDFILL TEMP. DRAINAGE

10-2-95 MDM

Citrus SO permit file

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 10/19/95 Subject SO Permit Modification

Time 2:25 Permit No.

County Citrus

M Susie Metcalfe Telephone No.

Representing Citrus Co - Solid Waste

[X] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

She has mailed request for leachate disposal, gw mod - want to dispose of treated leachate, change ZOD, all wells moved to op. permit.

- DPW Culvert - use vacuum truck to clear stormwater obstructions. Put water into leachate ~~tank~~ lift station - solids go to landfill. Only on stormwater clogs - vacuum truck uses mechanical action only to loosen clogs.

(continue on another sheet, if necessary)

Signature Alison Amram

Title PGI

PA-01
1/93
hjs

This is their standard operating procedure - their plant can separate the solids - WWTP won't take the solids.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 10/19/95 Subject CITRUS LF

Time 9:20 Permit No.

County

MS STAN METZGALFE Telephone No.

Representing CITRUS County

[ ] Phoned Me [✓] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

I REQUESTED AN EXPLANATION FOR STORMWATER DRAINAGE ON TOP WITH NARRATIVE & SKETCH OF DESIGN TO EXPLAIN (1) HOW IT WORKS, (2) IT DOES NOT INTERFERE WITH SED. CONTROL SHOWN ON PLANS (3) HOW LONG BEFORE REMOVED. I SAID I WILL VISIT SITE MONDAY TO REVIEW CERTIFIED SITE IMPROVEMENTS. I SUGGESTED SHE CALL ALLISON TO DISCUSS DPW DISPOSAL AND LEACHATE TREATMENT PLANT.

(continue on another sheet, if necessary)

Signature

Title

PA-01
1/93
hjs

SO permit file

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460
(904) 746-4107 — Fax (904) 746-1203

RECEIVED
OCT 19 1995
Department of Environmental Protection
BY SOUTHWEST DISTRICT

REPLY TO:
P. O. Box 340
Lecanto, FL 34460-0340

October 16, 1995

Allison Amram, P.G.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33609

Re: Citrus County Central Landfill
Leachate Plant, Groundwater Monitoring
Permit No. SO09-187229, Pending Permit No. SO09-274381

Dear Ms. Amram:

During our meeting at your office held on September 19, we discussed the status of the leachate treatment plant and groundwater monitoring. Since then we have received results from additional testing of effluent from the leachate treatment plant and are presenting that to you with this transmittal. Routine leachate analyses for the month of September are also included for your review. In addition, we are requesting that we be allowed to discharge treated effluent from the plant to the on-site percolation ponds as soon as we receive approval from the Department.

Also included in this package are responses to your comments on the groundwater and leachate monitoring segments of our operating permit application. The most significant of these is that we are requesting that the separate zone of discharge of the percolation ponds be eliminated, with the downgradient (west) perimeter of the entire landfill site be considered the zone of discharge.

LEACHATE EFFLUENT ANALYSES

RETEST - Results of the sampling and analysis of leachate effluent in July revealed THM's and EDB in excess of the maximum contaminant levels. My letter of September 18 indicated our interpretation of these results and offered additional analytical work to test those interpretations. The attached analyses (Attachment 1) include: Disinfection solution (sodium hypochlorite) for

bromide as a source of bromine to form THM's; Methanol for THM's and EDB; Non-chlorinated effluent for THM's and EDB plus fecal coliform and fecal strep; Low-dose chlorinated effluent for THM's and EDB.

The results are very positive in terms of effluent quality, however did not provide conclusive evidence of the source or cause of previous THM and EDB levels. The interference from the chlorine in the sodium hypochlorite disinfection solution did not allow determination of bromide content at realistic detection levels. Likewise, interference in analysis of methanol for trihalomethanes and EDB resulted in very high detection levels and unmeaningful results. Therefore it cannot be determined whether either of these process chemicals contributed THM's or EDB to the effluent.

The results of analysis of unchlorinated effluent for EDB and THM's shows that those compounds are not detectable. The chlorinated effluent analysis shows a very minor amount (2ug/l) of chloroform only. This level is well below the acceptable limit. These results may indicate potential for THM formation during the chlorination process, however the amounts are not at a level to cause concern for violation of standards.

Analysis of unchlorinated effluent showed fecal coliform at 22 cfu/100ml, well below the permit limit of 200. Fecal strep was at 85 cfu/100ml. According to a 1979 text by Metcalf & Eddy, Inc. entitled Wastewater Engineering - Treatment, Disposal and Reuse, published by McGraw-Hill, this predominance of strep indicates the source is more likely animal (probably bird) than human. Thus the potential for human infection is reduced. The proposed treated effluent discharge point in the ponds is about 100 feet above the water table. Since bacteria are quite large and can reasonably be expected to be filtered out in sand, small amounts of bacteria in the effluent are not a concern for their impact on groundwater. These results indicate that chlorination may not be required to achieve the required effluent quality and may produce unwanted by-product compounds. We propose to continue with low level chlorination under normal operating conditions.

ROUTINE TESTING, SEPTEMBER - All analytical results of leachate testing according to the interim period requirements of Specific Condition 13b of our operating permit for the month of September are attached (Attachment 2). The monthly operating report with leachate flows is also included. The leachate samples were obtained from paired sets of influent/effluent from September 6/7, 13/14, 20/21, and 27/28.

The average daily leachate volume treated was about 13,600 gallons, the highest since we restarted the plant. This is less than the permit maximum of 30,000 gallons per day.

Nitrogen removal was excellent, with total nitrogen less than the nitrate limit of 12 mg/l for all samples. The maximum nitrate level was 8.6 mg/l, the minimum was 0.04 mg/l.

Total suspended solids, fecal coliform and pH of the effluent were all within permit limits throughout the month.

One sample for BOD was greater than the 20 mg/l limit at 34.4 mg/l, however all other analyses were at 3.1 or less. COD results ranged between 63.2 and 159 mg/l.

This completes the fourth month of provisional operation while disposing of effluent offsite.

EFFLUENT DISPOSAL

Based upon the results of the required three-month test period, conducted after plant modifications were complete, plus the additional analytical work and a further month's testing, we believe that the quality of effluent is appropriate for disposal on-site. The primary concern had been nitrate removal. All results with the exception of one week in the four-month period, for which we are not certain the laboratory was correct, met the drinking water standard for nitrate. Most were less than 1% of the maximum contaminant level.

The results of the additional testing indicate that the trihalomethanes and ethylene dibromide found previously are not present. The source was not confirmed but was suggested to be the chlorination process.

The only remaining concern is that the concentration of sodium which remains in the effluent may cause violations of primary groundwater standards, or that chloride or total solids may cause violations of secondary groundwater standards. In order to test this concept, we propose to perform a solute transport model study including the entire 140-acre combined landfill site. Although analysis of samples from well #6 have indicated elevated values for TDS, chloride and sodium, we do not feel that there will be any offsite impact. That well is less than 50 feet from the ponds, however due to the site configuration, there is no other appropriate monitoring point until the west property boundary. We feel that the results of modeling will confirm this concept.

We have received a proposal from our consultant (CH2M HILL) for this study (a copy of the technical approach - Attachment 3) and can present it to our Board for approval on November 7 if we receive your concurrence by October 20th. We expect that the project can be completed and results submitted to you by February 7, 1996. In the interim, please review this proposed study approach. If you have any questions, comments or objections, please contact me as soon as possible.

Our request is for permission to begin disposing of treated effluent on-site in the percolation ponds as soon as possible. If the results of the solute transport model study indicate that groundwater standards may be violated offsite as a result of using the ponds, an alternate disposal method will be proposed. Otherwise, we would request that the disposal site and method be allowed for the term of the permit.

RESPONSES TO OPERATING PERMIT COMMENTS

The following are in response to comments offered in your August 15, 1995 letter to Kim Ford concerning Pending Permit No. S009-274381. Your comments are repeated in bold type with our response immediately following.

1. Section 3.6.2.2 In the last two quarter, monitoring well MW-6 exceeded the Primary Drinking Water Standard for both nitrate and sodium. This well monitors the edge of the zone of discharge for the leachate effluent percolation ponds. According to F.A.C. 62-522.300(1), no exceedances of groundwater quality standards or criteria are allowed outside of a zone of discharge. Please inform the florida Department of Environmental Protection (Department) of the County's plans to address this issue.

We feel that the source for nitrate found in monitoring well MW-6 was from the percolation ponds for leachate effluent. As described earlier in this letter, the modifications to the leachate treatment plant have successfully eliminated nitrate from the effluent. Therefore, with the source eliminated, the water quality in terms of nitrate can be expected to improve with time and dilution from renewed use of the ponds.

The source for sodium is also felt to be the treated leachate. The existing plant cannot remove sodium. We do not intend to provide removal for sodium, due to the cost of adding treatment units which could achieve sodium/chloride/total dissolved solids reduction. However we do intend to model groundwater quality through use of solute transport modeling techniques described above. We intend to show that groundwater standards will not be violated at the next available downgradient measuring point, the west side of the closed landfill.

Citrus County has previously proposed in the Groundwater Monitoring Plan updated September 1995 to combine the groundwater monitoring requirements of both the closed 60-acre and adjacent active 80-acre landfill sites. In order to clarify our intent, we have requested a single zone of discharge, with the western boundary of the closed site as the compliance line. We feel that a separate zone of discharge for the percolation ponds or any other sub-element of the waste management facility is contrary to the requirements of 62-701 and 62-550 although

intermediate monitoring where physically feasible is appropriate. Therefore, we are requesting that the requirement for a zone of discharge for the percolation ponds be removed from the permit. Further, we are requesting that wells numbered 4 and 5 be removed as monitoring wells in the permit and that the designation of well 6 be as an intermediate detection well rather than a compliance well.

2. Section 4.1 The Department acknowledges the request to conduct field filtering of the groundwater samples from the site. however, the filtering must be conducted in accordance with the Department's Technical Document Determining Representative Ground Water Samples, Filtered or Unfiltered, dated January 1994. A copy of this document is attached for your reference.

Citrus County intends to collect filtered samples according to the Technical Document provided. We have submitted that document to our sampling and analysis contractor.

3. Section 4.2 This section states that the groundwater monitoring for both the 60-acre closed landfill, and the 80-acre expansion section will be conducted as one site. To this end, the Department proposes to include all groundwater monitoring activities in the operational permit, and delete the specific conditions concerning groundwater monitoring activities in the landfill's closure permit once the new operational permit is issued.

Citrus County concurs with your proposal to combine all groundwater monitoring in the operational permit.

4. Section 4.2(7) Please note that F.A.C. Chapter 17-21 has been renumbered to F.A.C. Chapter 62-532.

The change has been noted.

5. Section 4.4 Leachate sampling locations should be located prior to any conditions that may change the leachate characteristics. Are the current sampling points located in the first point of access to the leachate? Please describe the leachate sampling points, and provide a figure the location of these sampling locations, and how the sample is collected.

Leachate influent sampling takes place as a grab sample at the discharge from the holding facility, which is currently Tank #1 of the Zimpro plant, into tank #2 which is the first treatment vessel. See attached diagram (Attachment 4) for the locations of current and proposed sampling locations. Leachate is hard piped from the lift stations to the plant, therefore, the inlet to Tank #1 would be the first access point to the leachate. The point at which we are sampling is the point where treatment begins and is the first point where we have a representative mix

of the batch to be treated. Influent from the various sources may be segregated or mixed in unknown proportions and since the leachate delivery pumps operate automatically they are not predictable for sampling purposes. We request that the defining factor be the leachate to be treated, which is in fact a proportional sample from the mixed waste stream. Effluent is currently (during the provisional operating period) sampled either from the recirculation in the flow equalization tank (#4) or at the discharge of the line which feeds from the anoxic tank(#3) to the flow equalization tank (#4). This location is also shown on the attached diagram. Samples are grab samples. Because this is a batch plant, a grab sample from the effluent is expected to be representative of the batch as it is for influent.

After on-site disposal is approved, we would intend to take the effluent sample as a grab from the discharge line after final filtration takes place as show on the attached diagram.

6. Sections 4.5.1 and 4.5.3 Sampling of new wells is proposed for four consecutive quarters, and then semi-annually. It is not required that all new wells, background or detection, be monitored quarterly. The Department will require the new site wells to be sampled initially for all parameters listed in F.A.C. Rule 62-701.510(8)(a) and (d), and then semi-annually for the parameters listed in F.A.C. Rule 62-701.510(8)(a). If the County wishes to conduct more frequent monitoring, and for the additional proposed parameters, the Department requests that the data be submitted to the Solid Waste section. However, this additional monitoring above the rule requirements will be required by the Department. The proposed new well locations and construction are acceptable to the Department.

The proposed groundwater monitoring plan was revised, with page replacements provided at our September 19 meeting. Those revisions included semi-annual monitoring in accordance with the requirements of 62-701.510(8)(a).

7. Section 4.7(2) F.A.C. Rule 62-701.510(9)(b) requires an evaluation of the groundwater monitoring systems every two years. This was changed from annually to every two years when the monitoring frequency changed from quarterly to semi-annually. Again, if the county would like to conduct a more frequent evaluation of their groundwater monitoring plan than the required two years, the Department will review the evaluation to provide technical support to the County. Please note that this section of the rule requires the plan to be updated at the time of permit renewal.

The revised groundwater monitoring plan reflects the requirements of the rule for evaluation of the plan every two years. The submittal which was reviewed in August and its September revision is intended to fulfill the requirement for an updated plan at the time of permit renewal.

Thank you for your attention to these matters. Our most urgent priority would be for approval of the proposed solute transport model study, next would be the request for on-site treated leachate effluent discharge and finally the groundwater monitoring program requests and responses to your earlier comments. Please call me if you need more information or would like to discuss any of these matters.

Yours truly,

Susan J. Metcalfe

Susan J. Metcalfe, Director,
Division of Solid Waste Management

SJM:cms

cc: Gary Kuhl, Dir. Dept. Public Works
Ralph Hedgecoth, Dir. Utilities Div.
Bob Merkel, Utilities Operation Supervisor
John Miller, Hydro Q
Marty Clasen, CH2M Hill
John Wood, CH2M Hill
Dave Beula, Zimpro
Dave Weber, Post Buckley, Schuh & Jernigan
Chongman Lee, FDEP, Tallahassee

ATTACHMENT ONE

ADDITIONAL SAMPLING AND ANALYSIS

Orlando Laboratories, Inc.
P.O. Box 149127, Orlando, FL 32814
(407) 896-6645 FAX (407) 898-6588

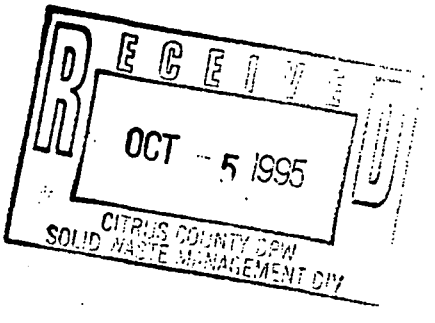
REPORT OF ANALYSIS

Citrus County
Department of Solid Waste
P. O. Box 340
Lecanto, FL 34460-0340
Attn: Cathy Winter

Work Order # : 95-09-255
Date Received: 09/20/95
Report Due by: 10/02/95
OLI Contact: J_BEATO

Work ID: Citrus County
Samples collected by: OLI Field Team
Total Samples: 3

Sample Identification	Description of Analysis	Description of Analysis
01A Liquid Methanol	Trihalomethanes Field Data	VOC: Ethylene Dibromide
02A Sodium Hypochloride	Bromide	Field Data
03A Method Blank	Trihalomethanes QC for Wet Chemistry	VOC: Ethylene Dibromide



Respectfully Submitted,
ORLANDO LABORATORIES, INC.

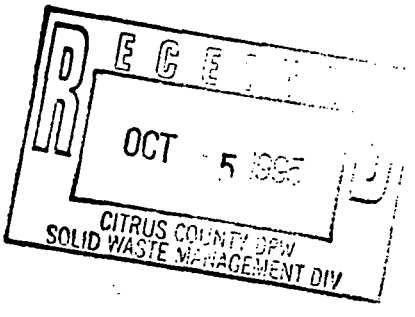
Authorized Laboratory Signature

Results of Analysis

Work ID: Citrus County Work Order: 95-09-255

Client Number:		Liquid Methanol	Method Blank	
OLI Number:		01A	03A	
Dilution:		50	1	
Trihalomethanes: Water				
EPA 501 1	Units	Result/Flag	Result/Flag	MDL
Chloroform	ug/l	50 U	1.0 U	1.0
Dichlorobromomethane	ug/l	50 U	1.0 U	1.0
Dibromochloromethane	ug/l	50 U	1.0 U	1.0
Bromoform	ug/l	50 U	1.0 U	1.0
THM's Total	ug/l	50 U	1.0 U	1.0

Client Number:		Liquid Methanol	Method Blank		
OLI Number:		01A	03A		
Dilution:		10	1		
VOC: Ethylene Dibromide: Water					
EPA 504	Units	Result/Flag	Result/Flag	MDL	mcL
EDB	ug/l	3.5 U	0.35 U	0.35	0.02 ug/l



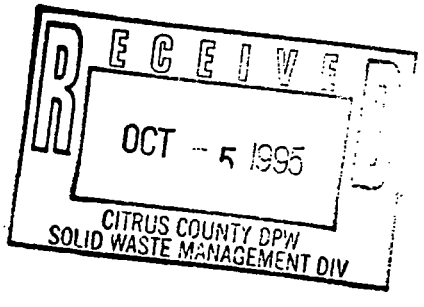
Re: EPA 501 - Sample 01:
ELevated detection limits caused by dilution of sample due to matrix interference.

Re: EPA 504 - Sample 01:
Elevated detection limits caused by dilution of sample due to matrix interference.

Results of Analysis

Work ID: Citrus County Work Order: 95-09-255

Client Number:		Sodium Hypochloride	
OLI Number:		02A	
Analyte	Units	Result/Flag	MDL
Bromide	mg/l	5000 U	0.5



Re: Bromide - Sample 02:
Sample was diluted because of matrix interference.

Results of Analysis

Work ID: Citrus County Work Order: 95-09-255

Client Number: Liquid
Methanol
OLI Number: 01A

Field Data by: OLI Field Team

SAMPLE TYPE Grab Date Written 10/02/95

Well Specifications		Field Parameters	
Diameter	NA in.	Temperature	NA ^C
Water Level	NA ft.	Conductivity	NA umhos/cm @ 25C
Total Depth	NA ft.	pH	NA units
Column Height	NA ft.	Dissolved Oxygen	NA mg/L
Column Volume	NA gal.	Residual Cl	NA mg/L
Evacuation	NA gal.	Hydrogen Sulfide	NA mg/L
Actual	NA gal.		

Well Evacuation Method NA
Sampling Method Grab

Sample Appearance		Environmental Conditions	
Tint	None	Air Temperature	33.0^C
Color	Clear	Wind	W/0-5
Turbidity	None	Rain	None
Odor	Methanol	Atmosphere	Clear
		Other	NA

Comments

Results of Analysis

Work ID: Citrus County Work Order: 95-09-255

Client Number: Sodium Hypochloride

OLI Number: 02A

Field Data by: OLI Field Team

SAMPLE TYPE Grab Date Written 10/02/95

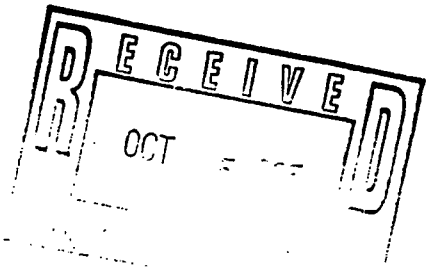
Well Specifications		Field Parameters	
Diameter	NA in.	Temperature	NA ^C
Water Level	NA ft.	Conductivity	NA umhos/cm @ 25C
Total Depth	NA ft.	pH	NA units
Column Height	NA ft.	Dissolved Oxygen	NA mg/L
Column Volume	NA gal.	Residual Cl	NA mg/L
Evacuation	NA gal.	Hydrogen Sulfide	NA mg/L
Actual	NA gal.		

Well Evacuation Method NA

Sampling Method Grab

Sample Appearance		Environmental Conditions	
Tint	Light	Air Temperature	33.0^C
Color	Yellow	Wind	W/0-5
Turbidity	None	Rain	None
Odor	Chlorine	Atmosphere	Clear
		Other	NA

Comments



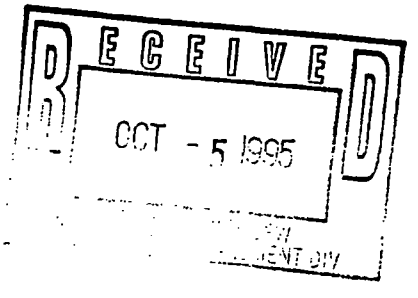
QA for Analysis

Work ID: Citrus County Work Order: 95-09-255

	Test Description	Method	Prep	Run	Analyst
Client No: Liquid Methanol	Trihalomethanes	EPA_501_1	NA	09/28/95	NAF
OLI No: 01A	VOC: Ethylene Dibromide	EPA_504	NA	09/20/95	LG
Matrix: Water					
Collected: 09/20/95 11:30:00					

	Test Description	Method	Prep	Run	Analyst
Client No: Sodium Hypochloride	Bromide	EPA_300_0	NA	09/26/95	BB
OLI No: 02A					
Matrix: Water					
Collected: 09/20/95 11:40:00					

	Test Description	Method	Prep	Run	Analyst
Client No: Method Blank	Trihalomethanes	EPA_501_1	NA	09/28/95	NAF
OLI No: 03A	VOC: Ethylene Dibromide	EPA_504	NA	09/20/95	LG
Matrix: Method Blank					
Collected: Not specified					

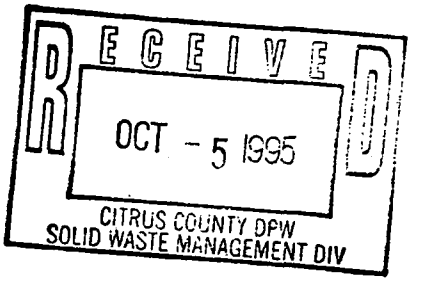


Citrus County
Attn: Cathy Winter

Report Number: 95-09-255

Quality Control Data Sheets

Parameter	OLI Sample #	Matrix Spike % Recovery	Matrix Spike Dup % Recovery	Relative Percent Difference	Analysis Date	Analyst
Bromide by IC	9509255-02	43	41	5	09/26/95	BB



ORLANDO LABORATORIES, INC.

GC ORGANICS

MATRIX SPIKE RESULTS

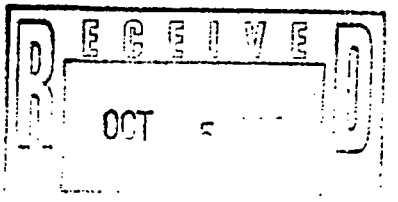
MATRIX : Water
REPORT DATE: 9-29-1995
EPA METHOD : 501.1

LAB SAMPLE #: 9509149-03
ANALYSIS DATE: 9/28/95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY	MSD RESULT	MSD % RECOVERY	RPD
Chloroform	50	0	50.0	100	44.0	88	13
Bromodichloromethane	50	0	45.0	90	42.0	84	7
Dibromochloromethane	50	0	49.0	98	48.0	96	2
Bromoform	50	0	50.0	100	50.0	100	0

MATRIX SPIKE QUALITY CONTROL LIMITS

COMPOUND	WATER LOWER	WATER UPPER	WATER RPD	SOIL LOWER	SOIL UPPER	SOIL RPD
Chloroform	82	124	18	NA	NA	NA
Bromodichloromethane	79	124	20	NA	NA	NA
Dibromochloromethane	86	127	18	NA	NA	NA
Bromoform	79	131	21	NA	NA	NA



ORLANDO LABORATORIES, INC.

GC ORGANICS

MATRIX SPIKE RESULTS

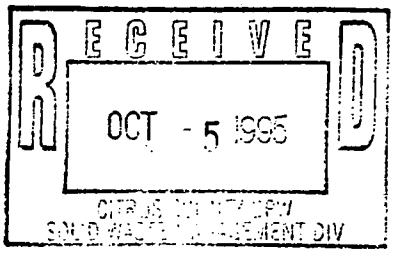
MATRIX : Water
REPORT DATE: 9-22-1995
EPA METHOD : 504

LAB SAMPLE #: 9509255-01
ANALYSIS DATE: 09-20-95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY
Ethylene Dibromide	100	0	68.0	68 *
Dibromochloropropane	100	0	55.0	55 *

MATRIX SPIKE QUALITY CONTROL LIMITS

COMPOUND	WATER LOWER	WATER UPPER	WATER RPD	SOIL LOWER	SOIL UPPER	SOIL RPD
Ethylene Dibromide	69	122	10	NA	NA	NA
Dibromochloropropane	75	124	14	NA	NA	NA



NOTE: * Parameter outside of QC limits due to matrix effects.

Orlando Laboratories, Inc.
P.O. Box 149127, Orlando, FL 32814
(407) 896-6645 FAX (407) 898-6588

CHAIN-OF-CUSTODY RECORD

(INSTRUCTIONS ON BACK)

Page 1 of 1

904-746-5000

① INVOICE TO: (Company and Individual) / ADDRESS (City, State, Zip)	② CONTACT PERSON/PHONE # INVOICE	③ RB NUMBER	④ OLI WORK ORDER #
Citrus County Dept. of Solid Waste P.O. Box 340 Lecanto, FL 34460-0340	Cathy Winker	AF669	
⑤ ORIGINAL REPORT TO: (Company and Individual) / ADDRESS (City, State, Zip)	⑥ CONTACT PERSON/PHONE # REPORT		
Same As Above	Same	9509255	
⑦ (OPTIONAL) ADDITIONAL REPORTS SENT TO: / ADDRESS (City, State, Zip)			
None			
⑧ CLIENT PROJECT NAME	⑨ CLIENT PROJECT #		
Citrus County Landfill Extra			

	⑩ SAMPLE IDENTIFICATION	⑪ DATE/TIME	⑫ COMP	GRAB	WATER	SOIL	OTHER	⑬ SAMPLE DESCRIPTION	⑰ NUMBER OF CONTAINERS	⑱ REQUESTED ANALYSIS: 504 PL, SDI CC BROMIC	⑲ REMARKS
1	Liquid Methanol	9-20-95 1130		X			X		5	X	Bubbles in Vials
2	Sodium Hypochlorite	9.20.95 1140		X			X	9% solution	1	X	Unable to Remove Sample Taken From Tank (504)

Q/S = 0.5 hrs

TRANSFER NUMBER	⑭ RELINQUISHED BY	⑮ DATE/TIME	⑯ ACCEPTED BY
1st		0830 9/19/95	
2nd		9/20/95 15:50	
3rd			

⑳ ADDITIONAL REMARKS: OLI Field Team.

㉑ COOLER #'S: A0224

㉒ SAMPLER'S SIGNATURE

OL-001 (6/93)

LAB

Orlando Laboratories, Inc.
P.O. Box 149127, Orlando, FL 32814
(407) 896-6645 FAX (407) 898-6588

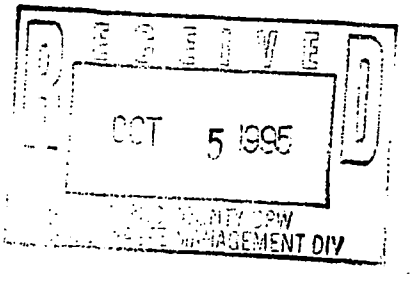
REPORT OF ANALYSIS

Citrus County
Department of Solid Waste
P. O. Box 340
Lecanto, FL 34460-0340
Attn: Cathy Winter

Work Order # : 95-09-300
Date Received: 09/21/95
Report Due by: 10/02/95
OLI Contact: J_BEATO

Work ID: Citrus County Landfill Ex
Samples collected by: OLI Field Team
Total Samples: 3

Sample Identification	Description of Analysis	Description of Analysis
01A Unchlorinated Eff	Trihalomethanes Fecal Coliform Bact. MF Field Data	VOC: Ethylene Dibromide Fecal Streptococcus MF
02A Chlorinated Eff	Trihalomethanes Field Data	VOC: Ethylene Dibromide
03A Method Blank	Trihalomethanes QC for Microbiology	VOC: Ethylene Dibromide



Respectfully Submitted,
ORLANDO LABORATORIES, INC.

Authorized Laboratory Signature

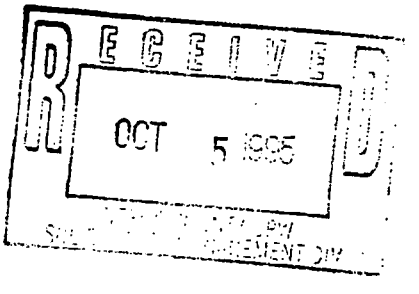
Results of Analysis

Work ID: Citrus County Landfill Ex Work Order: 95-09-300

Client Number:		Unchlorinated Eff	Chlorinated Eff	Method Blank	
OLI Number:		01A	02A	03A	
Dilution:		1	1	1	
Trihalomethanes: Water					
EPA 501 1	Units	Result/Flag	Result/Flag	Result/Flag	MDL
Chloroform	ug/l	1.0 U	2.0	1.0 U	1.0
Dichlorobromomethane	ug/l	1.0 U	1.0 U	1.0 U	1.0
Dibromochloromethane	ug/l	1.0 U	1.0 U	1.0 U	1.0
Bromoform	ug/l	1.0 U	1.0 U	1.0 U	1.0
THM's Total	ug/l	1.0 U	2.0	1.0 U	1.0

Client Number:		Unchlorinated Eff	Chlorinated Eff	Method Blank	
OLI Number:		01A	02A	03A	
Dilution:		1	1	~~1~~	
VOC: Ethylene Dibromide: Water					
EPA 504	Units	Result/Flag	Result/Flag	Result/Flag	MDL
EDB	ug/l	0.02 U	0.02 U	0.02 U	0.02

Client Number:		Unchlorinated Eff
OLI Number:		01A
Fecal Coliform Bact. MF: Water		
EPA SM9222D	Units	Result/Flag	MDL
Fecal Coliform	cfu/100ml	22	1



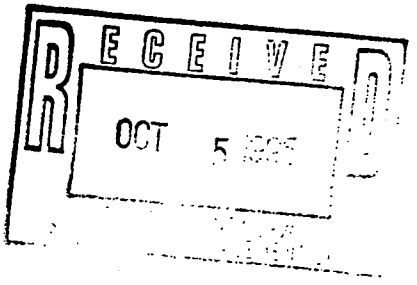
Results of Analysis

Work ID: Citrus County Landfill Ex Work Order: 95-09-300

Client Number:	Unchlorinated Eff
OLI Number:	01A

Fecal Streptococcus MF: Water

EPA SM9230C	Units	Result/Flag	MDL
Fecal Strep	cfu/100ml	85	1



Results of Analysis

Work ID: Citrus County Landfill Ex Work Order: 95-09-300

Client Number: Unchlorinated Eff

OLI Number: 01A

Field Data by: OLI Field Team

SAMPLE TYPE Grab Date Written 10/02/95

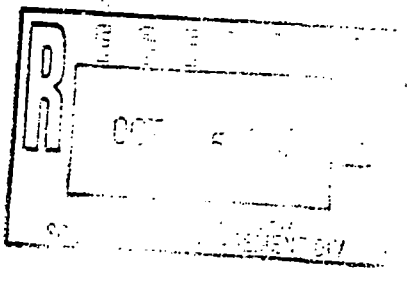
Well Specifications		Field Parameters	
Diameter	NA in.	Temperature	31.0 ^C
Water Level	NA ft.	Conductivity	2000 umhos/cm @ 25C
Total Depth	NA ft.	pH	8.32 units
Column Height	NA ft.	Dissolved Oxygen	NA mg/L
Column Volume	NA gal.	Residual Cl	NA mg/L
Evacuation	NA gal.	Hydrogen Sulfide	NA mg/L
Actual	NA gal.		

Well Evacuation Method NA

Sampling Method Grab

Sample Appearance		Environmental Conditions	
Tint	None	Air Temperature	30.7^C
Color	Clear	Wind	E/0-5
Turbidity	Slight	Rain	None
Odor	None	Atmosphere	Partly Cloudy
		Other	NA

Comments



Results of Analysis

Work ID: Citrus County Landfill Ex Work Order: 95-09-300

Client Number: Chlorinated Eff

OLI Number: 02A

Field Data by: OLI Field Team

SAMPLE TYPE Grab Date Written 10/02/95

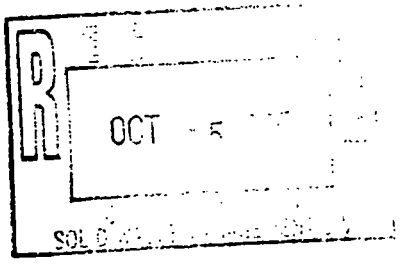
Well Specifications		Field Parameters	
Diameter	NA in.	Temperature	31.0 ^C
Water Level	NA ft.	Conductivity	2000 umhos/cm @ 25C
Total Depth	NA ft.	pH	8.37 units
Column Height	NA ft.	Dissolved Oxygen	NA mg/L
Column Volume	NA gal.	Residual Cl	NA mg/L
Evacuation	NA gal.	Hydrogen Sulfide	NA mg/L
Actual	NA gal.		

Well Evacuation Method NA

Sampling Method Grab

Sample Appearance		Environmental Conditions	
Tint	None	Air Temperature	31.2^C
Color	Clear	Wind	E/0-5
Turbidity	Slight	Rain	None
Odor	Slight/Chlorine	Atmosphere	Partly Cloudy
		Other	NA

Comments



QA for Analysis

Work ID: Citrus County Landfill Ex Work Order: 95-09-300

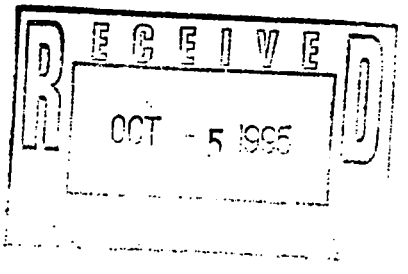
	Test Description	Method	Prep	Run	Analyst
Client No: Unchlorinated Eff OLI No: 01A	Trihalomethanes	EPA_501_1	NA	09/28/95	NAF
	VOC: Ethylene Dibromide	EPA_504	09/25/95	09/25/95	LG

	Test Description	Method	Setup	Read	Analyst
Matrix: Water	Fecal Coliform Bact. MF	EPA_SM9222D	09/21/95 15:10:00	09/22/95 15:55:00	SW

	Test Description	Method	Setup	Read	Analyst
Collected: 09/21/95 10:30:00	Fecal Streptococcus MF	EPA_SM9230C	09/21/95 15:10:00	09/22/95 15:55:00	SW

	Test Description	Method	Prep	Run	Analyst
Client No: Chlorinated Eff OLI No: 02A Matrix: Water Collected: 09/21/95 11:05:00	Trihalomethanes	EPA_501_1	NA	09/28/95	NAF
	VOC: Ethylene Dibromide	EPA_504	09/25/95	09/25/95	LG

	Test Description	Method	Prep	Run	Analyst
Client No: Method Blank OLI No: 03A Matrix: Method Blank Collected: Not specified	Trihalomethanes	EPA_501_1	NA	09/28/95	NAF
	VOC: Ethylene Dibromide	EPA_504	09/25/95	09/25/95	LG



Citrus County
Attn: Cathy Winter

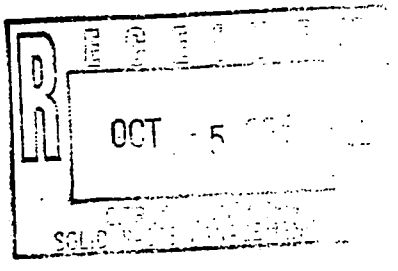
Report Number: 95-09-300

Quality Control Data Sheets

Parameter	OLI Sample #	Matrix Spike % Recovery	Matrix Spike Dup % Recovery	Relative Percent Difference	Analysis Date	Analyst
Fecal Coliform*	9509300-01	NA	NA	40	09/21/95	SW
Fecal Coliform*	9509300-01	NA	NA	40	09/21/95	SW
Fecal Streptococci*	9509300-01	NA	NA	12	09/21/95	SW

Parameter	Sample #	Case Narrative for 95-09-300
Fecal Coliform*	01	Fecal coliform was confirmed positive.
Fecal Coliform*	QC	High relative percent difference (RPD) is due to low analyte concentration.
Fecal Streptococci*	01	Fecal streptococcus was confirmed positive.

* Relative Percent Difference (RPD) was calculated from results of sample and sample duplicate.



ORLANDO LABORATORIES, INC.

GC ORGANICS

MATRIX SPIKE RESULTS

MATRIX : Water
REPORT DATE: 9-29-1995
EPA METHOD : 501.1

LAB SAMPLE #: 9509149-03
ANALYSIS DATE: 9/28/95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY	MSD RESULT	MSD % RECOVERY	RPD
Chloroform	50	0	50.0	100	44.0	88	13
Bromodichloromethane	50	0	45.0	90	42.0	84	7
Dibromochloromethane	50	0	49.0	98	48.0	96	2
Bromoform	50	0	50.0	100	50.0	100	0

MATRIX SPIKE QUALITY CONTROL LIMITS

COMPOUND	WATER LOWER	WATER UPPER	WATER RPD	SOIL LOWER	SOIL UPPER	SOIL RPD
Chloroform	82	124	18	NA	NA	NA
Bromodichloromethane	79	124	20	NA	NA	NA
Dibromochloromethane	86	127	18	NA	NA	NA
Bromoform	79	131	21	NA	NA	NA

ORLANDO LABORATORIES. INC.

GC ORGANICS

MATRIX SPIKE RESULTS

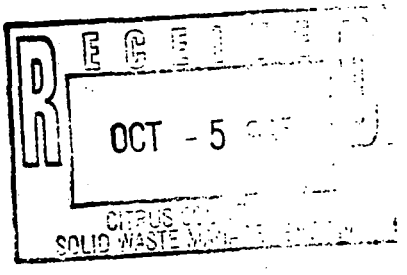
MATRIX : Water
REPORT DATE: 9-25-1995
EPA METHOD : 504

LAB SAMPLE #: 9509285-01
ANALYSIS DATE: 09-25-95

COMPOUND	AMOUNT SPIKED	SAMPLE RESULT	MS RESULT	MS % RECOVERY	MSD RESULT	MSD % RECOVERY	RPD
Ethylene Dibromide	30	0	25.2	84	25.2	84	0
Dibromochloropropane	30	0	29.1	97	28.6	95	2

MATRIX SPIKE QUALITY CONTROL LIMITS

COMPOUND	WATER LOWER	WATER UPPER	WATER RPD	SOIL LOWER	SOIL UPPER	SOIL RPD
Ethylene Dibromide	69	122	10	NA	NA	NA
Dibromochloropropane	75	124	14	NA	NA	NA



Orlando Laboratories, Inc.
P.O. Box 149127, Orlando, FL 32814
(407) 896-6645 FAX (407) 898-6588

CHAIN-OF-CUSTODY RECORD
(INSTRUCTIONS ON BACK)

Page 1 of 1

904-746-5000

① INVOICE TO: (Company and Individual)	ADDRESS (City, State, Zip)	② CONTACT PERSON/PHONE # INVOICE	③ RB NUMBER	④ OLI WORK ORDER #
Citrus County Dept. of Solid Waste	P.O. Box 340 Lecanto, FL 34460-0340	Cathy Winter	A8670	
⑤ ORIGINAL REPORT TO: (Company and Individual)	ADDRESS (City, State, Zip)	⑧ CONTACT PERSON/PHONE # REPORT		
SAME AS ABOVE		SAME	9509300	
⑦ (OPTIONAL) ADDITIONAL REPORTS SENT TO:	ADDRESS (City, State, Zip)			
NONE				
⑧ CLIENT PROJECT NAME	⑨ CLIENT PROJECT #			
Citrus County Landfill Extra.				

⑩ SAMPLE IDENTIFICATION	⑪ DATE/TIME	⑫ COMP	GRAB	WATER	SOIL	OTHER	⑬ SAMPLE DESCRIPTION	⑰ NUMBER OF CONTAINERS	⑱ REQUESTED ANALYSIS: Fecal, Fecal SDWEL, SDWEL	⑱ REMARKS
Unchlorinated Eff.	9.21.95 1030		X	X				6	X X	
Chlorinated Eff	9.21.95 1105		X	X				5	X	

9s = 0.15 hrs (.25 hrs each)

TRANSFER NUMBER	⑭ RELINQUISHED BY	⑮ DATE/TIME	⑯ ACCEPTED BY
1st		0945 9/19/95	
2nd		9.21.95	
3rd			

⑳ ADDITIONAL REMARKS: OLI Field Team

㉑ COOLER #'S: A0061

㉒ SAMPLER'S SIGNATURE

OL-001 (6/93)

LAB

ATTACHMENT TWO

SEPTEMBER, 1995 ANALYSIS

Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #2 INF.
Classification of Groundwater: NA

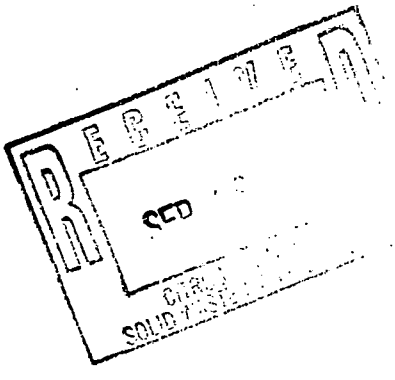
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/06/95 11:40:00
Report Period: NA
Well Purged (Y/N) NA
Well type:
[ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/06/95	7.69 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/06/95	28.5 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/06/95	4000 umhos/cm	1.0 umhos/cm
00410	Alkalinity	Grab	N	EPA_310_1	09/11/95	2650 mgCaC03/	2.0 mgCaC03/
00310	BOD 5 Day	Grab	N	SM_5210_B	09/07/95 15:45	21.8 mg/l	2.0 mg/l
00940	Chloride	Grab	N	EPA_325_2	09/13/95	431 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Grab	N	EPA_410_4	09/12/95	347 mg/l	10 mg/l
00610	Nitrogen: Ammonia	Grab	N	EPA_350_1	09/12/95	10.1 mg/l	0.01 mg/l
83341	Nitrogen: Ammonium	Grab	N	EPA_DER_SOP	09/11/95	9.75 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Grab	N	EPA_353_2	09/07/95	0.07 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Grab	N	EPA_160_1	09/06/95	1690 mg/l	10 mg/l
00625	Nitrogen: Total Kjeldahl	Grab	N	EPA_351_2	09/13/95	22.1 mg/l	0.10 mg/l
00530	Total Suspended Solids	Grab	N	EPA_160_2	09/06/95	299 mg/l	5.0 mg/l

BOD: Setup Date/Time: 09/07/95 15:45:00 Read Date/Time: 09/12/95 11:00:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #4 EFF
Classification of Groundwater: NA

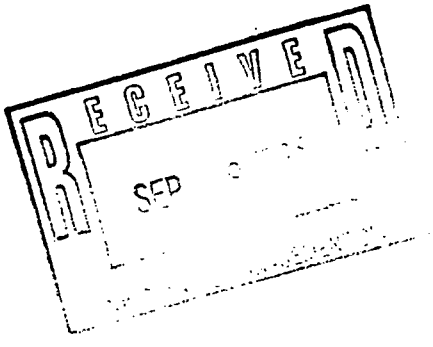
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/07/95 11:30:00
Report Period: NA
Well Purged (Y/N) NA
Well type:
[ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/07/95	7.97 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/07/95	27.1 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/07/95	790 umhos/cm	1.0 umhos/cm
00310	Carbonaceous BOD	Grab	N	SM_5210_B	09/07/95 13:45	3.1 mg/l	2.0 mg/l
00940	Chloride	Grab	N	EPA_325_2	09/13/95	377 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Grab	N	EPA_410_4	09/12/95	122 mg/l	10 mg/l
31616	Fecal Coliform	Grab	N	EPA_SM9222D	09/07/95 15:00	17 cfu/100m	1 cfu/100m
00929	Sodium	Grab	N	EPA_6010	09/12/95	330 mg/l	1.0 mg/l
00610	Nitrogen: Ammonia	Grab	N	EPA_350_1	09/11/95	<0.01 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Grab	N	EPA_353_2	09/15/95	8.60 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Grab	N	EPA_160_1	09/12/95	1510 mg/l	10 mg/l
00600	Total Nitrogen	Grab	N	EPA_SM4500N	09/13/95	11.2 mg/l	0.10 mg/l
00665	Total Phosphorus	Grab	N	EPA_365_1	09/12/95	0.20 mg/l	0.01 mg/l
00530	Total Suspended Solids	Grab	N	EPA_160_2	09/12/95	11 mg/l	5.0 mg/l

F. Coli: Setup Date/Time: 09/07/95 15:00:00 Read Date/Time: 09/08/95 15:00:00
BOD: Setup Date/Time: 09/07/95 13:45:00 Read Date/Time: 09/12/95 11:00:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Order #: 95-09-146-01A
Client: Citrus County

Orlando Laboratories, Inc.
Report of Analysis for DER

Weekly Influent

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #2 INF.
Classification of Groundwater: NA

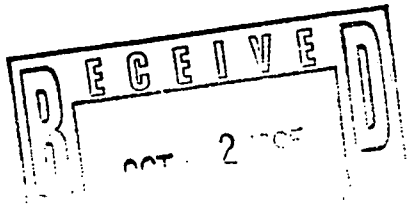
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/13/95 11:25:00
Report Period: NA
Well Purged (Y/N) NA
Well type:
[ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/13/95	7.15 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/13/95	29.8 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/13/95	900 umhos/cm	1.0 umhos/cm
00410	Alkalinity	Grab	N	EPA_310_1	09/15/95	902 mgCaC03/	2.0 mgCaC03/
00310	BOD 5 Day	Grab	N	SM_5210_B	09/14/95 14:10	382 mg/l	2.0 mg/l
00940	Chloride	Grab	N	EPA_325_2	09/19/95	274 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Grab	N	EPA_410_4	09/18/95	648 mg/l	10 mg/l
00610	Nitrogen: Ammonia	Grab	N	EPA_350_1	09/18/95	38.5 mg/l	0.01 mg/l
83341	Nitrogen: Ammonium	Grab	N	EPA_DER_SOP	09/20/95	38.1 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Grab	N	EPA_353_2	09/14/95	0.14 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Grab	N	EPA_160_1	09/14/95	1230 mg/l	10 mg/l
00625	Nitrogen: Total Kjeldahl	Grab	N	EPA_351_2	09/29/95	88.8 mg/l	0.10 mg/l
00530	Total Suspended Solids	Grab	N	EPA_160_2	09/14/95	96 mg/l	5.0 mg/l

BOD: Setup Date/Time: 09/14/95 14:10:00 Read Date/Time: 09/19/95 10:40:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #4 EFF.
Classification of Groundwater: NA

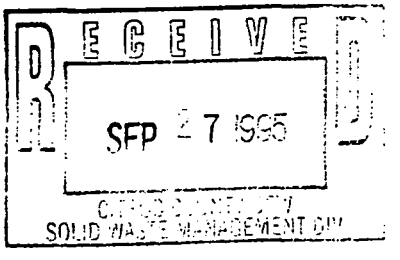
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/14/95 12:20:00
Report Period: NA
Well Purged (Y/N) NA
Well type: [ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/14/95	7.37 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/14/95	37.4 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/14/95	2100 umhos/cm	1.0 umhos/cm
00310	Carbonaceous BOD	Grab	N	SM_5210_B	09/15/95 11:25	34.4 mg/l	2.0 mg/l
00940	Chloride	Grab	N	EPA_325_2	09/19/95	334 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Grab	N	EPA_410_4	09/18/95	159 mg/l	10 mg/l
31616	Fecal Coliform	Grab	N	EPA_SM9222D	09/14/95 15:50	2 cfu/100m	1 cfu/100m
00929	Sodium	Grab	N	EPA_6010	09/18/95	250 mg/l	1.0 mg/l
00610	Nitrogen: Ammonia	Grab	N	EPA_350_1	09/18/95	<0.01 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Grab	N	EPA_353_2	09/15/95	4.20 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Grab	N	EPA_160_1	09/20/95	1170 mg/l	10 mg/l
00600	Total Nitrogen	Grab	N	EPA_SM4500N	09/21/95	4.43 mg/l	0.10 mg/l
00665	Total Phosphorus	Grab	N	EPA_365_1	09/21/95	0.08 mg/l	0.01 mg/l
00530	Total Suspended Solids	Grab	N	EPA_160_2	09/20/95	9.5 mg/l	5.0 mg/l

F. Coli: Setup Date/Time: 09/14/95 15:50:00 Read Date/Time: 09/15/95 15:20:00
BOD: Setup Date/Time: 09/15/95 11:25:00 Read Date/Time: 09/20/95 09:00:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #2 INF.
Classification of Groundwater: NA

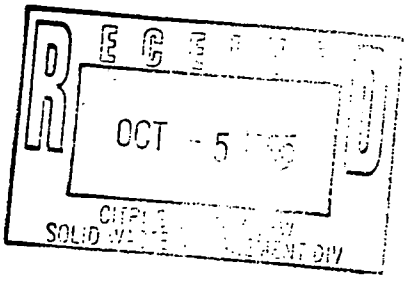
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/20/95 10:55:00
Report Period: NA
Well Purged (Y/N) NA
Well type: [ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Scoop	N	EPA_150_1	09/20/95	7.24 Units	NA Units
00010	Temperature	Scoop	N	EPA_170_1	09/20/95	30.0 ^C	NA ^C
00094	Conductivity	Scoop	N	EPA_120_1	09/20/95	3650 umhos/cm	1.0 umhos/cm
00410	Alkalinity	Scoop	N	EPA_310_1	09/26/95	3700 mgCaC03/	2.0 mgCaC03/
00310	BOD 5 Day	Scoop	N	SM_5210_B	09/21/95 16:35	631 mg/l	2.0 mg/l
00940	Chloride	Scoop	N	EPA_325_2	09/27/95	356 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Scoop	N	EPA_410_4	09/26/95	569 mg/l	10 mg/l
00610	Nitrogen: Ammonia	Scoop	N	EPA_350_1	09/22/95	190 mg/l	0.01 mg/l
83341	Nitrogen: Ammonium	Scoop	N	EPA_DER_SOP	09/29/95	187 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Scoop	N	EPA_353_2	09/22/95	3.29 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Scoop	N	EPA_160_1	09/26/95	1660 mg/l	10 mg/l
00625	Nitrogen: Total Kjeldahl	Scoop	N	EPA_351_2	09/29/95	145 mg/l	0.10 mg/l
00530	Total Suspended Solids	Scoop	N	EPA_160_2	09/21/95	11100 mg/l	5.0 mg/l

BOD: Setup Date/Time: 09/21/95 16:35:00 Read Date/Time: 09/26/95 14:00:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #4 EFF.
Classification of Groundwater: G-II

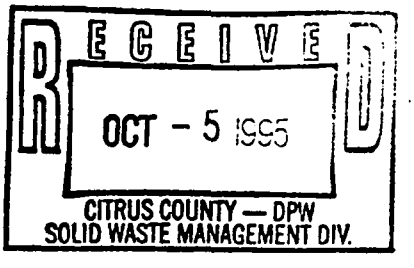
Ground Water Elevation (NGVD):
or (MSL):

Sampling Date/Time: 09/21/95 10:55:00
Report Period: NA
Well Purged (Y/N) YES
Well type:
[ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/21/95	8.37 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/21/95	31.0 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/21/95	2050 umhos/cm	1.0 umhos/cm
00310	Carbonaceous BOD	Grab	N	SM_5210_B	09/21/95 17:55	<2.0 mg/l	2.0 mg/l
00940	Chloride	Grab	N	EPA_325_2	09/27/95	330 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Grab	N	EPA_410_4	09/26/95	63.2 mg/l	10 mg/l
31616	Fecal Coliform	Grab	N	EPA_SM9222D	09/21/95 15:00	17 cfu/100m	1 cfu/100m
00929	Sodium	Grab	N	EPA_6010	09/25/95	280 mg/l	1.0 mg/l
00610	Nitrogen: Ammonia	Grab	N	EPA_350_1	09/22/95	0.11 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Grab	N	EPA_353_2	09/22/95	0.04 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Grab	N	EPA_160_1	09/26/95	1120 mg/l	10 mg/l
00600	Total Nitrogen	Grab	N	EPA_SM4500N	09/29/95	4.23 mg/l	0.10 mg/l
00665	Total Phosphorus	Grab	N	EPA_365_1	10/04/95	1.49 mg/l	0.01 mg/l
00530	Total Suspended Solids	Grab	N	EPA_160_2	09/21/95	<5.0 mg/l	5.0 mg/l

F. Coli: Setup Date/Time: 09/21/95 15:00:00 Read Date/Time: 09/22/95 15:55:00
BOD: Setup Date/Time: 09/21/95 17:55:00 Read Date/Time: 09/26/95 15:00:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #2 INF.
Classification of Groundwater: NA

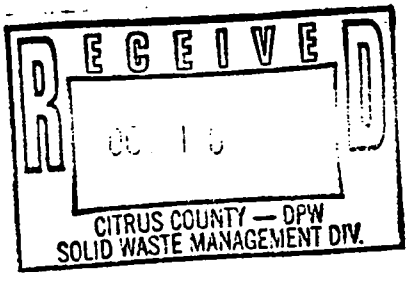
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/27/95 11:40:00
Report Period: NA
Well Purged (Y/N) NA
Well type: [ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/27/95	7.38 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/27/95	33.5 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/27/95	1110 umhos/cm	1.0 umhos/cm
00410	Alkalinity	Grab	N	EPA_310_1	09/29/95	1900 mgCaC03/	2.0 mgCaC03/
00310	BOD 5 Day	Grab	N	SM_5210_B	09/28/95 09:45	19.4 mg/l	2.0 mg/l
00940	Chloride	Grab	N	EPA_325_2	10/06/95	417 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Grab	N	EPA_410_4	10/02/95	281 mg/l	10 mg/l
00610	Nitrogen: Ammonia	Grab	N	EPA_350_1	10/02/95	1.87 mg/l	0.01 mg/l
83341	Nitrogen: Ammonium	Grab	N	EPA_DER_SOP	10/02/95	1.83 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Grab	N	EPA_353_2	10/05/95	0.91 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Grab	N	EPA_160_1	09/29/95	1760 mg/l	10 mg/l
00625	Nitrogen: Total Kjeldahl	Grab	N	EPA_351_2	10/05/95	144 mg/l	0.10 mg/l
00530	Total Suspended Solids	Grab	N	EPA_160_2	09/27/95	108 mg/l	5.0 mg/l

BOD: Setup Date/Time: 09/28/95 09:45:00 Read Date/Time: 10/03/95 08:50:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Citrus County
Attn: Cathy Winter

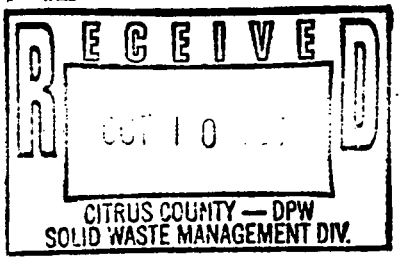
Report Number: 95-09-386

Quality Control Data Sheets

Parameter	OLI Sample #	Matrix Spike % Recovery	Matrix Spike Dup % Recovery	Relative Percent Difference	Analysis Date	Analyst
BOD 5 Day	9509386-01	108	101	7	09/28/95	SW
Total Suspended Solid*	9509297-02	NA	NA	0	09/27/95	SS
Alkalinity	9509413-03	92	92	0	09/29/95	SS
Chemical Oxygen Demand	DI SPIKE	96	89	8	10/02/95	SS
Total Dissolved Solids*	9509400-02	NA	NA	3	09/29/95	SS
Nitrate/Nitrite Combined	9509420-01	98	98	0	10/05/95	GP
Ammonia Nitrogen	9509348-05	115	111	4	10/02/95	GP
Total Kjeldahl Nitrogen	9509442-05	97	99	2	10/05/95	ORV
Chloride	9509386-01	102	101	1	10/06/95	RW

Parameter	Sample #	Case Narrative for 95-09-386
Chemical Oxygen Demand	1	Spike recovery out of QC limits due to matrix interference. A blank spike was analyzed and the recovery was .

* Relative Percent Difference (RPD) was calculated from results of sample and sample duplicate.



Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #4 EFF.
Classification of Groundwater: NA

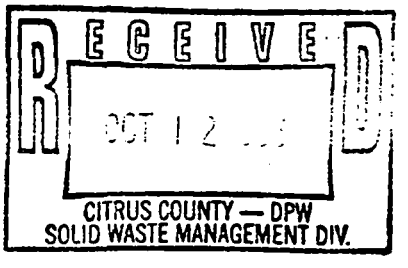
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/28/95 11:04:00
Report Period: NA
Well Purged (Y/N) NA
Well type: [ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/28/95	8.32 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/28/95	28.5 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/28/95	710 umhos/cm	1.0 umhos/cm
00310	Carbonaceous BOD	Grab	N	SM_5210_B	09/28/95 17:30	<2.0 mg/l	2.0 mg/l
00940	Chloride	Grab	N	EPA_325_2	10/10/95	387 mg/l	1.0 mg/l
00340	Chemical Oxygen Demand	Grab	N	EPA_410_4	10/02/95	88.6 mg/l	10 mg/l
00929	Sodium	Grab	N	EPA_6010	10/03/95	340 mg/l	1.0 mg/l
00610	Nitrogen: Ammonia	Grab	N	EPA_350_1	10/02/95	<0.01 mg/l	0.01 mg/l
00620	Nitrogen: Nitrate	Grab	N	EPA_353_2	10/09/95	0.40 mg/l	0.02 mg/l
70300	Total Dissolved Solids	Grab	N	EPA_160_1	10/03/95	476 mg/l	10 mg/l
00600	Total Nitrogen	Grab	N	EPA_SM4500N	10/09/95	1.86 mg/l	0.10 mg/l
00665	Total Phosphorus	Grab	N	EPA_365_1	10/04/95	0.10 mg/l	0.01 mg/l
00530	Total Suspended Solids	Grab	N	EPA_160_2	09/28/95	13 mg/l	5.0 mg/l

BOD: Setup Date/Time: 09/28/95 17:30:00 Read Date/Time: 10/03/95 14:55:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



Citrus County Landfill

PARAMETER MONITORING REPORT

Part III: Analytical Results

Facility GMS # : 4009C00086
Test Site ID # : NA
Well Name: TANK #4 EFF.
Classification of Groundwater: NA

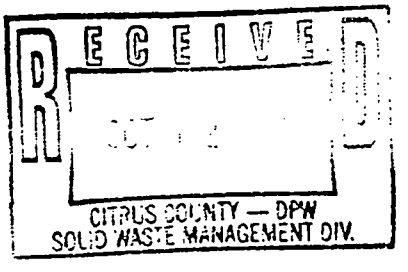
Ground Water Elevation (NGVD): NA
or (MSL): _____

Sampling Date/Time: 09/28/95 11:28:00
Report Period: NA
Well Purged (Y/N) NA
Well type:
[ ] Background
[ ] Intermediate
[ ] Compliance
[ ] Other

STORET Code	Parameter Monitored	Samp Meth	Fld Filt Y/N	Analysis Method	Analysis Date/Time	Analysis Results/Units	Detection Limits/Units
00400	Field pH	Grab	N	EPA_150_1	09/28/95	8.32 Units	NA Units
00010	Temperature	Grab	N	EPA_170_1	09/28/95	28.5 ^C	NA ^C
00094	Conductivity	Grab	N	EPA_120_1	09/28/95	710 umhos/cm	1.0 umhos/cm
31616	Fecal Coliform	Grab	N	EPA_SM9222D	09/28/95 15:25	26 cfu/100m	1 cfu/100m

F. Coli: Setup Date/Time: 09/28/95 15:25:00 Read Date/Time: 09/29/95 15:20:00

Well development: pumping the well prior to sampling to obtain representative ground water samples.
DER form 17-522.900(2) Effective: April, 1994



DER Form No. 17-601.900(1)
Form Title: Domestic Wastewater Treatment Monthly Operating Report
Effective Date: July 1, 1991
DER Application No. (Filled in by DER)

SOLID WASTE LEACHATE TREATMENT FACILITY

Monthly Operating Report

Part II - General Information

(1) Month September Year 1995

(2) Plant's DER Identification Number 4009000086

(3) Plant Name Landfill (Central) Leachate Plant

(4) Plant Address SR 44 3 miles E. Lecanto

(5) City Lecanto

(6) County Citrus

(7) Phone Number (904) 746-2694

(8) Permit Number SO09-187229

(9) Plant Type 1-C

(10) Test Site Identification Number N/A

(11) Fecal Coliform Sample Method

X Membrane Filter ___ Most Probable Number

(12) Type of Effluent Disposal or Reclaimed Water Reuse N/A

(13) Limited Wet Weather Discharge Activated

___ Yes ___ No X Not Applicable

(14) Cumulative Days of Wet Weather Discharge N/A

(15) Plant Staffing

Day Shift Operator Class C Cert. No. 9016

Evening Shift Operator Class ___ Cert. No. ___

Night Shift Operator Class ___ Cert. No. ___

Lead Operator James Culey (Signature) C9016 (Cert. No.)

Parameter	Units	STORET Code	Value
(16) Monthly average daily flow	mgd	050053	.014
(17) Permitted capacity	mgd	—	.030
(18) Three-month average daily flow	mgd	—	.011
(19) Percent of permitted capacity	%	—	47%
(20) $CBOD_5$ Effluent	mg/L	080082	10.4
(21) $CBOD_5$ Effluent	lbs/day	—	N/A
(22) TSS Effluent	mg/L	900201	9.6
(23) TSS Effluent	lbs/day	—	N/A
(24) Minimum pH		—	7.9
(25) Maximum pH		—	8.2
(26) Total N	mg/L	000600	11.2
(27) TKN	mg/L	000625	N/A
(28) Ammonia (NH_3 - N)	mg/L	000610	11
(29) Nitrate	mg/L	071850	8.6
(30) Total Phosphorus	mg/L	000665	1.5
(31) Minimum Chlorine Residual	mg/L	—	1.0
(32) Maximum Chlorine Residual	mg/L	—	2.0
(33) Other Effluent Parameters			
Chloride			357
Sodium			300
TDS			1069
COD			1082

DER Form 17-6015000(1)
Form Title Domestic Wastewater Treatment Plant Monthly Operating Report
Effective Date July 1, 1991
DER Application No. (Filled in by DER)

SOLID WASTE LEACHATE TREATMENT FACILITY

Monthly Operating Report

(34)

Month September Year 1995

Day of the Month	Flow (mgd)	Chlorine Residual after Contact	Chlorine Residual after Dechlorination	$CBOD_5$ Influent (mg/L)	TSS Influent (mg/L)	$CBOD_5$ Effluent (mg/L)	TSS Effluent (mg/L)	pH Effluent	TKN Effluent (mg/L)	NH_3 - N Effluent (mg/L)	Nitrate Effluent (mg/L)	Total P Effluent (mg/L)	Fecal Coliform (#/100ml)	Chloride	Sodium	TDS	COD	TOTAL N
1	.012	1.0						7.9										
2	0	—						—										
3	0	—						—										
4	0	—						—										
5	.013	1.5						8.0										
6	.007	1.2						7.9										
7	.020	1.5				3.1	11	8.0		.01	8.6	.2	17	377	330	510	122	11.2
8	.016	1.1						8.0										
9	.026	—						—										
10	.026	—						—										
11	.015	1.6						8.1										
12	.003	1.9						8.1										
13	.012	2.0						8.0										
14	.011	2.0				34.4	9.5	8.1		.01	4.2	.08	2	334	250	1170	159	4.4
15	.011	2.0						8.0										
16	.011	—						—										
17	0	—						—										
18	.014	1.0						7.9										
19	.010	1.2						7.9										
20	.014	1.2						8.0										
21	.009	2.0				2.0	5.0	8.0		.11	.04	1.5	17	330	280	1120	63.2	4.2
22	.021	2.0						8.0										
23	.03	—						—										
24	0	—						—										
25	0	—						—										
26	.012	2.0						8.0										
27	.013	1.6						8.2										
28	.009	1.8				2.0	13	8.0		.01	.4	.1	26	387	340	1476	86	1.9
29	.014	2.0						8.1										
30	0	—						—										

Lead Operator: This is to certify that I am familiar with the information contained in this report and that to the best of my knowledge and belief, this information is true, complete and accurate.

Signed: [signature] Date: 10-13-95

Name (Please Type) _____

Company Name _____ Telephone No. (Please Type) _____

ATTACHMENT THREE

PROPOSED SOLUTE TRANSPORT MODEL STUDY

Attachment A-10

Attachment A-10 to the AGREEMENT between CH2M HILL, INC. ("CONSULTANT"), and Citrus County ("COUNTY") for a PROJECT generally described as:

Consulting Services to Prepare Technical Evaluations, Permit Application, Construction Documents and Construction Management Services for the Citrus County Solid Waste Management Program.

The specific scope of services is as follows:

Task 32 - Computer Simulation of Solute Concentration in Groundwater at the Citrus County Landfill

This scope of services will provide Citrus County (hereinafter referred to as the "COUNTY") with the professional engineering services required for simulation of the sodium and chloride concentration in groundwater at the Citrus County Landfill.

I. Project Understanding

The COUNTY is currently operating a percolation pond for disposal of treated landfill leachate. The percolation pond is located between the closed 60-acre landfill and the active 80-acre landfill expansion. The leachate has a sodium concentration of approximately 400 mg/l and a chloride concentration of approximately 400 mg/l. The Florida Department of Environmental Regulation (FDEP) has requested the COUNTY perform computer simulation of solute transport to predict the range of sodium and chloride concentrations in the groundwater at the facility boundary. Results of the modeling will be used to support continued operation of the pecolation pond.

II. Description of Work

Task 32.1 - Literature Review

Reports documenting the hydrogeology of the study area will be reviewed and evaluated. Recent onsite investigations performed by CH2M HILL and others will also be included in the review. The COUNTY will be responsible for providing copies of onsite reports of investigation.

Task 32.2 - Conceptual Model Development

Results of the literature review will be used to develop a conceptual model of the aquifer system in the study area. The conceptual model will identify discrete hydrogeologic units and the factors influencing solute transport at the site. Representative values for aquifer characteristics will also be summarized.

Task 32.3 - Solute Transport Modeling

A three-dimension solute transport model will be constructed. The model will include infiltration from both the leachate pond and an onsite stormwater pond and will simulate solute transport in the groundwater flow system for up to a 20-year period. Model limits will extend beyond the site boundaries to facilitate evaluation of solute concentrations at the site boundaries.

A uniform hydraulic gradient will be used in the model. The magnitude and direction of the gradient will be estimated from the most recent upper Floridan aquifer potentiometric surface maps (average of May and September). Up to five simulations will be conducted to address uncertainties in aquifer parameters values.

Task 32.4 - Technical Memorandum

A brief technical memorandum (TM) will be prepared to document the solute transport modeling effort. The TM will include:

- Summary of study area hydrogeology
- Description of solute transport model construction
- Model-derived sodium and chloride iso-concentration contours plots for each model run

Five copies of the TM will be provided.

Task 32.5 - Project Meetings

Upon completion of Task 2, CH2M HILL will conduct a meeting in the Tampa office of the FDEP to present the solute transport model approach. Task 3 will not commence until FDEP comments are received and adjudicated.

III. Compensation

CH2M HILL is to be compensated for the work described in this work order as shown in Attachment B-10.

Attachment B-10

Attachment B-10 to the AGREEMENT between CH2M HILL, INC., ("CONSULTANT"), and Citrus County ("COUNTY") for a PROJECT generally described as:

Consulting Services with the professional engineering services required for simulation of the sodium and chloride concentration in groundwater at the Citrus County Landfill.

Article 2. Compensation

Compensation for this Task will not exceed the amount contained in the following table without prior authorization by the COUNTY.

Task	Lump Sum
Task 32-Solute Modeling	$15,000.00

This Attachment B-10 supersedes all prior written or oral understandings of the Compensation, and may only be changed by a written amendment executed by both parties.

IN WITNESS WHEREOF, the parties execute below:

FOR COUNTY:
CITRUS COUNTY, FLORIDA

_____ By:_____
Vicki Phillips, Chairman
BOARD OF COUNTY
COMMISSIONERS OF
CITRUS COUNTY,

Print Name:_____

FLORIDA

Date:_____

FOR CONSULTANT:
CH2M HILL, INC.

_____ By:_____

Print Name:_____ D S Holmes Vice President
Print Name and Title

IV. Assumptions

1. The solute transport model will consist of no more than three unique layers.
2. Collection and analysis of additional field data is not anticipated.
3. Aquifer characteristics are horizontally uniform.
4. Areial recharge due to precipitation will not be simulated.
5. Model calibration is not anticipated.
6. It is anticipated that all the work described in this scope of services will be completed before January 31, 1996, assuming a favorable response from the FDEP.

This Attachment A-10 supersedes all prior written or oral understandings of the Compensation, and may only be changed by a written amendment executed by both parties.

IN WITNESS WHEREOF, the parties execute below:

FOR COUNTY:
CITRUS COUNTY, FLORIDA

_____ By:_____
Vicki Phillips, Chairman
BOARD OF COUNTY
COMMISSIONERS OF
CITRUS COUNTY,

Print Name:_____

FLORIDA

Date:_____

FOR CONSULTANT:
CH2M HILL, INC.

_____ By:_____

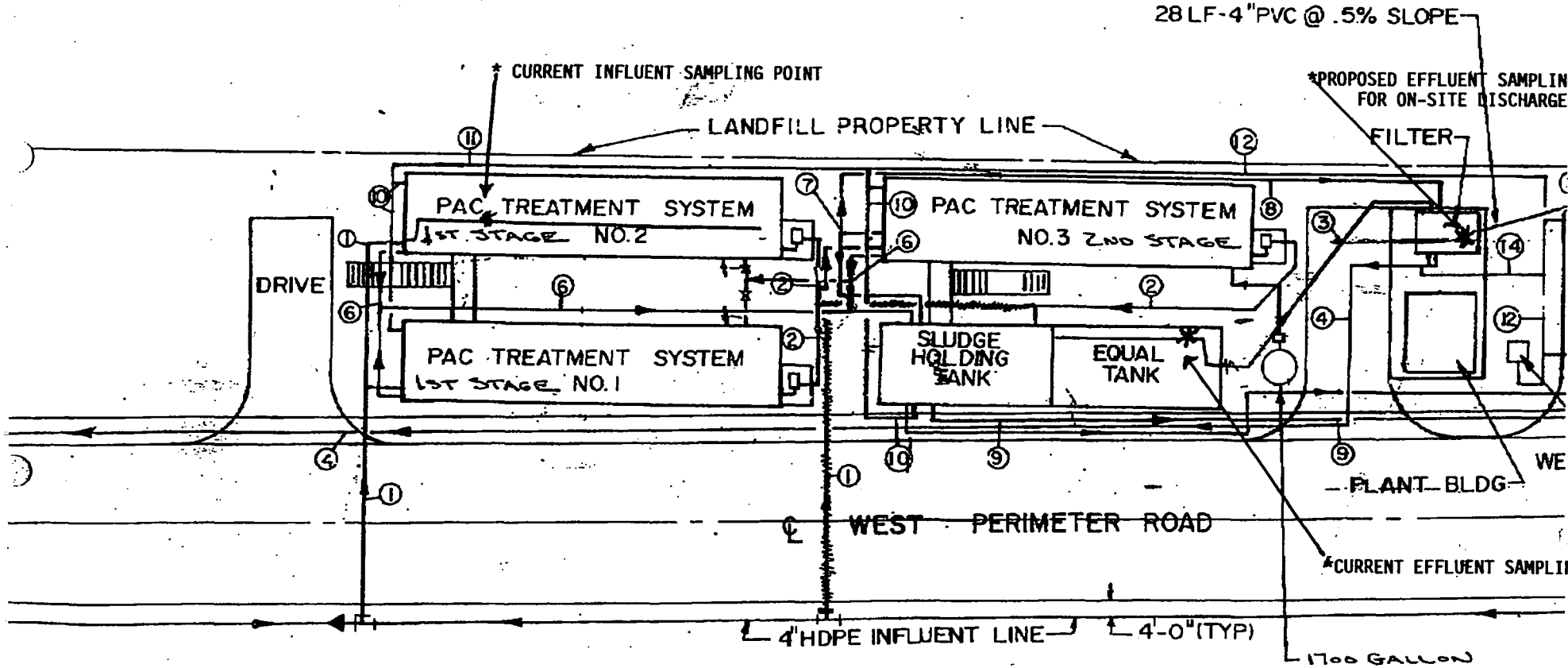
Print Name:_____ D.S. Holmes Vice President
Print Name and Title

ATTACHMENT FOUR

DIAGRAM - LEACHATE SAMPLING LOCATIONS

CITRUS COUNTY, FL

PIPING MODIFICATIONS FOR TWO STAGE DENITRIFICATION



1. 4" HDPE LEACHATE INFLUENT LINE TO P.A.C.T. TREATMENT PLANT NO. 1, 2 & 3
2. 4" HDPE EFFLUENT FORCE MAIN LINE TO EQUALIZATION TANK
3. 11/2" EFFLUENT FORCE MAIN LINE TO FILTERS
4. 4" HDPE EFFLUENT LINE TO PERCOLATION PONDS
5. 4" PVC BACKWASH DRAIN LINE TO M.H.
6. 4" HDPE W.A.S. LINE TO AEROBIC DIGESTER
7. 4" P.V.C. RAW SUPPLY LINE TO AEROBIC DIGESTER
9. 3" PVC DECANT LINE TO PLANT DRAIN P.S. (SLOPE @ 1.75%)
10. 2" PVC NON POTABLE WATER LINE (TYP. TO ALL P.A.C.T. UNITS)
11. 3" PVC NON POTABLE WATER LINE
12. 4" PVC NON POTABLE WATER LINE
13. 3/4" PVC NON POTABLE WATER LINE TO CONTROL PANEL AREA
14. 3/4" PVC NON POTABLE WATER LINE TO FILTER
15. 1-1/4" PVC NON POTABLE WATER LINE TO SLUDGE DRYING BEDS

CITRUS COUNTY CENTRAL LANDFILL LEACHATE TREATMENT FACILITY

I N T E R O F F I C E M E M O R A N D U M

Date: 10-Oct-1995 03:12pm EST
From: Kim Ford TPA
FORD_K
Dept: Southwest District Offi
Tel No: 813/620-6100
SUNCOM: 542-6100 Ext. 382

TO: Robert Butera TPA (BUTERA_R)

Subject: CITRUS COUNTY LANDFILL OPERATION PERMIT MODIFICATIONS

A modification is pending for the current operating permit which has an expiration date of October 1, 1995. Administratively this is fine, but I would like include all forseeable revisions now to prevent the need for other requests prior to issuance of the renewal. I know their certification for the modifications to the leachate treatment plant has not been approved and I know Allison has had discussions about discharges to the percolation pond and possible monitoring changes. I just want to let you know that if you or Allison see the need for permit revisions, now is a good time to include them.

Department of Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619

Virginia B. Wetherell
Secretary

October 10, 1995

Ms. Susan Metcalfe, P.G.
Citrus County
Solid Waste Management
Post Office Box 340
Lecanto, FL 34460-0340

Re: Citrus County Central Landfill
Modification No.: 277526
Permit No.: SO09-187229, Citrus County

Dear Ms. Metcalfe:

This is to acknowledge receipt of your request for a permit modification received September 15, 1995 for site improvements of the solid waste management facility referred to as the Citrus County Central Landfill.

This letter constitutes notice that a permit will be required for your project pursuant to Chapter(s) 403, Florida Statutes.

Your application for a permit is incomplete. Please provide the information listed below promptly. Evaluation of your proposed project will be delayed until all requested information has been received.

The following information is needed in support of the solid waste permit modification subject to Chapter 62-701, Florida Administrative Code (F.A.C.):

1. Please provide proof of ownership or lease agreement for the old 60 acre site.

2. Please provide the drawings and narrative for the temporary transfer station (Attachment C) as indicated in your September 14, 1995 letter.

3. Please describe how the County intends to comply with the above-ground closure criteria for the north slope which "shall not be steeper than three feet horizontal to one foot vertical rise" pursuant to F.A.C. 62-701.600(5)(e).

4. Please provide plan sheets with cross-sections for Phase I operation.

5. Please include all proposed site improvements and permit revisions as part of this pending permit modification.

Please provide all responses that relate to engineering required for construction and operation, signed and sealed by a professional engineer. This includes all technical responses that require conclusions and recommendations regarding existing site conditions.

"NOTICE! Pursuant to the provisions of Section 120.600, F.S. and Chapter 62-12.070(5), F.A.C., if the Department does not receive a complete response to this request for information within 30 days of the date of this letter, the Department may issue a final order denying your application. You need to respond within 30 days after you received this letter, responding to all of the information requests and indicating when a response to any unanswered questions will be submitted. If the response will require longer than 30 days to develop, you should develop a specific time table for the submission of the requested information for Department review and consideration. Failure to comply with a time table accepted by the Department will be grounds for the Department to issue a Final Order of Denial for lack of a timely response. A denial for lack of information or response will be unbiased as to the merits of the application. The applicant may reapply as soon as the requested information is available."

You are requested to submit your response to this letter as one complete package. If there are points which must be discussed and resolved, please contact me at (813) 744-6100, extension 382.

Sincerely,

Kim B. Ford, P.E.
Solid Waste Section
Division of Waste Management

KBF/ab

cc: Gary Kuhl, P.E., Citrus County
Mike Moore, P.E., Citrus County
Gary Panozzo, P.E., CH2M Hill
Robert Butera, P.E., FDEP Tampa
Allison Amram, P.G., FDEP Tampa

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

REPLY TO:
P.O. Box 340
Lecanto, FL 34460-0340

September 26, 1995

Robert Butera, P.E.
Solid Waste Section
Dept. of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619-8318

RE: Citrus County Central Landfill
Permit Nos. SO09-187229, SF09-211030

Dear Mr. Butera:

As we mentioned during our meeting last week, Citrus County has obtained approval of the Land Management Advisory Council for a sublease from the Division of Forestry of the 60-acre closed landfill site which lies immediately to the west of our active landfill. We are currently working on exact wording of the lease agreement with Forestry and the Division of State Lands. The agreement will be for a long-term lease (>25 years) and will allow non-disposal uses for the site, perhaps including soil storage, office or maintenance facilities, recycling or yard waste processing facilities and access. In return, the County will improve roads and survey cogangrass infestations for Forestry.

The first use of this agreement will be related to realignment of our access road. That change is necessitated by the design for widening SR44 in our area. We indicated this use in a request for a minor permit modification to SO09-198229 recently. No other uses are expected in the near future.

We will file a copy of the executed lease agreement with your office as it relates to the above permits as soon as it is received.

Yours truly,

Susan J Metcalf

Susan J. Metcalfe, Director
Division of Solid Waste Management

SJM:cms
cc: Gary W. Kuhl, Dir. Dept. Public Works

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 9/26/95 Subject MOBILE

Time 2:50 Permit No. _____

County CITRUS

M & Susan METRAILER Telephone No. (904) 746 5000

Representing CITRUS County

[ ] Phoned Me [✓] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting _____

Summary of Conversation/Meeting

I REQUESTED 2

1. DETAILS FOR CULVERT IN DROP OFF AREA
2. TRANSFER STATION PLANS
3. SOIL FACTOR IN SLOPE ANALYSIS
4. NOTIFY SURROUNDING ABOUT ACCESS ROAD

(continue on another sheet, if necessary)

Signature [signature]

Title _____

PA-01
1/93
hjs

Citrus SO permit file

Florida Department of
Environmental Protection

Lawton Chiles
Governor

Southwest District
3804 Coconut Palm Drive
Tampa, Florida 33619
813-744-6100

Virginia B. Wetherell
Secretary

FAXED

FAX TRANSMITTAL SHEET

9/26/95
Date

TO: Susie Metcalfe

DEPT.: Citrus Solid Waste

FAX #: 904/527-1204

FROM: Allison Amram

DEPT.: D.E.P., Tampa Office

PHONE: 813-744-6100 or SunCom 542-6100 Ext. 336
FAX(local)744-6125 or (SunCom) 542-6125

SUBJECT:

COMMENT: 17-522, dated 4/14/94 - now 62-522 (no changes)

TOTAL NUMBER OF PAGES, INCLUDING COVER PAGE: 14

RECEIVED BY:

PHONE:

FDEP-SWD (TAMPA) Fax:813-744-6084

** Transmit Conf.Report **

Sep 26 '95 11:40

FDEP-SWD (TAMPA) ---> 89045271204	
No.	0005
Mode	NORMAL
Time	1'19"
Pages	3 Page(s)
Result	O K

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460
(904) 746-4107 — Fax (904) 746-1203

Reply To:

Div. Solid Waste Mgmt.
Susan J. Metcalfe, Director
904/746-5000
FAX: 904/527-1204

TIME: 12:10

NO. PAGES: 1 including cover sheet

~~TO:~~ From: Allison Ambram

~~FROM:~~ To: Susie Metcalfe

RE: 17-522 dated 4-14-94
Mon 62-522 - no changes

MESSAGE: Please refax pages 13 and 14. We never received.

Thank you

Citrus SO permit file

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 9/25/95 Subject ZOD

Time 4:30 Permit No.

County Citrus

M Susan Metcalfe Telephone No. 904/746-5000

Representing Citrus Co

[ ] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

Called to let her know that she can apply for ZOD modification if she ~~can~~ meets the criteria in 62-522.600. ~~Or~~ DEP would need solute modeling of sodium in order to approve - need to make sure that gw @ property boundary won't exceed the gw Na standard. Once Citrus has the THM sample data + a schedule for the Na model, we can evaluate provisional use of the perc ponds for treated leachate

(continue on another sheet, if necessary)

Signature Allison Amman

Title PG1

PA-01
1/93
hjs

Citrus SF permit file

I N T E R O F F I C E M E M O R A N D U M

Citrus

Date: 22-Sep-1995 09:19am EST
From: Chongman Lee TAL
LEE_C@A1@DER
Dept: Waste Management
Tel No: 904/921-9969
SUNCOM:

TO: Allison Amram TPA (AMRAM_A@A1@TPA1)

Subject: Monitor Well ID #

The requested Test Site ID # is 4009A17478 (Monitor Well MW-E of Facility ID 4009C00086). It was assigned a few months ago.

Thanks.

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 9/19/95 Subject No-gw exemption

Time 1:30 Permit No.

County Citrus

M Cynthia Christen Telephone No. SC 291-9610

Representing DOC

[ ] Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

Kathy Anderson - as long as they meet 62-522.600 they can modify the WOD - She spoke w/ Chris McGuire & Cynthia Christen

(continue on another sheet, if necessary)

Signature Alison Ammann

Title PG1

PA-01
1/93
hjs

I N T E R O F F I C E M E M O R A N D U M

Date: 19-Sep-1995 02:04pm EST
From: Cynthia Christen TAL
CHRISTEN_C@A1@DER
Dept: Office General Counsel
Tel No: 904/488-9730
SUNCOM:

TO: Allison Amram TPA (AMRAM_A@A1@TPA1)

Subject: RE: Na Exemption for Groundwater

Well, I found the old memo you sent to me.
Sodium exemptions, or any ground water quality exemption under 62-520.500 have been used for off-site non-compliance, but the rule is not limited to that. However, there are other mechanisms for extending the ZOD to the property boundary that are not so costly. See rule 62-522.500(3)(d). If a ZOD to the property boundary is not enough, then an exemption is the only possibility. From what you describe, the surrounding conditions may not be a hindrance, unless the state wants to be a hard nose about its forest.

I guess for more explanation, we do need to talk. Call me at SC 291-9610.

Florida Department of

Memorandum Environmental Protection

TO: Bob Butera, P.E.
Kim Ford, P.E.
Jay Thabaraj, Ph.D.

FROM: Allison Amram, P.G.

SUBJECT: Citrus County Meeting tomorrow on the Leachate Treatment Plant and Groundwater Activities

DATE: September 18, 1995

==========

I'd just like to summarize some of the issues that will be discussed at tomorrow's Citrus County meeting concerning the leachate treatment plant modifications and sampling, and the current groundwater conditions at the landfill.

Leachate Treatment Plant Issues

The analytical testing results for June, July and August are generally good, and meet the goals described in the operating permit, Specific Condition No. 13. In July the County did the extensive Appendix II parameter testing, and found EDB and trihalomethanes exceeding the groundwater standards. The trihalomethanes are probably from the addition of chlorine, but no explanation for the EDB has been proposed by the County. In August the County adjusted the methanol feed to try and reduce COD, and the nitrates rose above the 12 mg/l limit. All other times the nitrate has met this limit.

The County is still unclear about the meaning of "acceptable CBOD5:COD ratio", and although Jay has talked with them several times, I expect this issue to be raised at the meeting. Once again, I'll defer this question to Jay.

The leachate treatment plant looks like it is working, but is not designed to treat salts. Recently the sodium has exceeded the groundwater standard in the downgradient Zone of Discharge (ZOD) well, and I have asked the County how they intend to remedy this situation.

Groundwater Issues

The County is doing contamination assessment activities along the western side of the landfill, where vinyl chloride and benzene have been exceeding groundwater standards. They should be updating us on the progress that they have made this summer, and expected report submittal date. I also expect them to discuss their options for expanding their zone of discharge to the other side of the closed landfill, or discuss a groundwater exemption from the sodium standard, based on water uses in the area.

aa

Citrus SO File
9/19/95
p1/3

Citrus County Landfill Meeting

— Leachate treatment plant performance —
• EDB may be a byproduct of chlorination, as well as THMs. Have resampled - results in 2 weeks
• Trying to reduce chlorine amounts
• When using sand filter, should reduce bacteria, allowing the chlorine amount to be reduced (less THMs will be produced)
• COD since June, usu. <100 in effluent; 200-500 in influent
COD high according to Jay
Susie - When reducing methanol, COD goes down, but 75 is about the bottom limit. Methanol not impacting effluent BOD as expected.
Problem w/ high COD + chlorine is production of THMs.
Susie will submit the results of THM testing

— Sodium in GW
Operating permit renewal - want to have one ZOD for the site, so perc ponds would be monitored for compliance @ the property boundary. I will check w/ OGC to see if we can move the ZOD for the perc ponds to the property boundary. Cl also

need to check ~~on~~ if Citrus can use the ponds while investigating the Sodium issue. County would need to show that sodium will not exceed the gw standard @ the property boundary wells. Must support w/ some kind of solute model.

- County will be leasing area of closed landfill from Withlacoochee forest. They will send us notification of this.

County BOCC -
Taking bids on LF expansion to the North (~150' more liner) to get ~5 yrs fill space
Will send us a copy of the report

- Op. plan response to SO renewal - submit by 10/15
- Construct + operate plan for Nov.

October - will present RFP for 6 parts of County's solid waste needs

- Pursuing regionalization w/ Sumter, Levy, Marion, Alachua, Citrus Coo.

- No longer pursuing Pasco incinerator for disposal - costs changed.

- Citrus Co. Commissioner is writing Sec'y Wetherall on the 2° containment issue for the leachate treatment / storage tanks. Citrus SW will send ~~Ea~~ B6 a copy.

- Closed area Contamination Assessment - Duplicate sampling scheduled for ? Slug testing done - plan to send a report in a year - want to monitor trends. Susie will have CH2MHill send me an update - 1pg. status letter.

Allison Amram

Florida Department of Environmental Protection

Southwest District • 3804 Coconut Palm Dr. • Tampa, Florida 33619
Lawton Chiles, Governor 813-744-6100 Virginia Wetherell, Secretary

DATE: 9/19/95

TIME: 2 pm

SUBJECT: Citrus County Central Landfill - LTP + GW Issues

ATTENDEES

Name	Affiliation	Telephone
Allison Amsam	FDEP	813/744-6100 x 336
Gary W. Kuhl	Citrus County	904 746 4107
Susan J Metcalfe	Citrus County	904-746-5000
John Miller	HYDRO Q	813-269-9405
G.J. THABARAJ	FDEP	813-744-6100 x 40
R.J. BUTERA	HEP	813-744-6100 x451

TPA-02
04/93

NOTICE OF MEETING

Today's date: 9/13/95 Writer: AAmram

Date of meeting: 9/19/95

Time: 2 pm

Place: Waste Conf Room

Subject: Citrus Co landfill - leachate treatment plant + groundwater issues

Explanation:

Requested by: Susie Metcalfe Ph.# 904/746-5000

Names of attendees other than DER: Susie Metcalfe, Gary Kuhl - Citrus Co
John Miller - Hydro Q

Local Program notified: ___/yes ___/no Attending?

Copies to anticipated in-house attendees:
Kim Ford
Bob Butera
Jay Thabaraj

Information copies to:

TPA-04
07/88

HYDRO Q

P.O. Box 280157
Tampa, Florida 33682-0157
USA

13542 N. Florida Avenue
Suite 215-G
Tampa, FL 33613
USA

Memorandum

DATE: September 18, 1995
TO: Holders of Copies of Groundwater Monitoring Plan 80-Acre Landfill Expansion Citrus County Central Landfill (April 1995)
CC: Susan R. Metcalfe, P.G./Citrus County Department of Solid Waste
FROM: John Miller
SUBJECT: Replacement (Revised) Pages to be Inserted in Original Plan

---

Attached find copies of replacement pages to be inserted into the revised groundwater monitoring plan for the Citrus County Central Landfill.

- Text to be inserted according to page number: 5, 7, 20, 23, 50, 66, 67, 70, 72, 73, 75, and 76
- Table 3 to replace present Table 3 following Figure 6.
- Figures 6 and 25 to replace present figures
- A memorandum from DEEP VENTURE to Susan Metcalfe to be inserted in Appendix C following Construction Details for Monitor Well MW-D.

2.0 HYDROGEOLOGY AND HYDROLOGY

2.1 REGIONAL GEOLOGIC FRAMEWORK

The geology of Citrus County is characterized by thick, gently dipping Tertiary-age limestones with overlying sand and clay beds (Figure 3). The limestones are part of a sedimentary sequence of calcareous rocks which is in excess of 6,000 feet thick (Applin and Applin, 1944). The limestone units were deformed by the Ocala Uplift about 25 million years ago, producing an inclination (dip) in the rocks to the southwest in this area, accompanied by a rather regular rhombic pattern of vertical rock fracturing and faulting. This regional structural feature is oriented in a northwest-southeast direction.

In the area of the landfill, the uppermost limestone unit is probably the dense, 60- to 120-foot thick Suwannee Limestone, beneath which is the Crystal River Limestone. Overlying the limestones are siliceous clastic units (Vernon, 1951). Deposition of the clastics, primarily sands, clayey sands and clays, took place on a karstic surface on top of the limestones, therefore these clastic materials are discontinuous. The sand and clay unit above the limestone in the area of the landfill is probably the Alachua Formation, with the Coharie-Okefenokee Formation above that (Vernon and Puri, 1964).

2.2 REGIONAL HYDROGEOLOGY

Groundwater in central Citrus County occurs under non-artesian conditions, except where orange-colored, silty, clayey sands of the Alachua Formation form a semi-confining layer. However, these low permeability units are discontinuous and cannot be relied upon to provide a confining layer. In the area of the landfill, it appears that the non-artesian aquifer is in direct hydraulic connection with the underlying Floridan aquifer. Essentially, these two units act as one hydraulic unit. The aquifer is recharged by the infiltration of rainfall. According to Stewart (1980) the site lies in a "high recharge" area estimated to receive 10 to 20 inches recharge per year.

The elevation of the regional potentiometric surface of the Floridan aquifer in the vicinity of the landfill site was approximately 8-9 feet above mean sea level in May 1987 (Schiner, 1987). The potentiometric surface changes very little between the wet and dry seasons due to relatively little groundwater extraction in the area (Fretwell, 1983) and, also, due to the moderately high transmissivity of the limestones (discussed below). The highest recorded daily water level in a well between Lecanto and Inverness was 12.72 feet in October 1982, and the lowest was 5.75 feet in February 1982. Regional flow in the Floridan aquifer beneath the

site is generally westward toward the Gulf of Mexico.

Hydraulic transmissivities of the Floridan aquifer in western Citrus County have been reported by others to range from 9.0×10^4 to 2.0×10^6 ft^2/d (Fretwell, 1983).

2.3 SITE-SPECIFIC GEOLOGY AND GEOLOGIC UNITS

During the course of the 1985 investigations by Seaburn and Robertson, Inc., two deep standard penetration test (STP) borings were performed. One boring was drilled to a depth of 135 feet and the other to a depth of 250 feet. These borings confirmed the presence of a very irregular upper surface of the limestone at the site. In Boring A, on the western boundary of the 60-acre site, the top of limestone was at 68.5 feet depth. This limestone is overlain 5.5 feet of sand, followed by a unit comprised of about 18 feet of sandy siliceous clay and clay, which is overlain by about 45 feet of sand and silty sand. A monitoring well, former MW-A (replaced in early 1994 by MW-AA), was installed at this location.

In Boring B, located in the southeast corner of the 60-acre site, the top of the limestone was encountered at a depth of 176 feet. This is overlain by sand, with two minor zones of silty-clayey sand and sandy clay. A monitoring well, MW-B, was installed at this location.

Seven additional borings performed previously for the Citrus County Department of Technical Services east and south of the 60-acre site confirmed the irregular limestone surface (Seaburn and Robertson, Inc., 1985). Limestone was encountered in two of these borings offsite to the south of the site at depths of approximately 40 feet. Four borings to the east of the site, in what is now referred to as the 80-acre expansion site did not encounter limestone to depths of 100 feet, the maximum depth of exploration in that area. Geologic cross sections prepared by Seaburn and Robertson, Inc., are included in Appendix A.

An additional 8 borings were conducted in the 80-acre tract in 1988 by Universal Engineering Services to depths ranging from 80 to 125 feet, not encountering limestone. These sediments tend to grade downward from fine-medium sand, to clayey fine sand, to silty fine sand, to silty fine-medium sand containing discontinuous layers of a slightly clayey, silty fine sand. Geologic cross sections of the site were prepared by Post, Buckley, Schuh and Jernigan, Inc. (1988a), and are included in Appendix A. During excavation for Phase 1 of the active site, a limestone boulder was encountered at a depth of about 80 feet, near the west side of the excavation.

being used.

Figure 9 shows the water table for April 1994, toward the end of the dry season. Groundwater flow is west-southwesterly. There is a groundwater gradient of approximately 4.1 feet/mile across the site in this direction.

3.3 SURFACE WATER MONITORING

There is no surface water monitoring because of the lack of bodies of surface water on or near the site. Drainage in and around the area is closed, with drainage water eventually percolating into the soil or being lost through evaporation from areas of temporary standing water or through evapotranspiration from seasonal wet areas.

3.4 LEACHATE MONITORING

Raw leachate is sampled, as of September 15, 1995, at one (1) location. This location is a tank associated with the leachate treatment plant. Tank 1 is sampled for the leachate influent (underdrain leachate plus contaminated stormwater). Treated leachate is sampled from Tank 4. Sludge from the treatment process is analyzed on an annual basis.

The County has modified the leachate treatment plant. The operational testing period has been completed. The County is awaiting approval from the FDEP for disposal to the onsite percolation ponds.

3.5 WATER QUALITY

3.5.1 GROUNDWATER

3.5.1.1 Parameters Monitored

Existing monitoring wells for the 80-acre expansion are being sampled semi-annually for the following parameters:

Field Parameters

Static water level in wells before purging
Specific Conductivity
pH
Dissolved Oxygen
Turbidity
Temperature
Colors & Sheen (by observation)

Total Phosp	mg/l	N/A	N/A	Weekly
Ammonia-N	mg/l	N/A	N/A	Weekly
Nitrate-N	mg/l	N/A	12	Weekly
Total Nitrogen	mg/l	N/A	N/A	Weekly
Fecal Coliform	#/100	N/A	200	Weekly
Chloride	mg/l	N/A	N/A	Weekly
Sodium	mg/l	N/A	N/A	Weekly
TDS	mg/l	N/A	N/A	Weekly

The sludge from the treatment process was to be analyzed prior to disposal in the landfill. These parameters were:

Toxicity Characteristic Leaching Potential Test (TCLP) for organics, metals and pesticides
Total Nitrogen (percent dry weight)
Total Phosphorus (percent dry weight)
Total Potassium (percent dry weight)
Cadmium mg/kg (dry weight)
Copper mg/kg (dry weight)
Lead mg/kg (dry weight)
Nickel mg/kg (dry weight)
Zinc mg/kg (dry weight)
pH (Standard Units)
Solids (percent)

3.6 EVALUATION OF MONITORING RESULTS

3.6.1 GROUNDWATER MONITORING RESULTS

3.6.1.1 Response of Groundwater Levels to Rainfall

Figures 10 and 11 show the response of Floridan aquifer monitoring wells to rainfall at/near the Citrus County Central Landfill for the period June 1993 through January 1995. Over this period, there has been a steady rise in groundwater levels with increasing rainfall, particularly since mid-1994. Groundwater levels have risen approximately 3-5 feet for the various wells.

3.6.1.2 Groundwater Monitoring

Figures 12 through 35 are provided to show the response of onsite upgradient and downgradient monitoring wells to the various landfilling activities at the Citrus County Central Landfill. Indicator parameters (substances often found in landfill-contaminated groundwater) chloride, sulfate, total dissolved solids, specific conductivity, total organic carbon (TOC), vinyl chloride, benzene and nitrate are compared. One-time spikes on the graphs may be considered to be anomalies. [Note that when no symbol for a particular parameter appears for a sampling interval, there was no analytical result; the graphs included are complete].

Background and/or upgradient monitoring wells MW-1 (MW-1R), MW-2, MW-3 and MW-B show low values for "indicator" parameters. Initial values tend to be higher, due to well installation processes. This commonly occurs until the new well adjusts to its new environment. Monitoring well MW-B seems to show a gradual rise in nitrate-N since January 1994, well below the standard of 10 mg/l (Figure 29).

Downgradient monitoring wells (MW-A [now MW-AA], MW-C, and MW-D) show a wide range of response to the indicator parameters. In monitoring well MW-A there has been a slight rise in TDS, specific conductivity, and, generally, total organic carbon (TOC) (Figures 24-26). Benzene has also risen in the well.

Monitoring well MW-C, located at the southwest corner of the 60-acre site, shows a general decline in all of the indicator parameters (Figures 30-32). Monitoring well MW-D also shows a similar long-term decline (Figures 33-35).

Only one of the three monitoring wells for the leachate percolation ponds has responded to the discharge of effluent. Downgradient monitoring well MW-6 shows a rise in nitrate-N content to 53.2 mg/l on January 4, 1995. This well also contained 748 mg/l TDS.

An additional parameter monitored was turbidity (Figures 36 through 42). Despite attempts to develop and re-develop surficial aquifer and Floridan aquifer wells, turbidity remains elevated. Monitor well bailer-purging forcefully agitates sediments in the screened interval, increasing turbidity. Water samples for metals analysis for the surficial aquifer wells should be filtered in the field using a 1 micron disposable filter, in accordance with the FDEP Technical Document Determining Representative Ground Water Samples, Filtered or Unfiltered, January 1994 .

Inspection of the top of the Floridan aquifer in nearby sand pits in Inverness, reveals a cause for the turbidity in the limestone wells (MW-C and MW-D). The upper portion of the Suwannee Limestone is intensely weathered, containing considerable clay (kaolinite). Heavy metals are likely attached to this clay; preservation of unfiltered groundwater samples with acid releases metals to the sample. This tends to give false positives for these substances. However, as these wells monitor the Floridan aquifer, a source of public supply, both filtered and unfiltered samples will be taken.

3.6.2 LEACHATE MONITORING RESULTS

3.6.2.1 Leachate Effluent Monitoring

Figures 43 through 45 present long-term leachate effluent quality as indicated by certain key parameters. Figure 43 shows the concentration of nitrate-N in the leachate over approximately three years. It should be noted that the results indicated are not from

As mentioned above, monitoring well MW-B will continue as a background monitoring well, but it may also serve as a detection well for the southern portion of the 80-acre tract.

(4) Location information for each monitoring well;

Refer to Section 3.1, Table 3, for the locations and elevations of the top of the well casings of the existing wells. Each well location is reported in degrees, minutes and seconds of latitude and longitude, the Universal Transverse Mercator coordinates, and the elevation of the top of the well casing to the nearest 0.01 foot, National Geodetic Vertical Datum, as determined by a registered Florida land surveyor. Following the installation of new monitoring wells, these same location and elevation requirements will be met. All wells will be clearly labelled and easily visible at all times.

The approximate locations of proposed new background and detection wells are shown on Figure 48.

Within ninety (90) days after completion of any new wells the following information will be provided:

Well Identification	Driller's Log
Latitude/Longitude	Total Depth of Well
Aquifer Monitored	Casing Diameter
Screen Type and Slot	Size Casing Type and Length
Screen Length	SWFWMD Well Construction
Well Seal/Filter Pack Type and Thickness	Permit Numbers
Elevation at Top of Pipe	
Elevation at Land Surface	

(5) Well spacing no greater than 500 feet apart for downgradient wells and no greater than 1,500 feet apart for upgradient wells unless site-specific conditions justify alternate well spacings;

As described in Section 4.2, above, the present well spacings are not appropriate. One new background (upgradient) well and two new detection (downgradient) wells are proposed.

(6) Well screen locations properly selected;

Precise well screen locations are, of course, actually determined during the course of installation of the wells. This is influenced considerably at the Citrus County Central Landfill site by the very irregular surface of the underlying limestones. At this time, it is sufficient to say that the depths of the wells and screen

intervals will be similar to the existing nearby monitoring wells. However, as an approximation, the depths and screened intervals are likely to be as follows:

Well	Well Purpose	Depth	Screened Interval
MW-7	Background	125 feet	110-125 feet
MW-8	Detection	130-200 feet	bottom 20 feet
MW-9	Detection	130-210 feet	bottom 20 feet

Figure 49 is a typical monitoring well construction diagram for these proposed new monitoring wells.

(7) Procedures for properly abandoning monitoring wells;

Monitoring wells requiring plugging and abandonment will have such operations performed in accordance with Chapter 62-532.440, FAC, and the requirements of the Southwest Florida Water Management District. Following plugging and abandonment of monitoring wells, Citrus County will submit a written report to the Department providing verification of the plugging program.

Generally, the plugging will be performed by removing the steel upper protective casing, sawing off the PVC casing, lowering a tremie pipe to the full depth of the well, and pumping cement into the pipe until the cement returns to land surface. The FDEP and the SWFWMD will be notified in writing before any monitoring wells are abandoned or plugged.

(8) Detailed description of detection sensors if proposed.

No detection sensors are anticipated/proposed for the Citrus County Central Landfill.

4.3 PROPOSED SURFACE WATER MONITORING

(d) Surface water monitoring;

(1) Location of and justification for all proposed surface water monitoring points;

For reasons stated in Section 3.3, above, there will be no surface water monitoring.

(2) Each monitoring location to be marked and its position determined by a registered Florida land surveyor;

There will be no surface water monitoring, therefore this requirement is not applicable.

4.4 LEACHATE MONITORING

e. Leachate sampling locations proposed; (62-701.510(5), (FAC)

No changes in leachate sampling locations are proposed. The present locations are discussed in Section 3.4, above.

4.5 WATER QUALITY MONITORING

f. Routine sampling frequency; (62-701.510(6), (FAC)

4.5.1 BACKGROUND SAMPLING

(1) Background groundwater and surface water sampling and analysis;

Background water quality samples will be taken semi-annually from monitoring wells MW-1R, MW-2, MW-3, MW-B and new monitoring well MW-7. There will be no surface water sampling, as there are no surface water bodies or flows to surface water. Sampling and analysis of background groundwater quality will be done initially (sampling of wells MW-1R, MW-2, MW-3, and MW-B has already been done for 1995, on January 3, 1995) and then semi-annually for the parameters indicated in the following. New background monitoring well MW-7 will be sampled initially and then semi-annually, for the following parameters:

Field Parameters

- Static water level in well before purging
- Specific Conductivity
- pH
- Dissolved Oxygen (DO)
- Turbidity
- Temperature
- Colors and sheens (by observation)

Laboratory Parameters

- Total ammonia-N
- Chlorides

meet the criteria listed in Section 3.5.3 (above).

4.5.3 DETECTION WELL SAMPLING

(3) Detection well semi-annual sampling and analysis;

Detection wells MW-4, MW-5, MW-6, MW-AA, MW-C and MW-D will be sampled semi-annually and analyzed for the following groundwater parameters. New detection wells MW-8 and MW-9 will be sampled initially and semi-annually, and analyzed for the following groundwater parameters:

Field Parameters

- Static water level in well before purging
- Specific Conductivity
- pH
- Dissolved Oxygen (DO)
- Turbidity
- Temperature
- Colors and sheens (by observation)

Laboratory Parameters

- Total ammonia-N
- Chlorides
- Iron
- Mercury
- Nitrate-N
- Total Dissolved Solids (TDS)
- Chemical Oxygen Demand (COD)
- Total organic carbon (TOC)
- Benzene
- Those parameters listed in Appendix I, 40 CFR, Part 258

4.5.4 COMPLIANCE WELL SAMPLING

(4) Compliance well sampling and analysis;

The only well to be considered a compliance well at present is monitoring well MW-E. Additional compliance wells may be added in the future. All compliance wells will be sampled quarterly and analyzed for the following groundwater parameters:

Field Parameters

- Static water level in well before purging
- Specific Conductivity

- o pH
- o Dissolved Oxygen (DO)
- o Turbidity
- o Temperature
- o Colors and sheens (by observation)

Laboratory Parameters

- o Total ammonia-N
- o Chlorides
- o Iron
- o Mercury
- o Nitrate-N
- o Sodium
- o Total Dissolved Solids (TDS)
- o Chemical Oxygen Demand (COD)
- o Total organic carbon (TOC)
- o Benzene
- o Those parameters listed in Appendix I, 40 CFR, Part 258
- o Those parameters listed in Appendix II, 40 CFR, Part 258

If for two consecutive sampling events the concentrations of all parameters listed in 62-701.510 (8)(a) and (d) above are at or below background values, Citrus County, after notifying the Department, will discontinue assessment monitoring and return to the routine monitoring requirements described in 62-701.510(6).

4.5.5 SURFACE WATER SAMPLING

(5) Surface water sampling and analysis;

For reasons explained in Section 3.3, above, there will be no surface water sampling. Therefore, this section is not applicable.

4.6 ASSESSMENT MONITORING AND CORRECTIVE ACTIONS

G. Describe procedures for implementing assessment monitoring and corrective action; (62-701.510(7), (FAC)

4.6.1 Assessment Monitoring

If indicator parameters are detected in detection wells in concentrations that are significantly above background quality, or that are at levels above the FDEP water quality standards or criteria specified in Chapter 62-520, FAC, Citrus County would re-sample the wells within 15 days after the sampling data are received, to confirm the data. If the data are confirmed, Citrus County would notify FDEP in writing within 14 days of this finding. Upon notification by FDEP, Citrus County would initiate assessment

and FDEP water quality standards or criteria, or are detected and confirmed in detection wells in concentrations which are above FDEP water quality minimum criteria, Citrus County will notify the FDEP within 14 days of this finding and would initiate corrective actions. Assessment monitoring will continue according to the requirements of Section 4.6.1.

4.7 WATER QUALITY DATA REPORTING

h. Water quality monitoring reports;

(1) Semi-annual reports;

The semi-annual reports will contain the following components:

1. The facility name and identification number, sample collection dates, and analysis dates;
2. All analytical results, including all peaks even if below maximum contaminant levels;
3. Identification number and designation of all surface water and groundwater monitoring points;
4. Applicable water quality standards;
5. Quality assurance and quality control notations;
6. Method detection limits;
7. STORET code numbers for all parameters;
8. Water levels recorded prior to evaluating wells or sample collection. Elevation reference shall include the top of the well casing and land surface at each well site at a precision of plus or minus 0.01 foot;
9. An updated groundwater table contour map, with contours at no greater than one-foot intervals, which indicates groundwater elevations and flow direction; and
10. A summary of any water quality standards or criteria that are exceeded.

(2) Two-Year report signed/dated/sealed by PG or PE.

Every two years and prior to ninety (90) days before the expiration of the Department Permit, Citrus County will submit an evaluation of the Groundwater Monitoring Plan. This plan will include, at a

minimum, an assessment of the effectiveness of the existing landfill design and operation as related to the prevention of groundwater contamination. This annual report will contain the following components:

1. Tabular and graphical displays of any data which show that a monitoring parameter has been detected, including hydrographs for all monitoring wells;

2. Trend analyses of any monitoring parameters detected;

3. Comparisons among shallow, middle, and deep zone wells;

   In the case of the Citrus County Central Landfill, only one zone is being monitored. This zone is the top of the Floridan aquifer, which in this case is comprised of both the limestone and a portion of the overlying sands.

4. Comparisons between upgradient and downgradient wells;

5. Correlations between related parameters, such as total dissolved solids and specific conductance;

6. Discussion of erratic and/or poorly correlated data;

7. An interpretation of the groundwater contour maps, including an evaluation of groundwater flow rates; and

8. An evaluation of the adequacy of the water quality monitoring frequency and sampling locations based upon site conditions.

This plan will be signed and sealed by a professional geologist or engineer as defined by Florida Statutes 472 and 471, respectively. The plan will be updated at the time of permit renewal.

Table 3. Citrus County Central Landfill Monitor Well Specifics/Locations and Purpose

WELL	DEPTH	WELL DIAM (inches)	SCREEN INTERVAL (ft)	WELL ELEVATION	GROUND ELEVATION	WELL TYPE	LATITUDE	LONGITUDE	X COORDINAT	Y COORDINATE
MW-1R *	120	2	110-120	118.08	115.3	upgradient	82 26 19.33566 W.	28 51 20.46904 N.	515734.4675	1644075.0314
MW-2	123	2	108-123	136.29	133.5	upgradient	82 26 04.91534 W.	28 51 21.09969 N.	517016.947	1644134.0121
MW-3	119	2	104-119	120.47	119.7	upgradient	82 26 04.69852 W.	28 50 55.30387 N.	517026.689	1641528.493
MW-4	120	2	110-120	122.62	121.4	detection	82 26 18.69384 W.	28 51 09.70125 N.	515787.5197	1642987.2443
MW-5	120	2	110-120	121.14	118.6	detection	82 26 19.60416 W.	28 51 10.09772 N.	515706.7199	1643027.5870
MW-6	120	2	110-120	118.48	115.8	detection	82 26 19.55309 W.	28 51 09.05065 N.	515710.8712	1642921.8127
MW-AA	113	2	103-113	106.11	104.7	compliance	82 26 35.08066 W.	28 51 09.22643 N.	514330.1915	1642944.6946
MW-B *	128	4	108-128	111.94	111.1	downgradie	82 26 19.59919 W.	28 50 59.45064 N.	515703.188	1641952.201
MW-C	199	4	open hole 192-199	115.18	114.1	downgradie	82 26 34.29378 W.	28 51 02.32191 N.	514397.562	1642247.058
MW-D	208	4	open hole 188-208	109.77	108.4	downgradie	82 26 33.51558 W.	28 51 17.24014 N.	514472.380	1643753.584
MW-E	115	2	95-115	109.88	107.0	assessment	82 26 36.68776 W.	28 51 09.55952 N.	514187.411	1642978.872

Notes:

Well MW-1R is a replacement for Well MW-1 ..... data from both should be considered comparable and continuous
Well MW-AA is a replacement for Well MW-A ..... data from both should be considered comparable and continuous
Wells MW-C and MW-D are shown in Appedix C as having well screens and a sand pack. However video logging by Deep Venture in 1993 revealed that these wells are open hole in Suwannee (?) Limestone (see also Appendix C, following construction details)
* Wells are upgradient from the 60-acre site, but downgradient from the 80-acre site

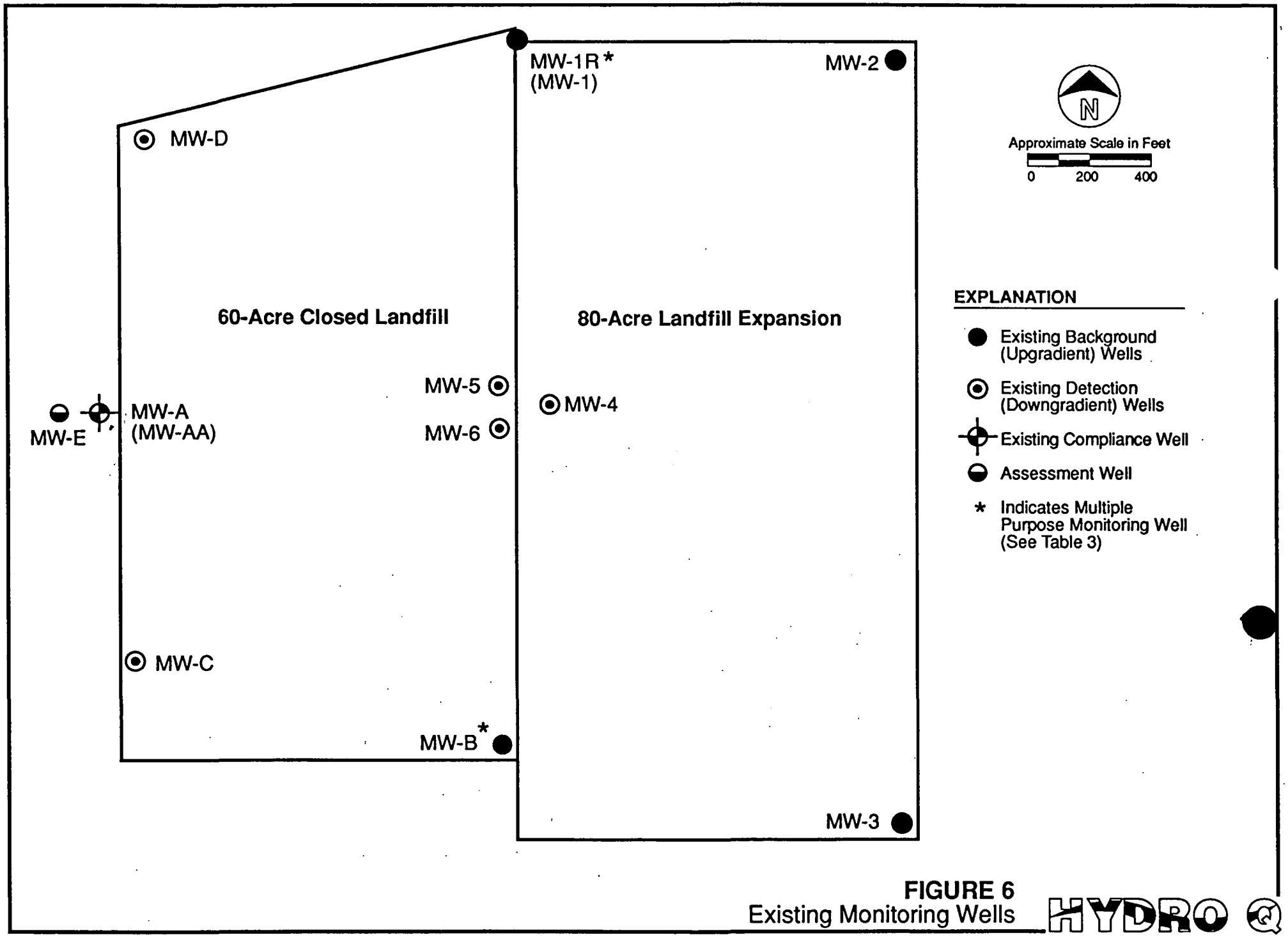


FIGURE 6
Existing Monitoring Wells

HYDRO Q

MONITORING WELL MW-A

CITRUS COUNTY CENTRAL LANDFILL

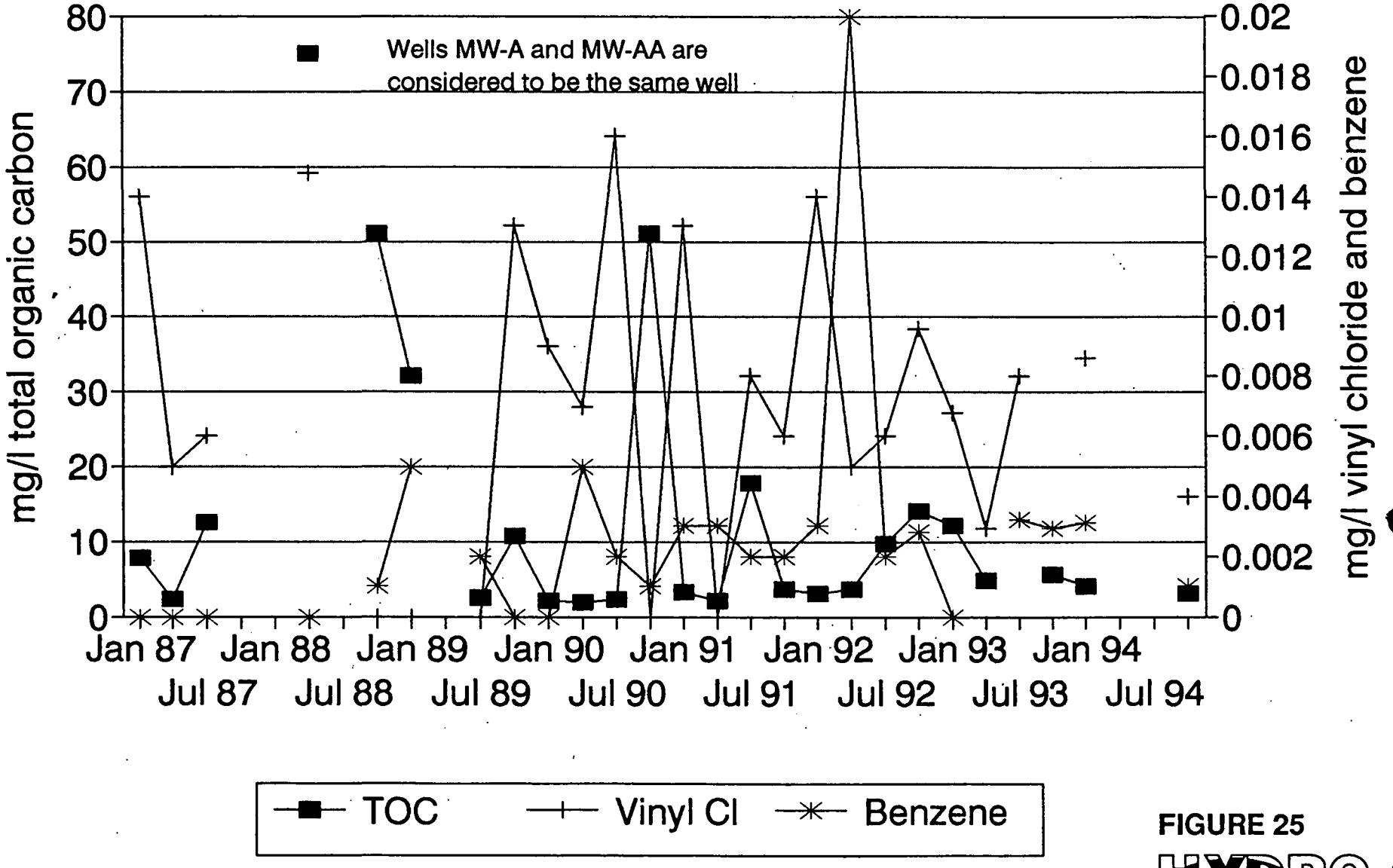


FIGURE 25

HYDRO Q

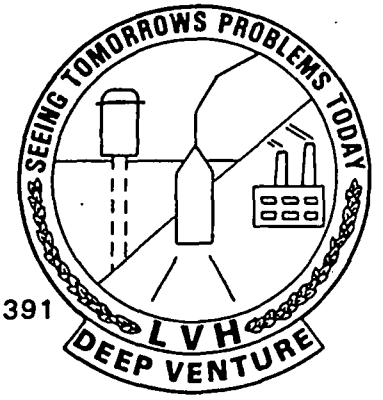
Jim Hayden
Director Operations

Larry Simmons
Operations Technician

DEEP VENTURE

UNDERWATER 7000 FEET
TELEVISION AND 3-DIMENSIONAL STEREO
HORIZONTAL AND VERTICAL PIPES
WELL CASINGS-STRAIGHT AND 90 DEGREE VIEWING
WELL SCREEN CLEANING AND REDEVELOPMENT WITH **SONAR JET**
ROTARY MIRROR HEAD

ROUTE 2, BOX 329 - PERRY, FLORIDA 32347 - PHONE 904-584-6391



Mrs. Susan Metcalfe
P.O. Box 340
Lecanto, Florida 34460

REF: Landfill monitor wells.

"D"
Zero.....Top of Casing (Iron Pipe)
Static....105'
EOC.....188'
TD.....208'
limestone openhole

"A"
Zero.....Top of Casing (PVC)
Static....100'
TD.....129'

"C"
Zero.....Top of Casing (Iron Pipe)
Static....110'
EOC.....192'
TD.....199'
limestone openhole

"B"
Zero.....Top of Casing (PVC)
Static....107'
TD.....124'

EOC - End of Casing
TD - Total Depth

Florida Department of

Memorandum **Environmental Protection**

TO: Bob Butera, P.E.
Kim Ford, P.E.
Jay Thabaraj, Ph.D.

FROM: Allison Amram, P.G. AA

SUBJECT: Citrus County Meeting tomorrow on the Leachate Treatment Plant and Groundwater Activities

DATE: September 18, 1995

==========

I'd just like to summarize some of the issues that will be discussed at tomorrow's Citrus County meeting concerning the leachate treatment plant modifications and sampling, and the current groundwater conditions at the landfill.

Leachate Treatment Plant Issues

The analytical testing results for June, July and August are generally good, and meet the goals described in the operating permit, Specific Condition No. 13. In July the County did the extensive Appendix II parameter testing, and found EDB and trihalomethanes exceeding the groundwater standards. The trihalomethanes are probably from the addition of chlorine, but no explanation for the EDB has been proposed by the County. In August the County adjusted the methanol feed to try and reduce COD, and the nitrates rose above the 12 mg/l limit. All other times the nitrate has met this limit.

The County is still unclear about the meaning of "acceptable CBOD5:COD ratio", and although Jay has talked with them several times, I expect this issue to be raised at the meeting. Once again, I'll defer this question to Jay.

The leachate treatment plant looks like it is working, but is not designed to treat salts. Recently the sodium has exceeded the groundwater standard in the downgradient Zone of Discharge (ZOD) well, and I have asked the County how they intend to remedy this situation.

Groundwater Issues

The County is doing contamination assessment activities along the western side of the landfill, where vinyl chloride and benzene have been exceeding groundwater standards. They should be updating us on the progress that they have made this summer, and expected report submittal date. I also expect them to discuss their options for expanding their zone of discharge to the other side of the closed landfill, or discuss a groundwater exemption from the sodium standard, based on water uses in the area.

aa

SPECIFIC CONDITIONS:

11. At least 30 days prior to any new liner installation/ construction, the permittee shall submit a construction schedule or chart to include the following activities:

A. Beginning of liner installation/construction.
B. Completion of liner installation/construction.
C. Beginning of leachate collection/removal system construction.
D. Completion of leachate collection/removal system construction.
E. Beginning of any new leachate treatment/disposal system.
F. Completion of any new leachate treatment/disposal system construction.

12. Direct discharge from the percolation pond system to area surface waters is not allowed. Surface discharge shall be considered a violation of this permit and the permittee shall immediately report any such discharge to the Southwest District office of the Department of Environmental Protection.

13. a. During the construction of the modifications to the ZIMPRO leachate treatment plant, the treated leachate (effluent) shall be disposed of at an off-site wastewater treatment plant. The permittee should test for those parameters necessary to adjust the treatment system for effective leachate treatment.

b. Prior to requesting authorization for on-site discharge into the percolation ponds, the permittee shall demonstrate 3 consecutive months of acceptable leachate treatment. Acceptable leachate treatment shall meet the following criteria:

Parameter	Unit	Minimum	Maximum	Frequency
flow	gpd	N/A	30,000	Daily
pH	STD UN	6.00	8.50	Daily
Chlorine Residual	mg/l	N/A	N/A	Daily, if using chlorine
$CBOD_5$	mg/l	N/A	20	Weekly
COD	mg/l	(acceptable $CBOD_5$:COD ratio)		Weekly
TSS	mg/l	N/A	20	Weekly
Total Phosphorous	mg/l	N/A	N/A	Weekly
Ammonia Nitrogen	mg/l	N/A	N/A	Weekly
Nitrate-N	mg/l	N/A	12	Weekly
Total Nitrogen	mg/l	N/A	N/A	Weekly
Fecal Coliform	#/100	N/A	200	Weekly
Chloride	mg/l	N/A	N/A	Weekly
Sodium	mg/l	N/A	N/A	Weekly
TDS	mg/l	N/A	N/A	Weekly

SPECIFIC CONDITIONS:

The effluent shall be tested once during the 3 month demonstration period for the parameters listed in Appendix II, 40 CFR Part 258. These test parameters shall meet the Florida Groundwater Standards listed in F.A.C. 62-520.420.

c. After written approval for on-site discharge is obtained from the FDEP- Solid Waste Section, Southwest District, the following effluent testing schedule shall be conducted. Results shall be submitted quarterly. The first quarter of a year shall be submitted on **April 15th**, the second quarter on **July 15th**, the third quarter on **October 15th** and fourth quarter on **January 15th**.

Parameter	Unit	Minimum	Maximum	Frequency
flow	gpd	N/A	30,000	Daily
pH	STD UN	6.00	8.50	Daily
Chlorine Residual	mg/l	N/A	N/A	Daily, if using chlorine
$CBOD_5$	mg/l	N/A	20	Weekly
COD	mg/l	(acceptable $CBOD_5$:COD ratio)		Weekly
TSS	mg/l	N/A	20	Weekly
Total Phosphorous	mg/l	N/A	N/A	Weekly
Ammonia Nitrogen	mg/l	N/A	N/A	Weekly
Nitrate-N	mg/l	N/A	12	Weekly
Total Nitrogen	mg/l	N/A	N/A	Weekly
Fecal Coliform	#/100	N/A	200	Weekly
Chloride	mg/l	N/A	N/A	Weekly
Sodium	mg/l	N/A	N/A	Weekly
TDS	mg/l	N/A	N/A	Weekly
Arsenic	mg/l	N/A	N/A	Quarterly
Barium	mg/l	N/A	N/A	Quarterly
Cadmium	mg/l	N/A	N/A	Quarterly
Chromium	mg/l	N/A	N/A	Quarterly
Iron	mg/l	N/A	N/A	Quarterly
Mercury	mg/l	N/A	N/A	Quarterly
Lead	mg/l	N/A	N/A	Quarterly
Selenium	mg/l	N/A	N/A	Quarterly
Silver	mg/l	N/A	N/A	Quarterly
Total THMs	mg/l	N/A	N/A	Quarterly
Benzene	mg/l	N/A	N/A	Quarterly
Toluene	mg/l	N/A	N/A	Quarterly
Ethylbenzene	mg/l	N/A	N/A	Quarterly
Total Xylenes	mg/l	N/A	N/A	Quarterly

Annually, the effluent shall be tested for the Appendix II parameters listed in 40 CFR Part 258.

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

Post-it® Fax Note 7671	Date 9-15-95	# of pages ▶ 20
To ALLISON AMRAM	From SUSIE METCALFE	
Co./Dept. D.E.P.	Co. C.C.S.W.M.	
Phone #	Phone # 904/746-5000	
Fax # 813-744-6084	Fax # 904-527-1204	

September 18, 1995

Allison Amram, P.G.
Solid Waste Section
Department of Environmental Prc
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

Re: Citrus County Central Landfill
Permit No.SO09-187229
Leachate Treatment Plant

Dear Ms. Amram:

We are pleased to provide the attached information related to operation of the leachate treatment plant at this facility for the month of August 1995. This is the third month of operation following modifications to the plant. All effluent continues to be trucked off-site for disposal.

The information provided includes the Monthly Operating Reports prepared by our Utilities Division operator as well as all leachate testing data obtained from Orlando Laboratories for both influent and effluent, with paired sampling/analysis of the same batch on a weekly basis. The parameters tested are those required by SC 13 of the referenced permit.

The volume of leachate treated was less than the amount in July. The daily average was about 10,400 gallons.

NITRATE PARAMETERS

Nitrate treatment continues to be very successful. Effluent samples for the first three weeks of August were 0.06 mg/l or less as compared to the permit limit of 12 mg/l. Total nitrogen in the effluent during that period was less than 3 mg/l. Influent nitrogen totals ranged from 51.9 to 405.9 mg/l, again due the mix of contaminated stormwater with underdrain leachate.

In an effort to control COD, we experimented with reduction of the methanol feed during August as evidenced by the final two weeks. Nitrate in the effluent increased to 6.07 and 39.1 mg/l as the methanol dose decreased.

Operational changes have reversed that trend and although we do not yet have lab results, we believe the effluent has met standards. Field kit testing, which has been quite consistent with the lab results, does not agree with the high (39.1) reading.

The total nitrogen in the effluent likewise climbed for those two weeks to 10.4 and 41.6 mg/l respectively in the lab results. It is evident that nitrate is the primary nitrogen compound in the effluent without sufficient methanol addition to complete denitrification. We feel we have that dosage well controlled.

The effluent pH is consistently within the required range of 6.0 to 8.5. Total phosphorus has been well within the 20 mg/l limit. Fecal coliform has also been well below the 200 cfu/100 ml in all tests. We have been experimenting with reducing the chlorination dose so that we can reduce the potential for formation of trihalomethanes while hopefully still reducing bacteria to acceptable levels.

Effluent CBOD5 has been consistently at or below 2 mg/l as compared to the 20 mg/l limit. This is to be expected in chlorinated effluent. The last week in July and the first two weeks in August a new analyst for the lab performed the BOD test incorrectly, by not dechlorinating the sample. Therefore those values should not be considered representative of the effluent. COD values for the effluent were between 76 and 120 mg/l. I look forward to discussing the concept of BOD/COD ratio with you soon.

Total suspended solids tests are done on effluent from the second stage treatment tank. The final filtration step is bypassed during this testing period in order to load trucks for offsite disposal. The results for TSS in August show that all except the first week's results (34 mg/l) were in compliance with the 20 mg/l limit. We believe that this can be consistently met with the use of the filters as would be the case when using the on-site disposal facilities. Use of the final filtration step may also assist in reducing the need for chlorination, thus reducing the THM production potential.

APPENDIX II PARAMETERS

The materials which exceeded standards the previous month were EDB, trihalomethanes and three of the specific brominated hydrocarbons; bromodichloromethane, bromoform, and dibromochloromethane. Samples will be taken this week as proposed in the previous report to determine the source of these compounds but results are not yet available. We will submit the results of the additional testing as soon as it is available.

We feel that we have demonstrated the ability of this plant to treat leachate effectively. We are committed to careful process control will keep the plant operating appropriately.

Citrus County hereby requests permission to resume onsite disposal of treated leachate plant effluent as soon as retesting results are submitted.

Yours truly,

Susan J. Metcalfe

Susan J. Metcalfe, Director
Division of Solid Waste Management

SJM:cms

cc: Gary Kuhl, Dir. Dept. Public Works w/o attachments
Ralph Hedgecoth, Dir. Utilities Div. w/o attachments
John Wood, CH2M Hill w/o attachments
Chongman Lee, FDEP, Tallahassee

Attachments

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 Fax (904) 746-1203

September 11, 1995

Allison Amram, P.G.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, Florida 33619-8318

Re: Citrus County Central Landfill
Permit No.SO09-187229
Leachate Treatment Plant

Dear Ms. Amram:

We are pleased to provide the attached information related to operation of the leachate treatment plant at this facility for the month of July 1995. This is the second month of operation following modifications to the plant. All effluent continues to be trucked off-site for disposal.

The information provided includes the Monthly Operating Reports prepared by our Utilities Division operator as well as all leachate testing data obtained from Orlando Laboratories for both influent and effluent, with paired sampling/analysis of the same batch on a weekly basis. The one-time analysis of Appendix II parameters, 40CFR Part 258 is included in this report as well, in addition to the annual sludge analyses. The parameters tested are those required by SC 13 of the referenced permit.

The volume of leachate treated increased from the amount in June due to rainfall. The daily average was about 14,000 gallons. This was accomplished by increasing batch size and frequency. Tank #1 is being used as the temporary storage tank; Tank #2 is the aerobic treatment tank; Tank #3 is the anoxic treatment tank; Tank #4 is segregated into two sections, one for sludge digestion and the other is being used as the chlorine contact chamber and holding tank prior to discharge.

WEEKLY PARAMETERS

Nitrate treatment is very successful. All effluent samples have had 0.10 mg/l nitrate or less as compared to the permit limit of 12 mg/l. Total nitrogen in the effluent is less than 4.5 mg/l. Influent nitrogen totals fluctuated more than last month because of the volume of contaminated stormwater treated.

The effluent Ph is consistently within the required range of 6.0 to 8.5. Total phosphorus has been well within the 20 mg/l limit. Fecal coliform has also been well below the 200 cfu/100 ml in all tests. Effluent CBOD5 has been consistently below 2 mg/l as compared to the 20 mg/l limit. This is to be expected in chlorinated effluent. COD values for the effluent were between 93 and 97 mg/l except for the last week when it was 38.2 mg/l.

The total suspended solids tests are done on effluent from the second stage treatment tank. The final filtration step is bypassed during this testing period in order to load trucks for offsite disposal. The results for TSS in July show three weeks of compliance with the final week where the solids exceed the permit limit of 20 mg/l (at 22mg/l). We believe that this can be consistently met with the use of the filters as would be the case when using the on-site disposal facilities.

APPENDIX II PARAMETERS

Analysis of effluent for the Appendix II list of parameters showed several materials for which groundwater (drinking water) standards were not met. Sodium, chloride and total dissolved solids were, as expected, above the standard.

The only other materials which exceeded standards were EDB, trihalomethanes and three of the specific brominated hydrocarbons; bromodichloromethane, bromoform, and dibromochloromethane. Since these compounds were not detected in the influent, it is our opinion that these compounds probably originated from the chlorination process, by combination of remaining organics with the disinfectant.

It is possible that trace amounts of bromine are present in the sodium hypochlorite. We have contacted the manufacturer to determine whether they have analysis of the supplied material. If not, we propose to have a sample analyzed for bromine.

We believe that there may be methods to reduce trihalomethanes in the effluent. First would be reduce or eliminate chlorination. We are experimenting with chlorine dosage and fecal coliform levels. We also propose to sample the unchlorinated effluent for fecal coliform/fecal strep to evaluate whether the coliform is human or (more likely) avian. After receiving that information, we would like to discuss with you the risks of creating THM's by chlorination versus the risks of disposal of non-chlorinated effluent. Chlorination at the normal point in the process, after the final filtration, may also reduce THM formation. Alternate disinfection methods are much more costly, so we would like to avoid that option.

Another possibility is that the recycled methanol we are using has some traces of halogenated hydrocarbons. We likewise have contacted the manufacturer for analysis of the supplied material and will analyze the batch on hand if none is forthcoming. If that is a likely source, we can experiment with further reduction in methanol dosage to the point that nitrate removal is incomplete but within permit limits. We can also evaluate use of a longer re-aeration phase at the end of the anoxic treatment step to help strip remaining volatile organics, including methanol and its contaminants, however this is limited by the need to keep the treatment unit with low DO. Use of a higher grade methanol with the potential for fewer impurities is another option, although more expensive.

SLUDGE PARAMETERS

Analysis of waste sludge from the leachate treatment plant by TCLP for metals, organics and pesticides and other listed parameters as percent or mg/kg dry weight was also part of this effort. All parameters are below limits; the sludge is <u>not</u> classified as hazardous waste and will continue to be disposed in the landfill.

The August results will be available within a short time. I would like to schedule a meeting with you, Bob Butera and Jay Thabaraj very soon after they are transmitted, in order to discuss the status of the plant as well as related matters for the groundwater monitoring plan.

We hope to be able to use on-site disposal for this facility soon.

Yours truly,

Susan J. Metcalfe

Susan J. Metcalfe, Director
Division of Solid Waste Management

SJM:cms

cc: Gary Kuhl, Dir. Dept. Public Works w/o attachments
Ralph Hedgecoth, Dir. Utilities Div. w/o attachments
John Wood, CH2M Hill w/o attachments
Chongman Lee, FDEP, Tallahassee

Attachments

Board of County Commissioners

Department of Public Works

Post Office Box 167, Lecanto, Florida 34460

(904) 746-4107 — Fax (904) 746-1203

Reply to:
Div. Solid Waste Mgmt.
Susan J. Metcalfe, Director
P. O. Box 340
Lecanto, FL 34460

September 14, 1995

Kim B. Ford, P.E.
Solid Waste Section
Department of Environmental Protection
3804 Coconut Palm Drive
Tampa, FL 33619

RE: Citrus County Central Landfill
Permit SO09-187229
Existing Operation Permit Modification

8009-277526

Dear Mr. Ford:

As discussed during our meeting on August 21, 1995 and identified as issue Number 2 in your letter dated August 28, 1995; Citrus County intends to modify its current operating permit to include the following:

- ***A relocated site access***
- ***Miscellaneous site improvements***
- ***A temporary transfer station***
- ***Revised filling limits for Phase 2***

This correspondence and three (3) copies of each enclosure serve as a submittal to your office for the operating permit modifications. A check in the amount of $250 is the fee for this minor permit modification. Each modification item is discussed under the headings which follow.

Site Access

Design drawings for the proposed landfill entrance road are included in Attachment A. The landfill entrance road will be relocated approximately 360 feet to the west. The modifications are being made to align access to the landfill with the new median separation planned for State Road 44. The landfill entrance road modifications will be constructed with County personnel. The drawings for this project were prepared by Thomas E. Fears, P.E., Citrus County Engineering Division. A copy of a letter from Forestry authorizing use of the property for the access road is included.

Miscellaneous Site Improvements

Design drawings for the miscellaneous site improvements are included in Attachment B. The improvements include fencing around a material/supply storage area, placing a recycled asphalt base under the yard waste storage area, a culvert to transport stormwater run off from the citizen drop off area to the stormwater ditches around the soil stockpile, and a culvert placed in the east perimeter ditch to provide an equipment crossing from the soil stockpile area to the east perimeter access road. These improvements will be made by County personnel. The drawings for these projects were prepared by Michael D. Moore, P.E., Citrus County Public Works Department.

Temporary Transfer Station

If the County can not obtain a landfill permit to construct a new phase of the landfill prior to Phase 1 reaching capacity, it plans on exporting the waste to an out-of-County disposal site. This option may require the use of a temporary transfer station. This temporary transfer station would be located on the existing lined area of the landfill. Attachment C contains drawings and narrative that describes the operation of the temporary transfer station. These drawings were prepared by CH2M Hill and are being submitted under separate cover.

Phase I Filling Limits

The north slope of the landfill appears to have been filled to elevations above those shown in the Phase I permit drawings (Section A on Sheet 17). A site plan of the landfill with the north slope identified is shown in Figure 1. Also shown in Figure 1 is a baseline north of the isolation berm at the toe of the northern slope. Figure 2 shows a cross section through the northern slope at Station 16+00 along the baseline. Also shown in Figure 2 is the planned limits of future filling at the northern slope of Phase I. Attachment D includes a technical memorandum prepared by Gary L. Panozzo of CH2M Hill which evaluates the existing stability of the waste mass along the landfill lining at the north slope and the stability of the planned completed Phase I. The technical memorandum concludes that the north slope is stable considering failure surfaces along the lining under existing and final conditions.

Please contact me if you have any questions regarding this operations permit modification or need any additional information.

Sincerely,

Susan J. Metcalfe

Susan J. Metcalfe, P.G.
Director, Division of Solid Waste Management

SJM:cms

Enclosure

cc: *Anthony L. Shoemaker, County Administrator*
Gary W. Kuhl, Dir. Dept. Public Works
Michael D. Moore, Public Works Project Coordinator
Thomas E. Fears, Engineer III, DTS
John Wood, CH2M Hill
Gary Panozzo, CH2M Hill

Florida Department of Agriculture & Consumer Services
BOB CRAWFORD, Commissioner

Please Respond To:

Division of Forestry
3125 Conner Boulevard
Tallahassee, FL 32399-1650

FM/LANDS
WSF

August 28, 1995

Mr. Daniel Crabb, Chief
Bureau of Land Management Services
Division of State Lands
Department of Environmental Protection
3900 Commonwealth Boulevard
Tallahassee, FL 32399-3000

Dear Mr. Crabb:

As you recall, the Land Management Advisory Council approved the concept of granting a sublease to Citrus County for utilizing a 60 acre former landfill site as a storage area to accommodate the expansion of the County's existing landfill. Enclosed are our recommendations for inclusion in the sublease to Citrus County.

Thank you for your attention to this matter. Please contact Jim Grubbs at 904/488-8180, if you have any questions.

Sincerely,

BOB CRAWFORD
COMMISSIONER OF AGRICULTURE

G. A. Allbritton

George A. Allbritton, Acting Chief
Forest Management

Enclosures (2)

cc: Jon Blanchard, w/enclosures

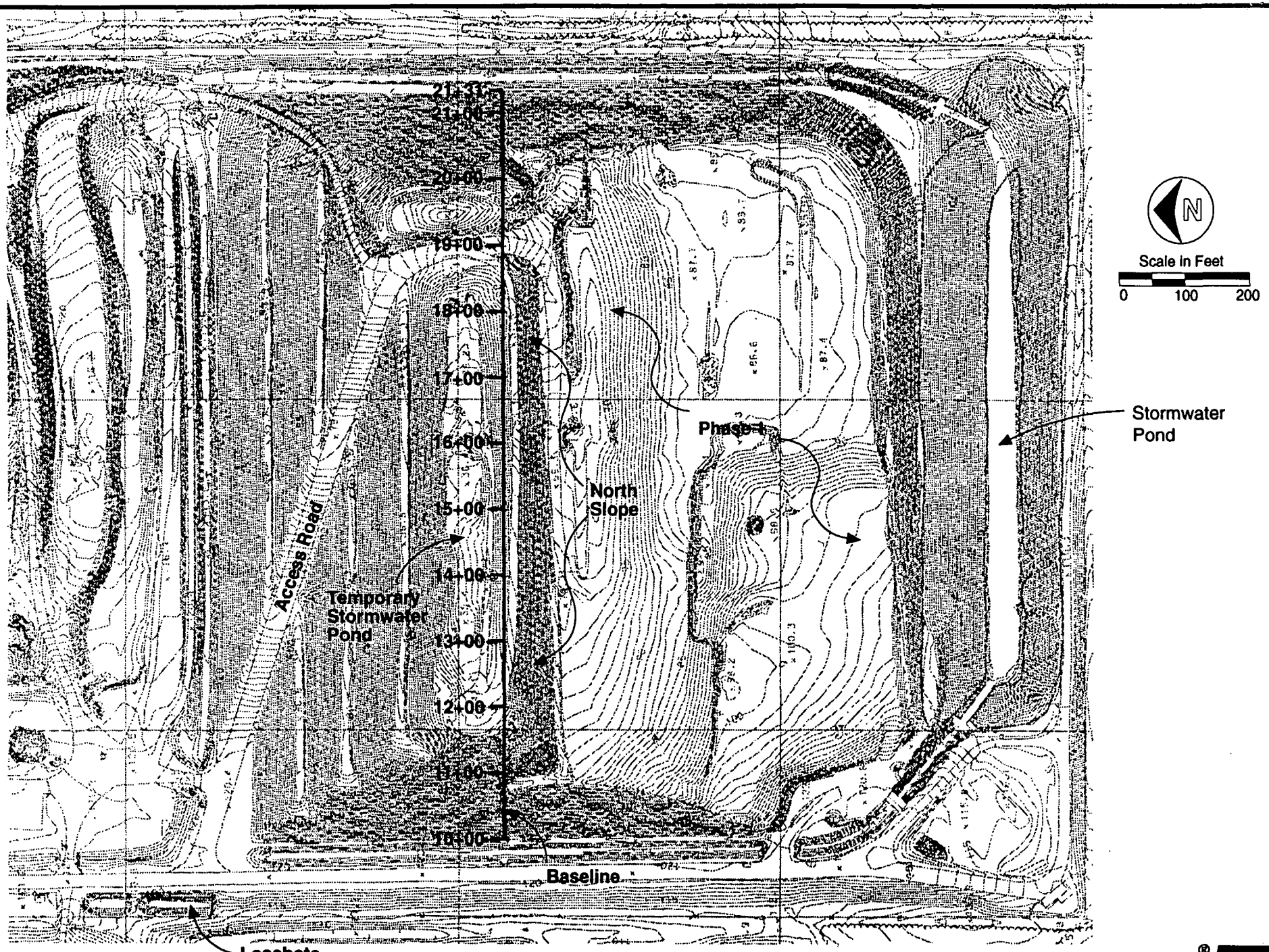
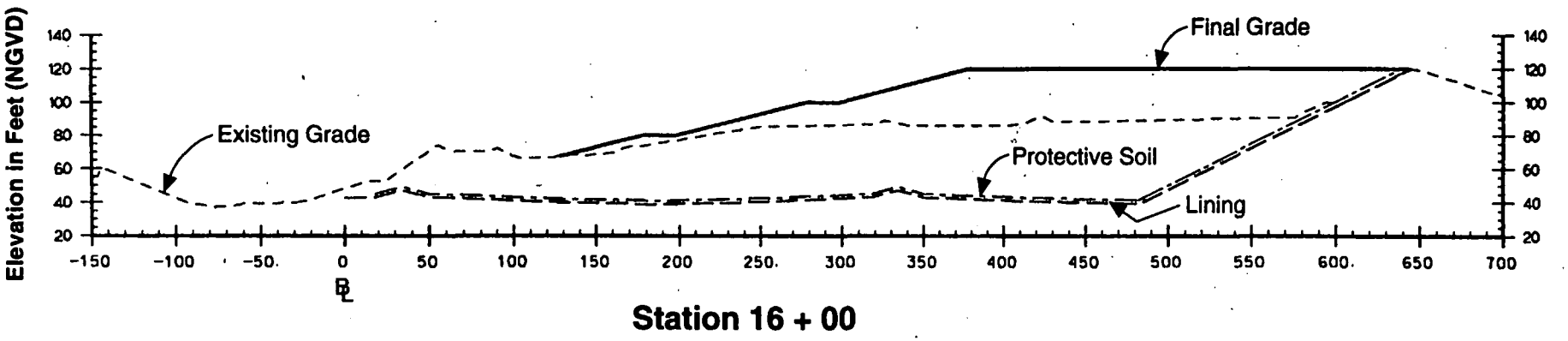


FIGURE 1
Site Plan

CH2M HILL



Station 16 + 00

FIGURE 2
Cross Section at Station 16 + 00

CH2M HILL

E 516000 E 516500 E 517000 E 517500

N 1644000

N 1643500

N 1643000

N 1642500

N 1642000

N 1641500

N 1643992.17
E 515814.58
EL 117.40

N 1643947.00
E 517039.18
EL 130.79

N 1642758.85
E 517038.70
EL 126.06

N 1641584.99
E 517039.94
EL 119.62

DBL TOE ELEV. 121.5
24" COMP ELEV. 118.5

YARD WASTE AREA

STORAGE AREA TO BE FENCED

EQUIPMENT CROSSING LOCATION

124.6

119.6

116.7

CONTROL POINT
ANTENNA
TOWER
UTILITY POLES
TRAFFIC LIGHT
STREET LIGHT
MAN HOLE
DROP INLET
CATCH BASIN
SIGN
MISC. POST
FLAG POLE
INDIVIDUAL TREES
FIRE HYDRANT
MB MAIL BOX
SWAMP
W/S WATER SURFACE ELEVATION

EQUIPMENT CROSSING
LOCATION PLAN

N
W E
S

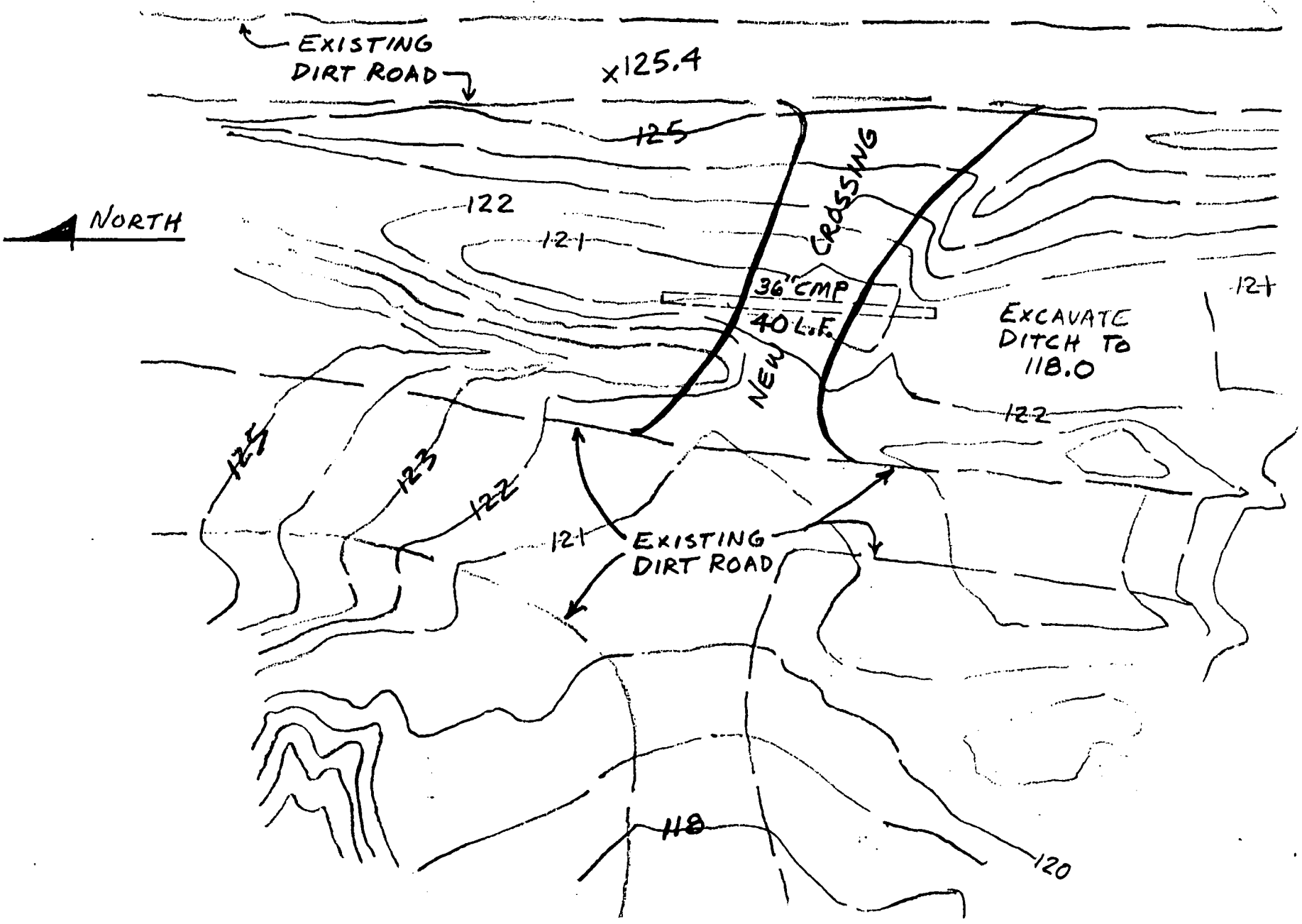
100 0 100 200 300

JOB NO. 5471.6 DATE 7-21-95
SCALE 1"=200' CONT. INTERVAL 1'
DRAWN BY: P-S CHK. BY: C.M.R.

CITRUS COUNTY
SOLID WASTE MANAGMENT

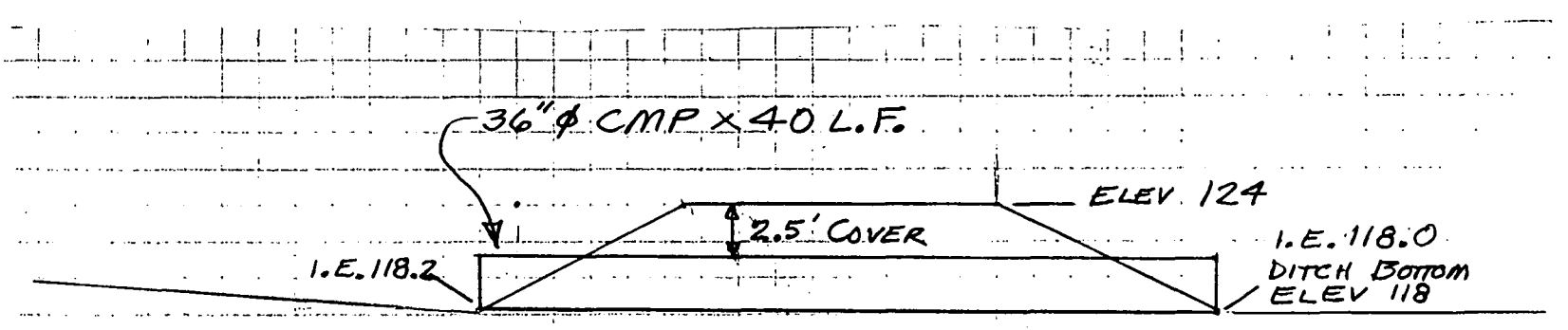
CENTRAL LANDFILL

SHEET 1 OF 1



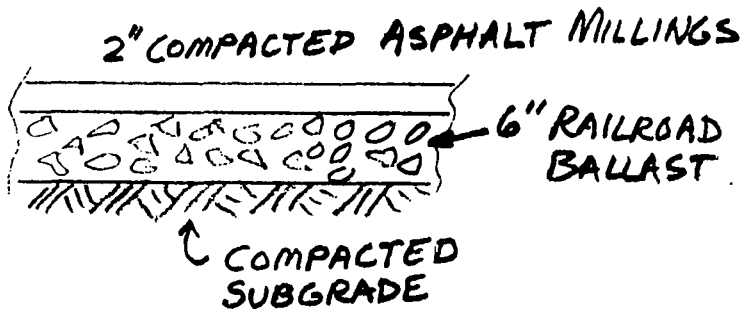
EQUIPMENT CROSSING PLAN

SCALE: 1" = 20'



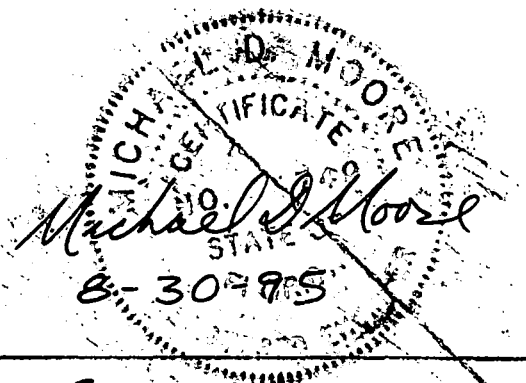
DITCH CROSSING DETAIL

1" = 10'

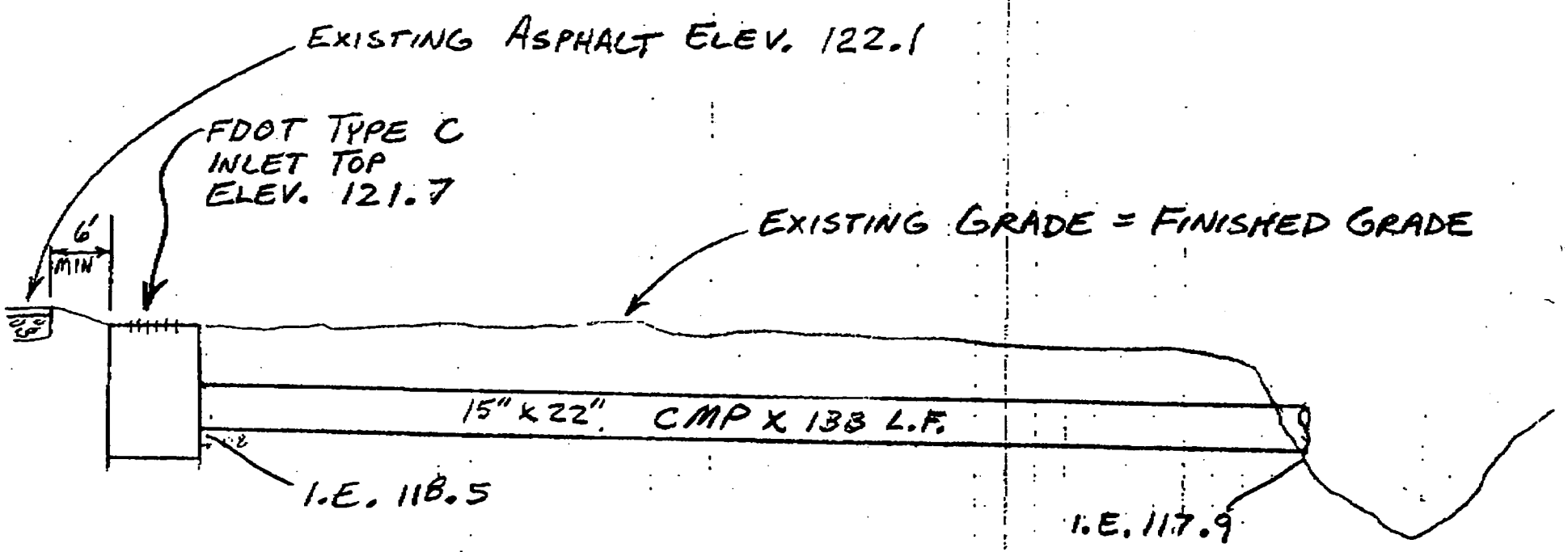


YARD WASTE & STORAGE SURFACE DETAIL

NTS



SITE IMPROVEMENT PLAN AND DETAILS	CITRUS COUNTY SOLID WASTE MANAGEMENT CENTRAL LANDFILL



D.B.I. PROFILE @ RECYCLE AREA

NTS

Post-it™ brand fax transmittal memo 7671 | # of pages ▸ 1

To KIM FORD	From MIKE MOORE
Co. DEP	Co. CITRUS CO
Dept. SOLID WASTE	Phone # (904) 746-4107
Fax # (813) 744-6125	Fax # 746-1203

CITRUS COUNTY CENTRAL LANDFILL	DWG BY	DATE	REV	SHT
	MDM	10-2-95		1 of 1

STATE OF FLORIDA
COUNTY OF CITRUS
INVERNESS, FLORIDA

County Warrant

No. 076429

DEPARTMENT	ACCOUNT	PUR. ORDER	INVOICE NUMBER	AMOUNT	DESCRIPTION
5212	54912		OPER PERMIT	250.00	APPL FEE FOR LANDFILL

RECEIVED
SEP 15 1995
Department of Environmental Protection
SOUTHWEST DISTRICT
BY

PLEASE DETACH
BEFORE DEPOSITING

VOID IN 60 DAYS

SUN BANK & TRUST COMPANY
INVERNESS, FLORIDA

STATE OF FLORIDA
County Warrant
COUNTY OF CITRUS
INVERNESS, FLORIDA

No. 076429

63-115
631

DATE 09/11/95

PAY Two hundred fifty dollars and XX/100 cents

AMOUNT $250.00

3270.1

CITRUS COUNTY ACCOUNTS PAYABLE

TO THE ORDER OF
FLORIDA DEPT OF ENVIRONMENTAL PROTECTION
3804 COCONUT PALM DRIVE
TAMPA, FL 33619

Vicki Phillips
CHAIRMAN BOARD OF COUNTY COMMISSIONERS

SEAL

Betty Strifler
CLERK AND AUDITOR

CK NO. [redacted]

permit file

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
SOUTHWEST DISTRICT

CONVERSATION RECORD

Date 9/13/95 Subject GW/leachate mtg

Time 1:15 Permit No.

County Citrus LF

M Susie Metcalfe Telephone No. 904/746-5000

Representing

☒ Phoned Me [X] Was Called [ ] Scheduled Meeting [ ] Unscheduled Meeting

Other Individuals Involved in Conversation/Meeting

Summary of Conversation/Meeting

Meeting set for 2 pm, Tue 9/19 to discuss leachate & groundwater issues. She, Gary Kuhl & John Miller will be attended. Bob Butera, Kim Ford, Jay Thabaraj & myself will attend for FDEP

(continue on another sheet, if necessary)

Signature

Title

PA-01
1/93
hjs